Anticipation, Acquisitions and Bidder Returns:

Industry shocks and the transfer of information across rivals

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Abstract

We document market anticipation of merger bids and that less anticipated bids earn significantly higher announcement returns. Subsequent bidders experience significant and positive returns surrounding initial industry bid announcements. These results suggest that announcement period returns underestimate the wealth effects of bidding. After recognizing anticipation, bidding activity is, on average, a significant wealth-creating event. Moreover, bidders pursuing public targets increase shareholder wealth and bidders in stock swaps do not lose. These results are in contrast to conventional wisdom. Our results shed light on the correct magnitude of acquisition returns and on information transfer throughout an industry surrounding an economic shock.

Anticipation, Acquisitions and Bidder Returns

1. Introduction

A simple definition of an efficient market is one that rapidly processes new information. A problematic issue in analyzing market effects is that this "new" information is not always a complete surprise. Analysts compete to uncover information in advance of public release [Atiase, (1985)] and [Chari and Jagannathan (1988)]. Moreover, Hou (2007) finds that industries are "the primary channels for news dissemination in the equity market."

If the market anticipates that a firm will announce a bid, actual announcement returns will not fully capture the wealth effects. Moreover, since the magnitude of commonly measured returns to bidding firms is close to zero (see for example Andrade, Mitchell and Stafford (2001)), any anticipation effects have the potential to drastically alter perceived wisdom. In this paper, we present evidence consistent with the anticipation of bidding activities by the market. The evidence is pervasive across different types of bids and consistent with the interpretation that bidding, on average, is a wealth creating activity. We find that abnormal returns for less anticipated bids are significantly positive. Abnormal returns to bidders that include anticipation effects are also significantly positive. These results could help explain why bidders continue acquisition activities in spite of extensive literature reporting zero or negative announcement returns. We also find that in the period preceding an initial industry bid, the market reaction to a rival depends on whether that firm will also subsequently announce a bid. We explore alternate explanations for these results, but none eliminate the anticipation argument.

Information released by an acquisition announcement may impact all firms or specific firms in the industry. Industry mergers are known to occur in waves [Mitchell and Mulherin (1996) and Harford (2005)]. If subsequent bidding by a rival is anticipated at the time of an earlier bid, the later announcement period returns for that rival will not accurately reflect the wealth effect of its own bidding activity.[1] Indeed, as far back as Jensen and Ruback (1983), it has been conjectured that bidding could be less of a surprise because bidders tend to be larger firms more heavily followed by analysts. Unlike tests of program bid announcements by a specific firm [e.g., Schipper and Thomson (1983)], we

[1] Hietala, , Kaplan, and Robinson (2003) discuss the difficulty of disentangling mixed effects at acquisition announcements. Bhagat, Dong, Hirshleifer, and Noah (2005) develop new techniques to measure gains from acquisitions. Neither paper analyzes anticipation effects.

develop our tests within industries of bidding firms. Our premise is that acquisition bids preceded by a long interval since the last industry bid (a dormant period) are less likely to be anticipated. This technique is also used to measure the degree of surprise for rivals of acquisition targets in Song and Walkling (2000). To the best of our knowledge, this is the first analysis of anticipation and information transfer throughout the industry of a bidding firm.[2]

Using a sample of 6,930 acquisitions from 1985 to 2009, we find strong support for anticipation effects in bidding activities. Abnormal returns to bidders are significantly and positively related to the length of the interval between industry bids. The first bidder after a minimum twelve-month dormant period in an industry (initial industry bidders) experiences significantly positive abnormal returns averaging 1.5%, nearly 100 basis points greater than that of bidders with shorter dormant periods in their industry. Moreover, rivals who will announce bids in the future earn abnormal returns immediately *preceding the time of the initial bid in the industry.* These returns adjust in sign and proportion to the abnormal returns of the respective initial industry bidder. Thus, information associated with an initial industry bid also affects the prices of 'would be bidders' long before their actual bidding announcements. When this anticipated effect is incorporated into the measurement of subsequent bidding returns we find that bidding is a wealth creating activity and that many previously believed paradigms about acquisitions are reversed or significantly attenuated.

Our results are consistent with the interpretation that bidding activity is (on average) a wealth creating activity. This is true for less anticipated acquisitions and also true for acquisitions where anticipated effects are included in the analysis. This finding contrasts with the negative or zero abnormal returns for bidders documented in the literature. Indeed, we find that the abnormal announcement returns to bidders targeting publicly traded firms are negative and consistent with the literature. However, abnormal announcement returns in less anticipated bids for public targets are statistically insignificant. Similarly, while the literature reports significantly negative abnormal announcement returns to bidders in stock acquisitions of public targets (stock swaps), we find that these bidders earn substantially higher (i.e. less negative) returns when they announce less anticipated stock swaps. In addition, when we incorporate the abnormal

[2] The early literature on program bidders studies anticipation but is focused on sequential bids by a single firm. However, research has addressed the stock price reaction of rivals of *target* firms. Eckbo (1983, 1985, 1992), Stillman (1983), Eckbo and Wier (1985), and Mitchell and Mulherin (1996), find that rivals of acquisition targets earn significant, positive abnormal returns. Fee and Thomas (2004) document significant reactions to firms involved in product-market relationships with bidders and targets. Song and Walkling (2000) find that rivals of target firms experience abnormal returns to the extent that they are also likely to be targets.

returns bidders experience around the time of the initial industry bid into the overall wealth effect of their bidding, we find that bidders of public targets or stock swaps experience positive or insignificant returns rather than the negative returns cited in the literature. These results do not negate the importance of form of payment or the target's organizational structure, but they do indicate the existence and relative importance of anticipation effects.

Our approach is distinct from methodologies examining the clustering of acquisitions and merger waves. Initial bids do not have to be followed by additional bids in their industry and conventionally measured waves (Harford (2005)) are often preceded by bidding activity of rival firms. Our results also hold after controlling for form of payment, organizational structure, target attitude, target nationality, multiple bidders, offer outcome, merger waves, and other attributes associated with bidder returns in the literature.

The remainder of the paper is organized as follows: Section 2 reviews the relevant literature and develops the research questions. Section 3 describes our methodology and sample. Section 4 describes empirical results. Section 5 concludes.

2. Background and hypotheses

2.1 Bidder Returns

The finance literature has long been intrigued with understanding the magnitude and factors affecting abnormal returns to bidding firms. Jensen and Ruback (1983), Jarrell, Brickley and Netter (1988), Jarrell and Poulsen (1989), and Andrade, Mitchell and Stafford (2001) summarize a large body of evidence spanning four decades and report that the announcement period return to bidders is generally zero or slightly negative.[3] For example, Andrade, Mitchell, and Stafford (2001) report that bidders for public targets experience an average abnormal announcement return of -0.7% over the period of 1973-98. Bidding returns are also negative in each of the three sub periods analyzed.

Bradley and Sundaram (2004) find significantly positive performance for bidders acquiring US firms during the 1990s, but only when the pre-announcement period is included. Eckbo and Thorburn (2000) report that bidders from

[3] A partial list of the literature examining the conditional returns to bidders includes Travlos (1987), Lang, Stulz and Walkling (1991), Hubbard and Palia (1995), Eckbo and Thorburn (2000), Fuller, Netter and Stegemoller (2002), and Moeller, Schlingemann and Stulz (2004).

the United States earn insignificant returns when acquiring Canadian Firms. Roll (1986), Jensen (2004), and Shleifer and Vishny (2003) argue the influence of hubris and overvaluation as explanations for bidder returns. Other factors affecting bidder returns include form of payment [Travlos (1987), Huang and Walkling (1987), and Wansley, Lane and Yang (1983)], organizational structure, and nationality of the target [Faccio, McConnell, and Stolin (2007), Fuller, Netter, and Stegemoller (2002) Moeller, Schlingemann and Stulz (2004, 2005)]. Finally, Masulis, Wang and Xie (2007) report a significant negative relation between the existence of anti-takeover provisions and acquirer returns.

2.2 Anticipation effects

Early research addressing anticipation in bidding activities focuses on program bids and reports mixed results. Program bids are acquisition agendas announced by a particular company. Schipper and Thompson (1983), Malatesta and Thompson (1985), and Loderer and Martin (1990) suggest that additional bids of a company are anticipated at the time their acquisition program is announced. Alternatively, Asquith, Bruner and Mullins (1983) find that bidding firms earn significantly positive returns for each of their first four bids. More recently, Fuller, Netter, and Stegemoller (2002) find that during the 1990's the order of the acquisitions does not affect excess returns to frequent bidders. Similarly, Conn, Cosh, Guest, and Hughes (2004) find that returns from U.K. acquirers announcing multiple bids are similar to those from single acquirers. In contrast, Billett and Qian (2008) report that acquirers of second and higher order deals experience significantly more negative returns and attribute this result to managerial overconfidence. Becher (2009) finds that the market anticipates subsequent bidding by banks around the passage of merger related banking regulation. Song and Walkling (2000) note that rivals of target firms experience contemporaneous positive abnormal returns to the extent that they are likely to be targeted themselves.[4] While not a formal analysis of anticipation effects, the acquisition probability model of Palepu (1986) recognizes the possibility of anticipation by including an explanatory dummy variable set equal to one if an acquisition occurred in a firm's industry in the previous 12 months.

2.3 Merger waves and the time between industry bids

The concept of merger anticipation is related to (but distinct from) evidence that acquisitions cluster by industry. Mitchell and Mulherin (1996) report clustering for target firms. At the industry level, 50% of the targets they examine over the 1982-89 period are concentrated in 25% of the years. Andrade and Stafford (2004) provide

[4] The contagion literature also recognizes the anticipation effect across many other venues.

preliminary evidence that clustering occurs for bidders. Harford (2005) suggests that an industry merger wave is an efficient response to industry-specific shocks. On average, mergers occurring during waves are associated with significantly positive wealth gains; mergers in the same industry, but outside of the wave period do not create wealth. Akbulut and Matsusaka (2003) report that the means and medians of combined target and bidder returns for diversifying acquisitions are significantly positive during waves and insignificantly different from zero outside of the waves. Mean and median bidding firm returns are insignificantly negative both inside and outside of waves.[5]

In theoretical work, Rhodes-Kropf and Viswanathan (2004) suggest that periods of over or undervaluation lead to merger waves. Rhodes-Kropf, Robinson, and Viswanathan (2005) find empirical support for this proposition. These ideas are also reminiscent of Gort (1969) who suggests that exogenous shocks to an industry provide opportunities for consolidation and expansion. The occurrence of acquisition activity after a long period without such activity could signal an industry-wide shock causing revaluation of targets (as in Song and Walkling, 2000) or bidders, as examined in this paper.

Our approach is different from the analysis of merger waves. Instead, we follow Song and Walkling (2000) by using the time between industry bids as a proxy for the degree of surprise about an acquisition. While merger waves and industry dormant periods are likely to be correlated, one need not be consistently associated with the other. Merger waves are generally based on statistical concentrations of acquisition activity within an industry. These concentrations are useful but do not recognize industry bidding activity preceding a wave. Clustering of bidding within an industry may be preceded by a long or short dormant periods. For example, in many cases another industry bid precedes the beginning of a wave as identified by Harford (2005). Moreover, a long interval between industry bids can be followed by an intense cluster of activity (i.e., an industry wave) or the absence of additional activity. A subsequent bidder need not follow an initial industry bid.

2.4 Rhodes-Kropf and Robinson

Our empirical analysis can be related to the work of Rhodes-Kropf and Robinson (2006) who develop a new theory of mergers based on search, scarcity, and the complementarities of assets. The Rhodes-Kropf and Robinson model involves two states of the world, which they term the "no merger state", and the "mergers possible state". In the

[5] Additional research on merger waves is contained in Gugler, Mueller, and Yurtoglu (2004).

spirit of Gort (1969) an exogenous catalyst could shift the economy from the 'no merger state' into the 'mergers possible state'. Responding to this shock, firms search for merger partners in an attempt to maximize value. The probability of subsequent merger depends on the level of search costs and the scarcity of appropriate partners. At any time the economy may shift back into the 'no merger state'. When a suitable merger partner is found, the division of gains between the partners is determined by bargaining power as driven by the scarcity of their assets. The market reaction to a merger announcement is directly related to the potential size of gain from merger and the revision in probability of these events.

The Rhodes-Kropf and Robinson model has specific implications for our empirical work. In our analysis, transition into the 'mergers possible state' becomes more likely with an acquisition attempt following a long time between industry bids. A shift back to the 'no mergers state' is not as dramatic but would be related to a subsequent (longer) time between industry bids. That is, an increased amount of time between acquisitions in an industry suggests they are less likely to occur. The initial industry bid can contain important information concerning the complementarity and scarcity of assets in merger and the correct valuation of firms in general. Information is inherent in the factors announced at merger and known to affect bidder returns (whether the merger is horizontal, form of payment, etc.) Information is also relayed through the market's reaction to the initial bid. For example, the sign and magnitude of the abnormal return to the initial bidder provide the market's assessment of the nature of this particular bid. Positive abnormal returns to the initial bidder and rivals are indicative of opportunities in this industry and signal an increased probability of shifting into the 'merger possible state'. Negative returns may deter subsequent bidding or signal the absence of subsequent opportunities. The market's anticipation of future bidding activity is inherent in this process. As Rhodes-Kropf and Robinson note, "… the rational market updates correctly." Because of this price adjustment, the gains to subsequent bidders will be lower and the market reaction to the announcement of their bids could be reduced. Ultimately, merger activity ends as prices are corrected.

2.5 Research questions

To test the implications of anticipation and the transmission of information surrounding an initial bid we propose three research questions. First, is bidding information anticipated and more specifically, is anticipation related to bidding activity within an industry? Second, is information anticipated and released around the time of the announcement of an initial industry bid? Third, is the information specific to all rivals or only to firms that will subsequently bid?

First,

"Are bids anticipated and is anticipation related to bidding activity in the industry?"

To answer this question, we examine the returns to bidding firms preceded by various time periods between industry bids. In our analysis, the longer the time between such bids, the more likely the industry is in a 'no-mergers state', the less likely bidding is anticipated, and the more likely the bid is a surprise. Assuming bids are wealth creating, abnormal returns will increase with the magnitude of the surprise, which we measure with the length of time between industry bids.

Second,

"Does the market anticipate industry-wide bidding activity and adjust prices of rival firms?"

And in particular,

"Does the market transmit expectations into the prices of all rivals or just rivals who are 'would be' bidders?"

To answer these questions, we examine the type of information inherent in an initial bid and how this information is transferred across rival firms. That is, what happens to the prices of rival firms around the time of an initial industry bid when the "merger possible state" becomes more likely? Information specific to the bidding process would primarily affect *'would be'* bidders. Information generic to the entire industry would affect all rivals. To test this, we compare returns of subsequent bidders to non-bidding rivals. Of course, the possibility also exists that the information is specific to bidding but that the market cannot correctly discern which firms are likely to bid. In this case, the prices of all rivals would adjust. Moreover, rivals could learn from the initial market reaction and adjust their bidding behavior. Since true bidding intentions are only known to the bidder before they are announced, the extent of learning by rivals must remain unknown.

The level of information inherent in the initial bid is revealed in the magnitude of the market's reaction to the initial bid. Thus, one way to test for the transfer of information among rivals is to test the relation between the level of abnormal rival returns and the sign and magnitude of the initial bidder's abnormal return. If the market's reaction to the initial bid conveys important industry information, we would expect a rival firm's stock price to adjust proportionately to the magnitude of the initial bidder's return. Bidding specific information would primarily affect other likely bidders.

Nevertheless, even if anticipation does occur, there are at least four reasons why our empirical tests may not detect it. First, the appearance of an initial industry bid may be unrelated to the transition to a 'mergers possible state' in

the same industry. Second, our industry classification could be inadequate. Third, our measure of surprise, the time between industry bids, could be flawed or diminished by confounding effects. Fourth, our measure of the time between bids relies on public announcements. Private negotiations are often reported with a lag or may not be reported at all. Moreover, selling firms may solicit bids from multiple parties resulting in the spread of private information in the industry even before the first public announcement. The spread of private information prior to public announcements can result in price adjustments that bias against our finding significant abnormal returns. Boone and Mulherin (2007) report that 13% of the firms in their sample had multiple public bidders. However, about half of these firms disclosed private negotiations with other potential bidders in SEC documents. Finally, investors could anticipate bids through other means (e.g., a predictive model) without reference to the previous industry bid. All of these reasons work against our finding significant results.

3. Research design and sample characteristics

3.1 Sample selection

We use the SDC database to identify both domestic and international acquisition bids above $10 million by US bidders over the period 1/1/1985 through 12/31/2009. This produces an initial sample of 24,052 deals. We delete financial firms and utilities (CRSP SIC codes 6000 through 6999 and 4900 through 4999) and cases where CRSP SIC codes or CRSP returns are not available to calculate abnormal returns. There are 54 cases where multiple bids occur on the same day in a particular industry and where the time since the previous bid is over one year. In these cases, we cannot tell which firm bids first. This is important in our analysis. To avoid measurement problems, we delete these bids (113 in total) and their 139 corresponding subsequent bids. However, retaining these bids does not alter our results. To avoid spurious results from industries with few firms, we delete bidders in four-digit CRSP SIC industries containing less than five firms. Our screening rules produce a sample of 6,930 mergers.

The first three columns of Table 1 show the distribution of acquisition bids over the sample period. The largest concentration of bids occur in the 1997 through 2000 period. However, the percentage of acquisitions never exceeds 9% of

the entire sample in any year. Across the sample, our firms are distributed among 367 unique 4-digit SIC codes.[6] The fourth column of Table 1 indicates the number of different four-digit SIC industries participating in bidding activity in a particular year. Thus, in 1985 61 (4-digit SIC) industries had at least one bidder attempting an acquisition. These numbers increase substantially throughout the 1990's, consistent with the increase in acquisition activity.

3.2 Measuring the time between industry bids

Our first research question tests whether the time between industry bids is related to bidder abnormal returns. To calculate the time between bids we sort all bidding firms with CRSP SIC codes chronologically within their primary 4-digit classification. The time between industry bids is defined as the number of days since a firm in the bidder¹s 4-digit CRSP SIC industry announced a previous acquisition bid. In defining the time between bids we use all available cases with valid CRSP SIC codes even if these firms are deleted because of subsequent screening rules. This procedure enables us to capture the potential shock that all of these firms have on the industry. However, firms without CRSP SIC codes cannot be considered in determining the time between bids. Moreover, other shocks to an industry also signal information. These shocks include acquisitions by firms in related but different industries, the existence of merger waves within an industry and the existence of a target firm in the industry. Although we examine the impact of merger waves and exclude firms in the industry that become targets, our measure of the time between bids does not capture other industry shocks. Nevertheless, to the extent that the time periods between industry bids are misclassified or miss other important shocks, we bias against finding significant results.

A typical time line for acquisitions within an industry is shown in Figure 1. We define an "initial industry bidder" as the first firm in an industry to attempt any acquisition bid after a minimum 12-month dormant period. Subsequent bidders are rival firms that announce acquisitions before the next initial industry bid. By definition, the time since the previous industry bid for subsequent bidders is less than 12 months. Non-bidding rivals are those rivals that do not bid before the next initial industry bidder. Figure 1 also illustrates the two distinct time periods at which we measure abnormal returns. The first is the actual announcement date for each bidding firm indicated in the figure by I (for initial bidder) and a, b, c, and d for rivals who announce their own bids subsequent to the initial industry bidder. In the second

[6] Except where noted we use CRSP (historical) SIC codes. Kahle and Walkling (1996) discuss the advantages, disadvantages, and inconsistencies between Compustat and CRSP SIC codes. In sensitivity tests, we also confirm our primary results regarding dormant periods and abnormal returns using SDC industry classifications.

case, we also examine the abnormal return to subsequent bidders and to non-bidding rivals (who are indicated by x in the figure) at the time when the initial industry bid is announced.

The probability of being an initial industry bidder is directly related to the number of firms in an industry. In the results shown in the tables, we eliminate bids in industries with fewer than five firms and also control for the number of firms in an industry in our multivariate tests. Our main conclusions, however, also hold if we restrict our analysis to industries with greater numbers of firms. For example, qualitatively similar results obtain if we restrict our analyses to industries with greater than 20 firms.[7] In our first empirical tests we use two specifications of the time since the previous industry bid: 1) the level of dormant period in days, and 2) a dummy variable indicating initial industry bidders (i.e., dormant periods greater than one year). There is reasonable justification for both of these specifications. First, the time between bids is the actual time without announced activity. However, financial information is frequently produced on an annual basis (e.g., annual reports, yearly analyses by analysts and investment bankers, etc.). Bids occurring less than one year apart are likely to produce discussion of acquisitions in these analyses and keep the topic alive in the minds of investors. A year without a bid announcement in the industry is less likely to result in such a reminder; this suggests the use of a binary variable to identify initial industry bidders.

One illustration of the time between bids is the Steel Works and Blast Furnace Industry (SIC code 3312). Thirty-seven firms in this industry made acquisition bids over our sample period. Six of these would be classified as initial industry bidders since the preceding bids occur more than a year ago. The length of the dormant periods for these six bids is 2,126, 388, 974, 470, 1064, and 492 days, respectively. All of the other fourteen bids are preceded by other industry bids within the previous 12 months.

3.3 Distribution of initial industry bidders and active bidders

The fifth column of Table 1 shows the distribution of initial industry bidders (i.e., where the time between industry bids exceeds 12 months). A total of 1,280 bids are classified as initial industry bids. The number of initial industry bidders remains high throughout the mid to late nineties, dropping somewhat at the end of our sample period.

[7] Since dormant periods are likely to be a function of the number of acquisitions in an industry, we also calculate abnormal dormant periods between acquisitions assuming a uniform distribution of bids across time. Abnormal dormant periods are defined as the difference in days between the actual and expected dormant periods. Here, 'expected dormant period' is defined by dividing the number of days in our sample (9,131) by the number of acquisitions (plus one) occurring in an industry. In unreported tests, we find the merger announcement returns are significantly higher for deals with longer abnormal dormant period in both univariate tests and multivariate regressions.

3.4 Distribution of the time between industry bids

A shorter time between industry bids involves more regular bidding activity and is more likely to be associated with the 'mergers possible state' of Rhodes-Kropf and Robinson. A shorter time between bids increases the likelihood that industry stock prices have partially adjusted. Table 2 reveals the distribution of the time between industry bids (in days) for all 6,930 bidders. The mean time between industry bids in our sample is just over a year, 381 days. However, outliers distort this value; the median period is just 62 days. Note that the range of time between bids is quite large; the lower quartile is just 14 days, while the upper quartile is 246 days.

By definition, initial industry bids occur after at least 12 months without other industry bids. The second row in Panel A of Table 2 reveals the distribution of time between bids for the 1,280 initial industry bidders. The mean and median time between industry bids for the initial industry bidders are 1,730 and 835 days, respectively. These periods amount to about 4.7 and 2.3 years, respectively. The distribution of dormant time preceding bids for these firms is widely distributed: the lower quartile is 523 days (1.4 years) while the upper quartile is 1,753 days (4.8 years). Since the minimum time between bids to define an initial industry bidder is one year, an industry can contain multiple initial bidders over the entire sample period. Panel B of Table 2 reveals the distribution of initial industry bidders per industry. The mean and median number of initial industry bidders per industry is 3.57 and 3.00, respectively. Eighty-eight industries have only one initial industry bidder over our sample period. Another 57 industries have two initial industry bidders. Two hundred and eighteen industries (60% of our initial bids) have three or more initial industry bidders.

4. Empirical Results

Recall from Figure 1 that there are two time-specific reference points where we measure abnormal returns. The first is the traditional announcement period surrounding a bid by a particular firm. We examine traditional announcement returns to bidders in Sections 4.1, 4.2, 4.3, and 4.7. (Tables 3, 4, 5, and 9). The second reference point is the announcement of the initial industry bid. We examine the returns to the initial industry bidders and their rivals at time of the initial bid in Sections 4.4 to 4.6. (Tables 6 to 8).

4.1 Bidder abnormal announcement returns classified by the time between industry bids

Firms with dramatic increases in stock price are more likely to make acquisition bids. Therefore, significant stock price changes in the estimation period of the market model can cause bias in the estimation of coefficients. To avoid this

bias, we use the simpler market adjusted procedure to calculate cumulative abnormal returns (CARs). Specifically, CARs are calculated as the cumulative stock return minus the cumulative market returns during the same period.

Table 3 presents abnormal returns for all bidders classified by length of the time between industry bids (i.e. their bid and the previous one in the industry). As shown in Panel A, the average three-day abnormal return across all 6,930 bidders is 0.71%, statistically significant at the 1% level. The median abnormal return for all bidding firms, however, is only 0.20%. Fifty two percent of these abnormal returns are positive. Panel B shows that for the sample of 2,356 bidders of public targets, the average and median returns equal -1.44% and -0.97%. The negative mean abnormal return is statistically significant at the 1% level. These negative results are consistent with the widespread findings in the literature that bidders of public targets lose small amounts at the time of an acquisition announcement.

Our first research question asks:

"Are bids anticipated and is anticipation related to bidding activity in the industry?"

To answer this question we compare the abnormal returns for bidders with greater than and less than one year since the previous industry bid. (Non-bidding rival firms are examined in a subsequent section.) Obviously, industries with less than one year between bids have more frequent bidding activity. This frequent bidding environment is consistent with a 'mergers possible state' and where anticipation is more likely to have adjusted prices. Correspondingly, abnormal returns would be lower in these cases.

The results in Table 3 are consistent with this expectation. The mean abnormal returns for all bidders with less than one year since the previous bid is 0.53%. By contrast, the average abnormal return for initial industry bidders (i.e., the time since the last bid exceeds a year) is 1.50%. Thus, abnormal announcement period returns for bids following a year of bidding inactivity in their industry are 97 basis points higher than that of bids following another in the industry in the previous year. The difference is statistically significant at the 1% level. In addition, about 55% of initial industry bidder abnormal returns are positive, compared to only 51% for bidders where the previous bid occurred in the past one year.

We next contrast cases with time between bids of less than one year to those ranging from one to five years and beyond five years. Mean and median abnormal bidder returns increase monotonically with these time categories. Mean abnormal returns across the three classifications rise from 0.53% where the previous bid was in the past year to 1.30% for one to five year dormant periods and 2.12% for dormant periods exceeding five years. Median abnormal returns across the three categories of 'time since previous bid' are -0.11%, 0.39% and 1.00%, respectively. The percentage of firms with positive abnormal returns also rises across these categories. The increasing pattern of abnormal returns is consistent with

anticipation. The importance of the time between bids and the greater returns for less anticipated bids are also consistent with the notion that average bidding activity for these firms is a wealth increasing activity.

Panel B presents the abnormal returns of bidders of public targets. As we have noted, on average these bidders lose at the announcement of their bids, earning a three-day average abnormal return of -1.44%. This figure is statistically significant at the 1% level. Bidders with a dormant period greater than one year, however, do not lose, posting an average abnormal announcement return of an insignificant 0.12%. In contrast, bidders of public targets with dormant period less than one year have an average abnormal announcement return of -1.77%, and this figure is statistically significant at the 1% level. The median returns and the percent of firms with positive announcement returns show a similar pattern. Finally, when we further separate the bidders with dormant period longer than five years, we find even more positive returns for these bidders.

4.2 Bidder abnormal returns and the time between bids across various control variables

In this section we introduce the control variables we will use in our multivariate tests. These variables can be classified into three categories: variables specific to the deal (e.g., is the deal for stock?), variables related to the target (e.g., is the target public?), and variables related to where the bid occurred in reference to any merger wave for its industry. Deal specific variables include form of payment (cash, stock, mixed), the existence of multiple bidders, form of the acquisition (horizontal, non-horizontal), attitude of the target (friendly, unfriendly), and outcome of the acquisition (successful, failure). Target related variables include organizational form and nationality of the target (public or private; domestic or foreign) and incorporation of the target (Delaware or other). Each of these variables has been linked to the magnitude of bidder returns in the literature.

The first column of Table 4 shows the name and percentage of each attribute in our sample. For example, bids for private targets comprise 66.0% of our sample. In the paragraphs below we first compare mean and median abnormal returns across the attributes (columns 3 and 4, respectively) to results established in the literature. Following this we discuss results for the variables categorized by the time between industry bids.

4.2.1 Deal Specific Variables

Consistent with the work of Chang (1998), Fuller, Netter and Stegemoller (2002) and others, we find that bidders earn significantly higher returns in acquisitions of private targets. Similar to work dating back to Travlos (1987), we find that bidders in stock offers earn lower returns than those in cash or mixed offers. Bidders of stock swaps, defined as bids for a public target with at least 50% in bidder stock, also earn significantly negative returns. Bradley, Desai, and Kim

(1988) and Eckbo and Betton (2000) note that competition lowers bidder returns; bidders in our sample earn significantly positive returns in single bid acquisitions and insignificant returns in multiple bidder transactions. The literature reports mixed results for differences in bidder returns across horizontal and non-horizontal acquisitions. We find that abnormal returns to bidders involved in horizontal acquisitions are slightly lower than bidders for non-horizontal targets. Bidders in successful acquisitions earn higher mean and median returns than in unsuccessful acquisitions. Schwert (2000) notes the difficulty in identifying hostile offers and reports mixed results for the relation between bid premia and hostility. In our univariate analysis, bidders earn significantly lower returns in hostile offers. This is undoubtedly correlated with results for multiple bidders.

4.2.2 Target Specific Variables

Daines (2001) notes that Delaware firms receive more takeover bids and are more likely to be acquired. We find that bidders pursuing targets incorporated in Delaware earn lower returns. If these firms do receive more takeover bids, this result could be correlated with the effect of competition. Returns to bidders targeting foreign firms are insignificantly different from bidders targeting domestic firms. These findings are different from those of Moeller and Schlingemann (2005); however, multivariate results in the next section are consistent with their findings.

4.2.3 Wave Related Variables

Recent work exploring clustering of acquisitions and merger waves includes Mitchell and Mulherin (1996), Andrade and Stafford (2004), Harford (2005), Akbulut and Matsusaka (2003), and Rhodes-Kropf, Robinson, and Viswanathan (2005). As we have noted, the end of a dormant period is not necessarily followed by a merger wave. Conversely, the technologies used to identify merger waves usually do not require an absence of bidding activity before the beginning of the wave. Instead, a wave is identified by a clustering of acquisition activity that may or may not be preceded by other acquisitions in the industry. Nevertheless, our results need to be compared to established evidence on merger waves. Valuation effects for bidders can differ by their activity before, during or after a wave. We test the effects of waves using the definitions of Harford (2005).[8]

[8] We are grateful to Jarrad Harford for supplying us with names and dates of the merger waves he identifies. To identify waves Harford calculates the maximum 24 month period of merger intensity in the 1980s and also in the 1990s for each of the Fama-French 48 industries. Merger intensity is defined to include both target and bidder activity. These periods of maximum intensity are 'potential' waves. Next, he simulates the highest 24 month level of activity for each industry assuming the activity had occurred

Our analysis of merger waves focuses on several questions. First, how many of our initial industry bids occur before, during, or after a wave? Second, do we observe different results for bids (and initial bids) occurring at different parts of a wave? Two differences in our methodology and that of Harford should be noted. First we use a more detailed description of industry. In comparison to the 48 industries of Fama-French (1997) we have 367 unique four-digit SIC industries. Also, Harford's activity measure includes both bidder and target activity while our focus is on bidders. For both of these reasons, the beginning date of the wave is often different from our first bidding activity. Since his measure includes target activity as well, this serves as another check on how our results would be altered by target related activity.

We code each bidder by where it is in a wave using the three dummy variables defined in Harford (2005). Pre-Wave is equal to one if the bid occurs in the 12 months before a wave; In-Wave is equal to one for bids within 24 months of the start of a wave, and Post Wave is equal to one for bids within 36 months after the end of a wave.

Results in Panel J reveal that the bulk of all bids (54%) occur in periods unrelated to waves. Consistent with our statement that "initial industry bids are different from the analysis of waves", we note (in untabulated results) that 67% (862 out of 1,280 bids) of initial bids (i.e., time between industry bids greater than a year) are unrelated to waves. Univariate results indicate that bidders earn significantly greater returns in the pre-wave period and in periods unrelated to waves. Conversely, they earn significantly negative returns in the post wave period. [9] Finally, Panel K examines abnormal returns for contracting, expanding, and stable industries. At the time of an acquisition bid we examine the size and growth of the four-digit SIC (CRSP) industry. We define contracting industries as those where number of firms decreased more than 20% compared to previous year. Expanding industries are those where the number of firms increased more than 20% compared to the previous year. The remaining industries are defined as stable.

4.2.4 Results for different dormant periods across specific variables

Without adjusting for anticipation, the results in Table 4 are consistent with what we know from the existing literature on corporate acquisitions. After considering anticipation, however, we will show that some well-established

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randomly. Merger waves are those two year periods of intensity exceeding the 95th percentile from the distribution. There is no requirement that they be preceded by a dormant period.

[9] We also investigate the use of governance variables. Masulis, Wang, and Xie (2005) report a significant negative relation between the existence of anti-takeover provisions and acquirer returns. Unfortunately, our sample size drops by about 60% if we attempt to include either the GIM index, the E index from Bebchuk, Cohen and Ferrell (2004), or the existence of staggered boards. In this reduced sample (of primarily larger firms), we find similar coefficient and statistical significance for the dormant period variables in regressions (1) to (5) of Table 5. In regression (6), the dormant period variable remains positive but loses statistical significance.

results disappear. For example, bidders in less anticipated stock offers earn significantly positive abnormal returns, a result opposite to conventional wisdom. Bidders in less anticipated acquisitions of public targets earn insignificant abnormal returns. This is in stark contrast to the significantly negative abnormal returns noted in the literature. Both results are consistent with anticipation. We elaborate on these results in the paragraphs below.

To examine the impact of anticipation across each control variable we compare mean abnormal returns for cases where the previous bid was either less than year ago (column 5) or greater than one year ago (column 6). Median results are shown in columns 7 and 8. Significance tests comparing the longer and shorter dormant periods are shown in the last two columns. The large quantity of information detailed in table 4 is revealed succinctly in Figures 2a and 2b. In almost all bid classifications, abnormal returns are dramatically larger in cases where the previous bid was more than a year ago. This is true for means and medians; bidders in less anticipated acquisitions (i.e., with longer dormant periods) earn larger returns.

Mean abnormal returns for firms where the previous industry bid was more than a year ago are greater than cases with shorter dormant periods for 26 of the 28 categories examined. Mean returns are significantly different at the 5% level or better in 17 of these categories. Median abnormal returns for cases where the previous bid was more than a year ago are larger than returns in shorter dormant periods for 22 of 28 categories examined. Median returns are significantly different at the 10% (5%) level in 17 (15) of these categories. These results provide strong support for our assertion that anticipation affects bidding returns.

4.3 Multivariate Analysis of bidder abnormal returns

Table 5 examines the relation between bidder abnormal returns and the time between industry bids while controlling for other potentially important variables. The sample consists of all bidding firms including initial and subsequent bidders. The dependent variable is the abnormal return earned by each bidder at the time of its own bid announcement. All regressions control for the number of firms in an industry.[10] Regression (1) uses bidder, target, and deal specific variables. Regression (2) combines these variables with dummy variables identifying waves as specified in Harford (2005). Regression (3) adds interaction terms to capture any differential effect of initial industry bidders in waves. Regressions (4)

[10] In sensitivity tests not shown, we confirm that results are qualitatively similar by the addition of industry or year dummies. We also confirm that results remain qualitatively similar if relative size is replaced by bidder size.

and (5) use alternate specifications of the time between industry bids. In regression (4), we replace the single dummy variable for initial industry bidders with two dummy variables for dormant periods between one and five years and dormant periods greater than five years. In regression (5) we use the continuous specification of the time between industry bids rather than dummy variables. In regression (6), we focus on a sub-sample analyzing bidders of public targets using the same control variables as in regression (3). We emphasize this subsample here and later in the paper because of the well-known result that bidders of public targets suffer negative abnormal returns.[11]

In all specifications the results are consistent with anticipation: bidder abnormal returns are significantly positive for initial industry bidders, for dormant periods over five years and for the continuous definition of dormant period. For example, results of the first regression suggest that after adding relevant control variables, abnormal returns for cases where the previous bid was longer than one year are 75 basis points higher than bids following shorter industry dormant periods. In our most complete model specification (regression (3)), the differential is 58 basis points.

Results for our control variables generally confirm results in the literature. Similar to the work of Fuller, Netter, and Stegemoller (2002), we find that bidder abnormal returns are significantly higher when a private firm is the target and significantly higher in cash offers. Consistent with Moeller and Schlingemann (2005) we find that bidder returns are significantly higher when US firms acquire domestic targets compared to foreign targets. In the full sample, bidder returns increase with the relative size of the target firm.[12] However, in the subsample where bidders are seeking publicly traded targets, bidder returns decrease with the relative size of the target. The existing literature documents that bidder returns are generally negative in acquisitions of publicly traded targets; these results are consistent with greater losses being associated with larger targets. Bidder return is also lower when target is incorporated in Delaware. Bidders also earn significantly lower returns in the post wave period compared to bidders outside of waves. Other variables are either insignificant or vary in significance across the specifications.

We also examine whether initial industry bidders have different returns depending on their location relative to a wave. To test this, we add interaction terms combining the initial bid dummy with the wave variables. Recall that the methodology to identify merger waves is quite different from that of dormant periods. The results (regressions (3) to (6))

[11] See, for example, Fuller, Netter, and Stegemoller (2002) and Moeller, Schlingemann, and Stulz (2004).

[12] Since we are using both public & private target, the transaction value is used as a proxy for target size.

indicate that the importance of the dormant period is not affected by merger waves; the interaction variables are insignificant throughout.[13]

4.4. Differentiating initial bidders, subsequent bidders, non-bidders, and targets at the time of the initial industry bid

Our first research question focused on the anticipation of information throughout an industry and the degree of market reaction to bidding activity in that industry. To this point we have only examined bidding firms' returns at the time of their own bid. In the following sections and tables we broaden our analysis to non-bidding rival firms. By definition, these firms don't have an acquisition announcement. Consequently, we shift to our second reference point, the time surrounding the initial industry bid.

Since our second research question contrasts initial bidders with subsequent bidders and with non-bidding rivals, we begin by examining characteristics of these firms. We define "subsequent bidders" as those rivals that announce a bid sometime following the initial bid but before the next initial industry bid occurs; "non-bidding rivals" do not announce a bid in this period. We do not require the subsequent bidder to target a firm in the same industry as targeted by the initial bidder. Also, since we are interested in the anticipation of information across firms in an industry (rather than a detailed examination of firms engaging in bidding programs) we eliminate subsequent bids made by the initial bidders themselves. Some rival firms are acquisition targets either at the initial bid or subsequent bids (i.e. bids before the next IIB). If the market anticipates this activity, these firms could impart an upward bias in the abnormal returns we are trying to measure. Consequently, we remove these firms when we calculate rival abnormal returns surrounding the time of initial industry bid.

Table 6 reports the results of logistic analyses contrasting bidders and non-bidders as well as initial bidders and other types of firms. Obviously an infinite variety of variables could be examined. Some interesting variables (e.g., ownership), are unavailable to us; others (e.g., governance) severely restrict the number of observations. Our objective here is not to perform a definitive analysis of these types of firms, but to illustrate general differences among initial bidders, subsequent bidders, and non-bidding rivals and to ascertain whether differences are evident before the time of an initial industry bid. We focus on a small set of candidate variables associated with bidding firms in the literature. Variables measuring size, profitability, leverage, Tobin's Q, and research and development expenditures are measured at

[13] In results not shown, we also added dummy variables for contracting and expanding industries to our multivariate tests. The conclusions previously reported are unaltered.

the year-end prior to the corresponding initial industry bid. We also include as control variables, the number of firms in the industry and dummy variables to recognize expanding and contracting industries.

Regression (1) of Table 6 reveals that bidders are distinct from non-bidding firms. On average, bidders are larger, with lower leverage and higher Q ratios, and are more likely to be in an expanding industry. The probability of a firm becoming a bidder is also negatively related to the number of companies in the industry. This is, however, a mechanical relation since only industries with bids are included in this study.[14] All of these firm characteristics are obtained at year-end before the initial industry bid. Thus, the market has available information to discern bidders from non-bidders. Regression (2) reveals that, compared to all rivals, initial industry bidders have similar characteristics as bidders in general. In regression (3), we test whether the characteristics of initial bidders are different from those of the subsequent bidders. All variables, with the exception of the number of firms in an industry, are statistically insignificant. As we mentioned above, the negative coefficient of the number of firms in an industry is a mechanical relation. Thus, initial bidders are similar to subsequent bidders, and as a result, the market may not be able to distinguish between the two groups before the first bid. In Regressions (4) and (5), we compare subsequent bidders to non-bidding rivals. Regression (4) reveals that subsequent bidders are larger, have lower leverage ratios and higher Q ratios than non-bidding rivals. The important point here is that the sign and significance of variables associated with subsequent bidders are similar to those of the initial bidders. Thus, observable characteristics differentiate subsequent bidders from non-bidding rivals. In addition, subsequent bidders are more likely to emerge if the initial industry bid is for a relatively smaller target from a different industry, and is paid with stock. These target and payment characteristics could suggest overvaluation of bidder equity. Since equity valuation if often highly correlated within an industry, it could be the case that additional bidding is likely to exploit overvaluation. In regression (5), we include the abnormal returns of the initial bidder and the rivals around the announcement of the initial industry bid as independent variables. We find that rivals with a higher abnormal run-up just before the initial industry bid announcement are more likely to make

[14] To illustrate the mechanical relation, suppose there are three industries A, B, and C. Industry A has 10 firms and industries B and C have five firms each. Let the unconditional probability of being a bidder equal 0.1. Industry A has one bidder and thus all 10 firms are included in the logistic regression. Industries B and C together have one bidder; suppose the bidder is in industry B. Then, the five firms in industry B are included in the regression analysis but the firms in industry C are not included since there is no IIB date for industry C. Thus, ten of 15 observations in the regression have the variable "N of industry firms" of 10 and one of them is a bidder. Five observations have the variable "N of industry firms" of 5 and one of them is a bidder. As a result, we have a negative relation between the "N of industry firms" and the probability of being a bidder.

subsequent bids. The overall results of Table 6 suggest that the market has information to predict which firms are likely to bid but not which of the likely bidders will bid first. The significance of subsequent bidder return in the run-up period suggests the market differentiates the likely bidders from non-bidding rivals.

4.5 Abnormal returns to rivals at the time of the initial industry bid

We next compare the abnormal returns earned by initial and subsequent bidders to those earned by non-bidding rivals around the time of an initial industry bid. Information about impending merger activity could flow to the market in two different ways. It could be anticipated prior to the first industry bid or it could be a surprise, signaled with that first bid. In the first case, the market could anticipate an impending spate of bidding activity but not separately identify the initial bidder. The market thus identifies a set of ex ante likely bidders and adjusts their price before any merger announcement. Under rational expectations, this set includes both the initial industry bidders and the subsequent bidders. When the initial industry bidder announces its bid the market further adjusts its price but leaves the stock prices of other likely bidder's unchanged. The price of a subsequent bidder's stock adjusts further when they announce their own bids. A second possibility is that the market is unaware of the impending merger activities before the initial industry bid. The initial industry bids signal the market of the merger activities and the prices of both initial industry bidders and subsequent bidders increase at that first announcement. Results of Table 6 appear to be consistent with the first explanation. The market has information to identify bidders from non-bidding rivals (as indicated in regressions 1, 2, 4 and 5) but appears unable to identify the initial industry bidder from subsequent bidders prior to the first bid (regression 3).

To further differential the two possible ways that information is reflected in the market, we examine the run-up return during days [-20, -2] and announcement return during days [-1, 1] separately. Panel A of Table 7 reveals that abnormal returns to initial industry bidders and subsequent bidders are significantly positive during the run-up period before the initial bid announcement while non-bidding rivals experience insignificant returns. In addition, the return difference between initial industry bidder and the subsequent bidders in the run-up period is statistically insignificant. This result suggests the market does not distinguish the initial bidder from other bidders before the actual first announcement. In contrast, both the initial industry bidder and subsequent bidders earn significantly higher abnormal return than the non-bidding rivals. These results suggest that the market can predict which firms will bid, but does not know the timing of their bids. Thus, the market anticipates bidding activities and adjusts the price of all likely bidders. Panel B of Table 7 shows that when the identity of the initial industry bid is announced only that firm experiences significant positive abnormal

returns. Subsequent bidders and the non-bidding rivals have an insignificant market reaction to the initial bid announcement. Their returns are also significantly lower than that of the initial industry bidder.

Results from Table 6 indicate that around the time of an initial industry bid, significant differences are observed between non-bidders and subsequent bidders. The results in Panels A and B of Table 7 are consistent with the notion that the market identifies both the initial industry bidders and subsequent bidders before the initial industry bid and adjusts their prices upward.

In Panels C and D of Table 7, we separate the sample by whether the initial industry bidder earns positive or negative abnormal returns at the merger announcement. We find that, on average, the abnormal returns of both the subsequent bidders and non-bidding rivals move in the same direction as that of the initial industry bidder. This result suggests that the sign of the initial bidder return conveys new information about the industry to the market. Both subsequent bidders and non-bidding rivals earn significantly positive abnormal returns when the initial bidder earns positive returns; non-bidders earn significantly negative abnormal returns when the initial bidder earns negative abnormal returns. However, the difference in abnormal returns between subsequent bidders and non-bidding rivals is insignificant in all three panels that examine returns over the announcement period of the initial industry bid (i.e., panels B - D). Thus, the market differentiates the subsequent bidders in the run-up period but not in the announcement period.

4.6. Multivariate analysis of rival returns <u>at the time of the initial industry bid</u>

Both the sign and the magnitude of the returns to the initial bidder contain information of potential importance to rivals. This information could be pertinent to the entire industry or only to the subset of firms that, like the initial bidder, subsequently make acquisition bids themselves. To examine these issues, we estimate multivariate regressions of rival returns at the time the initial bid is announced using the following specification:

$$CAR_{r,iib} = \alpha + \beta_1 * IIBCAR + \beta_2 * SBDUM + \beta_3 * IIBCAR * SBDUM + \varepsilon$$

The dependent variable is the abnormal return for rivals during the run-up period or at the time their initial industry bid is announced. We regress this against the contemporaneous return earned by the initial bidder (initial industry bidder CAR or IIBCAR). To test whether the information transfer is unique to bidding we specify a dummy variable for subsequent bidders (SB). We also test the interaction of the two terms. This specification allows the slope and intercept of our regressions to vary for subsequent bidders and non-bidding rivals. The interaction variable, IIBCAR*SB captures the differential slope coefficient for subsequent bidders with respect to changes in magnitude of the initial bidders' abnormal

returns. Thus, the sum of coefficients for IIBCAR and IIBCAR*SB reveals the change in the abnormal return to subsequent bidders with respect to different levels of initial bidder return.

Results are shown in Table 8. In the first three regressions the dependent variable is the rival abnormal return over the run-up period of days [-20, -2]; in the next three regressions the dependent variable is the abnormal return over the announcement period of days [-1,1]. Regression (1) reveals that during the run-up period, the rival abnormal return is significantly negatively related to the initial bidder returns. This result suggests that the merger gain to the initial bidder may come at the cost of their rivals. Rivals that will be subsequent bidders, however, do not lose. Note that the sum of the coefficient of IIBCAR (-0.054) and the coefficient of the interaction term between IIBCAR and SB dummy (0.126) is positive (0.072), and this figure is statistically significant at the 5% level with a t-statistic of 2.02. In addition, subsequent bidders earn a higher abnormal return of 1.43% than the non-bidding rivals, and this figure is statistically significant at the 1% level. In regressions (2) and (3), we separate the sample by whether the initial industry bidder earns positive or negative returns during the run-up period. Regression (2) reveals similar results as regression (1) while regression (3) shows largely insignificant results. The first three regressions reveal that prior to the initial bid announcement, the subsequent bidder and the initial industry bidder move together; this result is concentrated in the cases where the initial bid is expected to produce a positive outcome. This co-movement between initial and subsequent bidders does not exist if the initial bid is expected to lose value. In contrast, non-bidding rivals experience returns that are significantly negatively related to those of the initial bidder. These results from the run-up period, again, suggest that the market is able to distinguish between subsequent bidders from non-bidding rivals even before the initial bid announcement.

In the announcement period [-1,1], we find that the dummy variable for subsequent bidders is insignificant. Thus, without consideration of the magnitude of the initial bidder's return, the *level* of abnormal returns earned by subsequent bidders does not differ significantly from that earned by non-bidding rivals. This result suggests that on average the initial industry bid announcement does not convey new information about the subsequent bidders to the market. However, in comparison to non-bidding rivals the abnormal returns to subsequent bidders are significantly related to the *magnitude* of the initial bidder's return in both the full sample as well as when the initial bidder earns positive returns, as revealed in the interaction term (IIBCAR*SB). Thus, the return to subsequent bidders adjusts in proportion to the degree of information associated with the initial industry bid when the initial bid is positive. In contrast, the coefficient to non-bidding rivals (implicit in the coefficient on the initial bidder's abnormal return) is significant in the full sample and when the initial bidder earns negative returns. These results reveal that subsequent bidders experience a larger price reaction at the time of

a positive initial industry bid announcement than non-bidding rivals. However, when the market reaction to an initial industry bid is negative, only the non-bidding rivals react negatively while the subsequent bidder has a muted reaction. Notice that in regression (6) the sum of the coefficient of IIBCAR (0.05) and the coefficient of the interaction of IIBCAR and SB dummy (-0.05) is zero, which implies that the subsequent bidder return is unrelated to initial bidder return during the announcement period when initial bidder has negative returns.

4.7. Does market anticipation of subsequent bids affect their own announcement returns?

Results in Tables 6, 7, and 8 suggest that market can distinguish between subsequent bidders and non-bidding rivals at the time of the initial industry bid. Nevertheless, some subsequent bids may be less expected than others because of certain firm characteristics. In this section, we examine whether the less expected subsequent bids are met with stronger market reaction when their own bids are announced. Using the predicted value of regression (5) of Table 6, we estimate an ex ante probability of a subsequent bidder announcing a bid. We are able to obtain this probability measure for 1,141 bidders. We next sort the 1,141 firms into four portfolios by their probability of bidding and examine the abnormal returns when the firms actually announce their own bids. If a subsequent bidder makes multiple bids, we examine the first bid only since the market updates the probability of the later bids continuously and certainly at the time of the first bid. The average probability of being a subsequent bidder is 4.7% in the lowest quartile and 18.7% in the highest quartile. [15]

Panel A of Table 9 shows that the firms with the lowest probability of being a subsequent bidder experience the most positive abnormal return when announcing their own bids. These firms have an average abnormal return of 2.73% over the three-day window centered on their own bid announcement day, with a t-statistic of 4.25. In contrast, other (more expected) subsequent bidders experience insignificant abnormal returns at the time of their own bids. The difference in abnormal returns between the highest and lowest quartiles is also statistically significant. The results are consistent with market anticipation of subsequent bidding activity impacting the returns realized at the time of that subsequent bid. We will return to this finding later to examine the implications for interpreting bid announcement returns.

[15] We caution the readers in interpreting the magnitude of these estimated probabilities of subsequent bids. The estimation is based on a subset set of public information available at the initial industry bid and does not incorporate other information available to the market but not to us as researchers. In addition, we do not incorporate information that becomes available after the initial industry bid. The additional information available to the market, however, adds noise to our probability measure and work against us in finding significant results.

In Panel B of Table 9, we examine this relationship in a multivariate regression analysis. After controlling for an array of firm and deal characteristics, we still find that the probability of being a subsequent bidder has negative coefficients in all five specifications and these coefficients are statistically significant at the 5% level or higher. These coefficients are also economically significant. On average, a 10% reduction in the estimated probability of announcing a bid increases the abnormal announcement return by 1%. These results provide further support to the anticipation hypothesis. We also include several measures of the time between the initial industry bid and the subsequent bid as independent variables in regressions (2) to (5). We discuss the inference of these variables in next section.

4.8. Anticipation, first movers, and low hanging fruit hypotheses

The significant abnormal run-up and announcement returns to initial industry bidders may also be consistent with the first mover hypothesis.[16] Under this hypothesis, initial industry bidders earn abnormal returns because their actions create a strategic advantage over rival firms. Frequently cited first mover advantages include increased market share, heightened brand recognition, enhanced distribution networks, increased brand loyalty, the ability to set product standards, and increased experience. Any one of these advantages could be achieved through acquisitions thus giving an initial bidder a competitive edge over rival firms. Nevertheless, first mover disadvantages also exist. Followers (subsequent bidders) have the advantage of observing the actions of the initial bidder and mimicking attributes that are successful and avoiding those that are unsuccessful. This relates to our question of whether rivals learn from previous industry mergers.[17]

[16] The first mover hypothesis gets extensive coverage in the strategy literature. For a recent examination see Carow, Heron and Saxton (2004) and McNamara, Haleblian and Dykes (2008). In the finance literature see Akdogu (2006).

[17] Cottrell and Sick (2001) and Schnaars (1994) examine first mover advantages and disadvantages noting numerous cases where the imitator ultimately gains the advantage over the first mover. Examples from the software industry include the success of VHS tape format over Betamax, IBM following Apple, and Excel following VisiCalc. Cottrell and Sick (2001) also note the phenomena in the motorcycle industry with Yamaha, Kawasaki, and Suzuki successfully following Harley Davidson, the Indian and many European models.

The first mover explanation in acquisitions is related to what might be termed the 'low hanging fruit' or 'bidding opportunities' explanation for the higher returns earned by initial industry bidders. For example, Rhodes-Kropf and Robinson (2008) suggest that market prices adjust with each industry acquisition until opportunities are exhausted. While it is beyond the scope of this work to provide an exhaustive test of the first mover or low-hanging fruit hypotheses, we are able to provide some evidence that is relevant.

If first movers (initial industry bidders) create a strategic advantage over rivals, we would expect the returns of rival firms to decrease when an initial industry bid is announced. In contrast, our results in Panel C of Table 7, indicate that when the initial industry bidder earns positive returns at the bid announcement, rival firms also tend to earn positive returns. The negative coefficients of IIBCAR in regressions (1) to (2) of Table 8, however, are consistent with a more general version of the first mover hypothesis. These returns are over the run-up period before initial bid announcement, i.e. before the market learns the identity of the initial bidder. During the same period of time, the subsequent bidder abnormal returns are positively correlated with that of the initial bidders. These results are consistent with bidding being anticipated as a wealth creating activity, perhaps because of a "first-mover" advantage over non-bidding rivals.

To provide some additional insight into the 'low-hanging fruit' hypothesis, we examine the timing and abnormal returns to rivals announcing the second (i.e., next), third and fourth or higher industry bids following an initial industry bid. Untabulated univariate tests provide some support for the first mover or 'low-hanging fruit' hypotheses. Abnormal returns to the first subsequent bidders in an industry as well as all rivals who bid in the first two quarters after the initial industry bid earn significantly positive abnormal returns at the announcement of their own bids; the rest of the bidders earn, on average, insignificant announcement returns.

Nevertheless, the subsequent bidders that bid soon after an initial industry bid may have other characteristics related to announcement returns. Thus, it is necessary to control for these characteristics in a multivariate analysis. To do this, we estimate multivariate regressions of subsequent bidder announcement returns in Table 9, Panel B. We measure the timing of a subsequent bid with four variables: 1) the number of days between the initial bid and the subsequent bid; 2) the order of the subsequent bid in the industry, i.e. whether a bid is the first, second, third, or fourth bid after the initial industry bid; 3) a dummy variable for subsequent bids that are announced within two quarters of the initial industry bid; and 4) a dummy variable for the first subsequent bid. The control variables include firm and deal characteristics similar to those in the regressions of Table 5. In addition, to capture the market anticipation of these

deals, we include the estimated probability of being a subsequent bidder using the predicted value from Regression (5) of Table 6 as an explanatory variable.

Regressions (2) to (5) in Panel B of Table 9 reveal that none of the four variables that measure the timing of subsequent bids are statistically different from zero at any conventional confidence level. In contrast, the estimated probability of subsequent bids has significantly negative coefficients in all regression in Panel B of Table 9. This later result clearly supports the anticipation hypothesis. The coefficients for the timing variables are insignificant even when the probability variables are removed. The lack of significance for the timing of subsequent bids does not appear consistent with the 'low-hanging fruit' hypothesis for subsequent bidders.

Regardless of the first-mover or low-hanging fruit explanations, we can assert the independent importance of anticipation and the transfer of information throughout the industry. Several arguments support this claim. First, abnormal returns increase with the length of the time between industry bids. This result is consistent with anticipation but not the pure form of the first mover hypothesis. Although the first mover hypothesis could be adjusted to assert greater advantages following longer dormant periods, the theory would need to be developed and incorporate reasons why competitive pressures did not also shorten the time between industry bids. That is, if gains increase with the dormant period, bidders would be encouraged to bid more quickly. We also find adjustment (anticipation) of the prices for subsequent bidders at the time of the initial industry announcement. This only occurs for subsequent bidders. Finally, we document a relation between the probability of a subsequent bid and the actual returns at the announcement of their own acquisition bids. All of this evidence points to anticipation.

4.9. Rethinking past results

At this point we note that our primary findings are consistent with anticipation and the transfer of information across rival firms around the time of an initial bid. First, abnormal announcement returns to bidding firms increase significantly with a direct measure of surprise, the length of the time between bids. Second, abnormal returns to subsequent bidders in the same industry are different from those to non-bidding rivals just before the announcement of an initial industry bid and they are correlated with the abnormal returns of the initial industry bidder. These reactions by rival firms are confined to those firms that subsequently bid and are not found in non-bidding rivals. We have noted sensitivity tests throughout the text regarding the specification of the time between bids and the specification of variables. In the paragraphs below we discuss how our findings may alter the interpretation of past results in the

mergers and acquisition literature. In particular, does anticipation alter the way we think about returns to bidding firms?

Most previous studies focus on acquisitions of public targets and examine the abnormal announcement returns to target and bidding shareholders. Their general findings are that, on average, bidder shareholders breakeven or lose from acquisitions while target shareholders gain from the acquisition premium. Several studies of acquisitions of private target, however, find positive announcement returns for the bidders (Fuller et al. (2002)). Given the drastically different findings in the literature about bidder returns by different target type, we separate our sample into bids for public and private targets in this analysis. Table 10 reports the results of our full sample, our sample of public or private targets, as well as a sample of stock swaps.

Panel A presents the results for all bids where the bidder returns at both its own bid and the time of the initial industry bids are available. At the announcement of their own bid [-1,1] firms earn an average abnormal return of 0.94%. This figure, however, excludes the bidders' stock price run-up at initial industry bid which reflects market anticipation of these bids. As a result, the abnormal return at the actual announcement captures only a fraction of the market assessment of the merger's wealth effect. To capture the full extent of the wealth creation of a merger, we cumulate bidder abnormal returns at their own bid announcement with their abnormal returns over the run-up period of the initial industry bid.[18],[19] Including the price run-up at initial industry bid increases the average combined abnormal return to 3.21%. The difference between the two figures is 2.27% and is statistically significant at the 1% level. Although including the run-up return for the full sample does not alter the direction of the inference, the magnitude of the merger wealth effect has been substantially increased.

Panel B reports the results of 1,480 bids for public targets and shows that including the run-up return at initial industry bids changes the interpretation of bidder abnormal returns. Similar to the literature, we find that in our sample,

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[18] Since the average subsequent bidder return is insignificant at the announcement window [-1,1] of the initial bid, we do not include the abnormal returns during this window in the following analysis. Further, for the initial industry bids, including the abnormal return during this period would result in double counting the return. In a sensitivity test, we include the abnormal return during the IIB announcement window of [-1,1] for the subsequent bids. The results of Table 10 are similar.

[19] It is likely that the market anticipation of a subsequent bid continues after the initial industry bid until the eventual announcement of the subsequent bid. This is often an extended time period, however. The bidder abnormal returns during this period will include the wealth effect of many other events that could distort our analysis. Therefore, we do not include the abnormal return between the initial industry bid and the subsequent bid in our analysis. As a result, our evidence is likely to understate the full wealth effect of bid anticipation.

the bidders of public targets on average suffer negative abnormal returns of -0.75% at the announcement of their own bid. This figure is statistically significant at the 1% level. Such analysis, however, excludes effects anticipated during the run-up at the initial industry bids. After including the run-up returns, the average abnormal return becomes 0.64%, and this figure is statistically significant at the 10% level. The difference is also statistically significant at the 1% level. The median returns and the percent of firms with positive returns show a similar pattern. Thus, including the anticipation return changes not only the magnitude but also the direction of our inferences of the wealth effect of bidding for public targets. Without including anticipated returns, it appears that bidders of public targets suffer significant losses. When we include the anticipated returns, however, we see that these bidders actually earn significant positive returns.[20]

In Panel C, we report the results for the 2,574 bids of private targets. The three-day announcement abnormal return at their own bids average 1.91%, and is statistically significant at the 1% level. Adding the stock price run-up of these bidders at their initial industry bids increases the combined return to 4.69%, also statistically significant at the 1% level. Although including the run-up return does not alter the direction of the inference, the magnitude of the merger wealth effect has been substantially increased.

In Panel D, we report the results for 647 stock swaps. We define stock swaps as bids for public targets that are paid with at least 50% bidder stock. Several recent studies document that bids for public targets and bids financed with bidder stocks are often associated with large announcement losses to bidding firms [e.g., Moeller, S., Schlingemann, F., Stulz, R., (2005)]. We document an abnormal three-day announcement return of -2.20% for these bidders at their own bid announcement. This figure is statistically significant at the 1% level, with a t-statistic of -6.93. The median abnormal return is -1.94% and over 64% of the 647 bidders have negative abnormal returns. However, if we include the bidder price run-up at their initial industry bid to account for the market anticipation of these bids, the combined abnormal return becomes an insignificant -0.28%, with a t-statistic of -0.47. Nearly 48% of the firms have a positive combined abnormal return. Thus, adding the anticipation effect alters the direction of

[20] The stock market may not anticipate bids many years away from the initial industry bid. In sensitivity tests we examine the subsequent bids made within one and five years of the initial industry bids. We, again find that including the anticipation returns at initial industry bid changes the interpretation of these subsequent bids from negative wealth effect to break even.

the inference about the wealth effect of the stock swap bids.[21] The overall results of Table 10 highlight the importance of taking market anticipation into consideration when assessing the wealth effect of bidding firms.

Before concluding, we note an alternate explanation for some of the results of Table 10. It is possible that in expanding the period of analysis by combining announcement and pre-announcement returns, we are only adding noise to our calculations. If that is the case, it would not be surprising that a significant result becomes insignificant. For several reasons, we do not believe that the returns measured in the run-up period of the initial bidder denote noise. In contrast to the noise argument, returns at the run-up period are significantly and substantially related to the existence and probability of subsequent bidding activity. First, we have documented statistically significant price effects in the run-up period. Second, these effects only accrue to bidding firms. Third, the direction and magnitude of these effects is consistent with those of the initial industry bidder. Fourth, the noise argument doesn't explain the reversal of sign of the significant results for bids for public targets and for stock swaps. Finally, subsequent abnormal returns at the time of a firm's own subsequent bid are significantly and negatively related to the ex ante probability of such a bid. The run-up return for a firm at the initial industry bid is a significant and positive determinant of this ex ante probability.

5. **Conclusions**

A bid announcement can signal information about bidding and target firms and their respective industries. Apart from early work on program bids, the literature has not examined the effect of anticipation on a bidder's return or on the returns of rivals. Little attention has been given to the transfer of information among rivals at the time of an initial industry bid. Nevertheless, the existence of anticipation is important to recognize, particularly given the small magnitude of abnormal returns associated with bidding firms. Any measurable effect due to anticipation is likely to be a sizeable portion of announcement period abnormal returns.

This paper examines the implications of anticipation and the transfer of information across rival firms surrounding initial industry bid announcements. The implications of anticipation are that bidder abnormal returns will be positively

[21] Since we have demonstrated earlier in the paper a significant relation between anticipation (as measured by the dormant period) and abnormal returns, we note, in untabulated results, that, on average, stock swap offers have shorter dormant periods and are more likely to occur during an industry merger wave.

related to the degree of surprise of a bid announcement. In addition, prices of rival firms will adjust at the time of an initial industry bid. If the market correctly anticipates which rivals will become subsequent bidders and if bidding is expected to affect value, abnormal returns of subsequent bidding firms will differ from those of non-bidding rivals. Moreover, the abnormal returns of these subsequent bidders will adjust in proportion to the magnitude of the abnormal returns earned by the initial industry bidder.

Using a sample of 6,930 bids and 15,616 rival firms from 1985 through 2009, we find strong support for anticipation and the transfer of information through industry channels. Bidders in industries where the previous bid was announced over a year ago earn significantly higher abnormal announcement returns than bidders in industries where the previous bid was announced less than a year ago. Bidder announcement returns increase significantly with the length of the time between industry bids. Our results hold for multiple definitions of the time between industry bids and after controlling for variables known to influence bidder returns. In addition, rivals who will announce bids in the future earn significantly different returns from non-bidding rivals in the run-up period before an initial industry bid. These returns vary in sign and magnitude with returns earned by the initial industry bidder. The market appears to have sufficient information to distinguish between future bidders and non-bidding rivals, but does not appear to be able to predict the first bidder. We also find that returns earned by rivals around the time of an initial bid are significantly related to the probability of subsequent bidding. This ex ante probability, in turn, affects the abnormal return of the subsequent bidders when their own bids are announced. All results provide strong support for anticipation and the transfer of bid related information across rival firms.

Two important implications follow from our results. First, bidding is, on average, a wealth creating activity. This is in contrast to the negative or zero abnormal returns documented in the literature. Unanticipated bids are associated with significantly more positive abnormal announcement returns. Also, when anticipated effects are included, the combined returns to several types of bidding previously associated with negative announcement returns, are positive or insignificant. Second, without adequate consideration of anticipation, researchers should be cautious in interpreting returns as accurate indications of wealth effects. The magnitude of anticipation effects is large enough to alter some well-known results. For example, bidders in less anticipated stock acquisitions earn significantly positive abnormal announcement returns. Similarly, bidders in less anticipated acquisitions of public targets earn insignificant returns. When the effects of anticipation are incorporated, generally accepted inferences about particular types of deals are reversed. On average, bids for public targets significantly increase bidder shareholder wealth; bids involving stock swaps do not reduce bidder

shareholder wealth. These results are in contrast to those in the literature without consideration of anticipation. This does not negate the importance of organizational form or method of payment but does indicate the relative magnitude of the anticipation effect. Simple ways for researchers to control for anticipation are to add a dummy variable for cases where a similar event occurred in the industry in the past year. Also, anticipation effects must be included with announcement returns before drawing inferences.

This is a first look at the returns to initial bidders and the transfer of information across rivals. The complexity of information surrounding acquisitions and the detailed strategic possibilities created by an acquisition provide fertile work for additional analyses in this area. Finally, the process of anticipation deserves attention in other contexts (e.g., layoffs, earnings announcements, repurchases, etc.).

References

Akdogu, E., 2009 Gaining a Competitive Edge Through Acquisitions: Evidence from the Telecommunications Industry. Journal of Corporate Finance 15(1), 99–112.

Andrade, G., Stafford, E., 2004. Investigating the Economic Role of Mergers. Journal of Corporate Finance, 10 (1),1-36.

Andrade, G., Mitchell, M., Stafford, E., 2001. New Evidence and Perspectives on Mergers. Journal of Economic Perspectives 15 (2), 103-120.

Asquith, P., Bruner, R.., and Mullins, D. 1983. The Gains to Bidding Firms From Merger. Journal of Financial Economics 11, 121-139.

Atiase, R., 1985.Predisclosure Information, Firm Capitalization, and Security Price Behavior Around Earnings Announcements. Journal of Accounting Research 23, no 1, 21-36.

Bebchuk, L., Cohen, A. and Ferrell, A., 2004 "What Matters in Corporate Governance?" Harvard Law School John M. Olin Center Discussion Paper No. 491

Becher, D. A. 2009 Bidder Returns and Merger Anticipation: Evidence from Banking Deregulation, Journal of Corporate Finance Volume 15, Issue 1, February 2009, Pages 85-98

Bhagat, S., Dong, M., Hirshleifer, D.A., and Noah, R.B., 2005. Do tender offers create value? New methods and evidence. Journal of Financial Economics 76, 3-60.

Billett, M. T., and Qian Y., 2008, Are overconfident managers born or made? Evidence of self-attribution bias from frequent acquirers, Management Science.

Boone, A., Mulherin, J., 2007. How Are Firms Sold? Journal of Finance 62, 847-875.

Bradley, M., Desai, A., Kim, E., 1988.Synergistic gains from corporate acquisitions and their division between stockholders of target and acquiring firms? Journal of Financial Economics 21, 3-40.

Bradley, M., Sundaram, K., 2004. Do Acquisitions Drive Performance or Does Performance Drive Acquisitions? Working Paper, available at SSRN://ssrn.com/abstract=592761.

Brown, S.J., Warner, J.B 1985. Using Daily Stock Returns: The Case of Event Studies. Journal of Financial Economics 14, 3 – 31.

Carow, K., Heron, R.A. and Saxton, T.,2004. Do Early Birds Get the Returns? An Empirical Investigation of Early-Mover Advantages in Acquisitions, Strategic Management Journal, 25, 563-585.

Chang, S., 1998. Takeovers of Privately Held Targets, Methods of Payment and Bidder Returns, Journal of Finance 53, 773–784.

Chari, V., and Jagannathan, R., 1988. Banking Panics, Information, and Rational Expectations Equilibrium. .Journal of Finance 43, no 3, 749-761.

Conn, R., Cosh, A., Guest, P. M., Hughes, A., 2004. Why Must All Good Things Come to an End? The Performance of Multiple Acquirers. EFMA , working paper, Miami University.

Cottrell, T., Sick, G., 2001. First-Mover (Dis)advantage and Real Options. Journal of Applied Corporate Finance 14, (2), 41-51

Daines, R., 2001. Does Delaware law improve firm value? Journal of Financial Economics 62, 525-558.

Eckbo, E., Wier, P., 1985. Antimerger Policy Under The Hart-Scott-Rodino Act: A Reexamination of the Market Power Hypothesis. Journal of Law and Economics 28, 119-149.

Eckbo, E., 1983. Horizontal Mergers, Collision, and Stockholder Wealth. Journal of Financial Economics 11, 241-273.

Eckbo, E., 1985. Mergers and the Market Concentration Doctrine: Evidence From The Capital Market. Journal of Business 58, 325-349.

Eckbo, E., 1992.Mergers and The Value Of Antitrust Deterrence. Journal of Finance 47, 1005-1029.

Eckbo, E., Betton, S., 2000. Toeholds, Bid-jumps, and Expected Payoffs in Takeovers, Review of Financial Studies 13, 841-882.

Eckbo, B., Thorburn, K., 2000. Gains To Bidder Firms Revisited: Domestic And Foreign Acquisitions In Canada..Journal of Financial and Quantitative Analysis 35 (1), 1-25.

Faccio, M., McConnell, J., Stolin, D., 2007. When Do Bidders Gain? The Difference in Returns to Acquirers of Listed and Unlisted Targets. Working paper.

Fama, E., French, K., 1997 Industry Cost of Equity, Journal of Financial Economics 43, 153-193.

Fee, C. E., Thomas, S. E., 2004, Sources of Gains in Horizontal Mergers: Evidence from Customer, Supplier, and Rival Firms, Journal of Financial Economics, 73 (3) 423-60.

Fuller, K., Netter, J., Stegemoller, M., 2002. What Do Returns to Acquiring Firms Tell Us? Evidence from Firms That Make Many Acquisitions.Journal of Finance 57, 1763-93.

Gort, M., 1969.An Economic Disturbance Theory of Mergers.Quarterly Journal of Economics 83, 624-42.

Harford, J., 2005. What Drives Merger Waves. Journal of Financial Economics 77, 529-560.

Hietala, P., Kaplan, S.N., and Robinson, D.T., 2003. What Is The Price Of Hubris? Using Takeover Battles To Infer Overpayment And Synergies. Financial Management 32, 5-31.

Hou, K., 2007. Industry Information Diffusion and the Lead-Lag Effect in Stock Returns. Review of Financial Studies, 20, 1113-1138.

Hubbard, R., Palia, D., 1995. Benefits of Control, Managerial Ownership, and the Stock Returns of Acquiring Firms.The RAND Journal of Economics 26, 782-792.

Huang, Y., Walkling, R., 1987. Target Abnormal Returns Associated with Acquisition Announcements: Payment, Acquisition Form, and Managerial Resistance. The Journal of Financial Economics 19, 329-349.

Jarrell, G., Brickley, J., Netter, J., 1988. The Market for Corporate Control: The Evidence since 1980. Journal of Economic Perspectives 2. 49–68.

Jarrell G., Poulsen A., 1989. The Returns To Acquiring Firms In Tender Offers - Evidence From 3 Decades. Financial Management 18 (3), 12-19.

Jensen, M., 2004.The Agency Costs of Overvalued Equity and the Current State of Corporate Finance**.**European Financial Management 10, 549-565.

Jensen, M., Ruback, R., 1983.The Market for Corporate Control.Journal of Financial Economics 11, 5-50.

Kahle, K., Walkling, R., 1996. The Impact of Industry Classifications on Financial Research.Journal of Financial and Quantitative Analysis 31, 309-335.

Lang, L., Stulz, R., Walkling, R. 1991. A Test of The Free Cash Flow Hypothesis: The Case of Bidder Returns. The Journal of Financial Economics (October), 315-337.

Loderer, C., Martin, K., 1990. Corporate Acquisitions By Listed Firms: The Experience Of A Comprehensive Sample. Financial Management 19, 17–33.

McNamara, G. Haleblian, J. and Dykes, B. J., 2008. "The Performance Implications of Participating in an Acquisition Wave," Academy of Management Journal, Vol. 51, No. 1,

Malatesta, P., Thompson, R., 1985. Partially Anticipated Events: A Model of Stock Price Reaction With An Application To Corporate Acquisitions. Journal of Financial Economics 14, 237-250.

Masulis, R. W., Wang, C. and Xie, F.,2007 "Corporate Governance and Acquirer Returns" , Journal of Finance 62, 1851-1889.

Mitchell, M. & Lehn, K., 1990. Do Bad Bidders Become Good Targets?, Journal of Political Economy, University of Chicago Press, vol. 98(2), pages 372-98.

Mitchell, M., Mulherin, J., 1996.The Impact of Industry Shocks on Takeover And Restructuring Activity.The Journal of Financial Economics 41, 193-229.

Moeller, S., Schlingemann, F., 2005. Global Diversification and Bidder Gains: A Comparison Between Cross-Border And Domestic Acquisitions. Journal of Banking and Finance, 29 (3), 533-64.

Moeller, S. B., F. P. Schlingemann, Stulz, R. M. (2004). "Firm size and the gains from acquisitions." Journal of Financial Economics **73**(2): 201-228.

Moeller, S. B., F. P. Schlingemann, Stulz, R. M. (2005). "Wealth Destruction on a Massive Scale? A Study of Acquiring-Firm Returns in the Recent Merger Wave." The Journal of Finance **60**(2): 757-782.

Moeller, S., Schlingemann, F., Stulz, R., 2007. Do Acquirers with More Uncertain Growth Prospects Gain Less from Acquisitions? Review of Financial Studies 20(6), 2047-2078.

Palepu, K., 1986. Predicting Takeover Targets. Journal of Accounting and Economics 8, 3-35.

Rhodes-Kropf, M., Viswanathan, S. 2004. Market Valuation and Merger Waves. Journal of Finance, 59, 2685-2718

Rhodes-Kropf, M., Robinson, D., Viswanathan, S., 2005. Valuation Waves and Merger Activity: The Empirical Evidence. The Journal of Financial Economics 77, 561-603.

Rhodes-Kropf, M. and Robinson, D. "The Market for Mergers and the Boundaries of the Firm." 2008 Journal of Finance 63, no. 3.

Roll, R., 1986. The Hubris Hypothesis of Corporate Takeovers. Journal of Business 59, (2), 197-216.

Schipper, K., Thompson, R., 1983. Evidence on the Capitalized Value of Merger Activity for Acquiring Firms.Journal of Financial Economics 11, 85-119.

Schnaars, S., 1994. Managing Imitation Strategies: How Later Entrants Seize Markets From Pioneers. The Free Press, New York.

Schwert, W., 2000. Hostility in Takeovers: In the eye of beholder? Journal of Finance 55, 2599-2640.

Shleifer, A., Vishny, R., 2003. Stock Market Driven Acquisitions.Journal of Financial Economics, 70, 295-311.

Song, M., Walkling, R., 2000. Abnormal Returns to Rivals of Acquisition Targets: A Test of the 'Acquisition Probability Hypothesis.' The Journal of Financial Economics 55(2), 143-172.

Stillman, R., 1983. Examining Antitrust Policy Towards Horizontal Mergers. Journal of Financial Economics 11, 225-240

Travlos, N., 1987. Corporate Takeover Bids, Methods of Payment, and Bidding Firms' Stock Returns. The Journal of Finance 42, 943-963.

Wansley, J., Lane, W., Yang H., 1983. Abnormal Returns to Acquired Firms by Type of Acquisition and Method of Payment. Financial Management 12, (3)16-22.

Table 1: Distribution of acquisition bids over the sample period. The sample consists of all US bidders in the SDC database announcing both domestic and international acquisition bids above $10 million over the period 1/1/1985 through 12/31/2009. This produces an initial sample of 24,052 deals. We exclude all financial and utility firms. We delete cases where CRSP SIC codes or CRSP returns are not available to calculate abnormal returns. We also delete bidders in industries with less than five firms. This results in a sample of 6,930 bidders. "An initial industry bidder" is the first firm in a 4-digit CRSP SIC code to make a bid after a minimum 12-month dormant period without bids by other firms in the industry.

1 Year	2 Number of mergers	3 % of Total	4 # of 4-digit industries with at least one bidder	5 # initial industry bidders
1985	98	1.41	61	32
1986	109	1.57	60	42
1987	115	1.66	68	42
1988	145	2.09	76	43
1989	134	1.93	74	46
1990	86	1.24	57	33
1991	123	1.77	64	41
1992	155	2.24	80	52
1993	211	3.04	95	67
1994	284	4.10	111	54
1995	380	5.48	137	77
1996	432	6.23	138	57
1997	478	6.90	156	75
1998	562	8.11	158	71
1999	564	8.14	131	53
2000	620	8.95	131	59
2001	320	4.62	99	45
2002	226	3.26	89	42
2003	256	3.69	97	60
2004	291	4.20	105	56
2005	329	4.75	100	45
2006	312	4.50	116	61
2007	299	4.31	111	47
2008	229	3.30	92	41
2009	172	2.48	70	39
Total	6,930	100	367*	1,280

* There are 367 unique industries with at least one bidder over the sample period.

Table 2: Distribution of the time between industry bids and initial industry bidder activities. Panel A shows the distribution of the time between industry bids. To calculate these dormant periods we first sort each of the 6,930 acquisition bids chronologically within each four digit (CRSP) industry. The time between industry bids is defined as the length of time since a previous bidding announcement in the same 4-digit CRSP industry. "An initial industry bidder" is the first firm in a 4-digit CRSP SIC code to make a bid after a minimum 12-month dormant period. Panel B shows the number of industries and the associated number of initial industry bidders over the sample period.

Panel A: The distribution of the time between industry bids (days)

	N	Mean	Q1	Median	Q3
All bidders	6,930	381	14	62	246
Initial industry bidders	1,280	1,730	523	835	1753
Other bidders	5,650	76	10	38	108

Panel B: The number of industries and the associated number of initial industry bidders

# Initial industry bidders	Industries with this many initial industry bidders #	%
1	88	24.24%
2	57	15.70
3	56	15.43
4	49	13.50
5	40	11.02
6	31	8.54
7	23	6.34
8	10	2.75
9	5	1.38
10	3	0.83
12	1	0.28
Total	363*	100%

The mean and median number of initial industry bidders per industry is 3.57 and 3.00, respectively.

* This number is smaller than the 367 industries noted in column 4 of Table 1 because there are four industries that never have a 12 month dormant period without bidding activity. Thus there are 363 industries with unique initial industry bidders.

Table 3: Cumulative announcement period (-1, 1) abnormal returns for all bidding firms <u>calculated at the time of their own bids</u> categorized by the time between industry bids. The abnormal return for each firm is defined as bidder stock returns minus market returns (CRSP VWRETD index) over the three-day announcement period (-1, 1), where 0 is the announcement date of the bid. The letter D represents the dormant period which equals the length of time preceding a bid without other bids in the same industry. To calculate the time between industry bids we first sort each of the 6,930 acquisition bids chronologically within each four digit (CRSP) industry. t-statistics are shown in parentheses. Z values are based on Wilcoxon signed rank test.***, **, and * denote statistical significance at the 1-percent, 5-percent, and 10-percent levels, respectively.

	N	Mean (%) (T-statistic)	Median (%)	% Positive.
Panel A: Abnormal returns for all bidding firms				
All Bidding Firms	6,930	0.71 (6.85)***	0.20	51.6
Bidders with D<=1 yr (Subsequent bids)	5,650	0.53 (4.54)***	-0.11	50.9
Bidders with D>1 yr (Initial industry bids)	1,280	1.50 (6.86)***	0.59	55.0
Difference t-stat between D<1yr vs. D>1yr		t = 3.63***	Z= 3.87***	
5yrs >= D > 1 yr	971	1.30 (5.12)***	0.39	53.4
5 yrs <D	309	2.12 (4.97)***	1.00	60.0
Panel B: Abnormal returns for bidding firms of public targets				
All Bidding Firms of public targets	2,356	-1.44 (-9.16)***	-0.97	41.2
Bidders with D<=1 yr	1,945	-1.77 (-10.10)***	-1.12	39.8
Bidders with D>1 yr (Initial industry bids)	411	0.12 (0.34)	-0.16	47.9
Difference t-stat between D<1yr vs. D>1yr		t = 4.57***	Z= 4.24***	
5yrs >=D> 1 yr	309	-0.05 (-0.13)	-0.22	46.6
5 yrs <D	102	0.63 (0.94)	0.24	51.9

Table 4: Does a longer time between industry bids yield higher abnormal returns <u>at the time of their own bids</u>? This table displays abnormal returns for bidding firms classified by characteristics identified as important in the literature. Across each classification results are shown for all firms and for firms with various length of dormant periods. Columns five through eight reveal mean and median results for firms with dormant periods less than one year and more than one year respectively. **, **, and * denote statistical significance at the 1-percent, 5-percent, and 10-percent levels, respectively

1	2	3	4	5	6	7	8	9	10
	%	Mean	Median	Mean		Median			
				Time since previous industry bid					
		ALL	ALL	≤ 1yr	>1yr	≤ 1yr	>1yr	t-test >1yr minus ≤ 1yr	Wilcoxon signed rank test Z
Panel A All	*N*	6,930		5,650	1,280				
ALL	*100.0%*	0.71***	0.20	0.53***	1.50***	-0.11	0.59	3.63***	3.87***
Panel B Public or Private Target									
Private	*66.0%*	1.82***	0.84	1.74***	2.15***	0.79	0.97	1.22	1.46
Public	*34.0%*	-1.44***	-0.97	-1.78***	0.12	-1.12	-0.16	4.87***	4.24***
Panel C Form of Payment									
Stock	*34.1%*	0.16	-0.42	0.02	1.18**	-0.55	0.49	1.92**	2.29**
Mixed	*41.9%*	1.03***	0.50	0.80***	1.82***	0.41	0.75	2.86***	2.53**
Cash	*24.0%*	0.93***	0.47	0.87***	1.16***	0.48	0.41	0.76	0.40
Stock Swaps	*16.55%*	-3.10***	-2.85	-3.40***	-1.21**	-2.98	-1.05	2.19***	1.93***
Panel D Number of Bidders									
Multiple	*5.0%*	0.04	-0.55	0.29	-0.95	-0.46	-0.74	-1.26	-1.09
Single	*95.0%*	0.74***	0.24	0.54***	1.63***	0.13	0.62	4.00***	4.24***
Panel E Form of Acquisition									
Non-Horizontal	*61.3%*	0.76***	0.22	0.62***	1.31***	0.16	0.50	2.03**	2.24**
Horizontal	*38.7%*	0.63***	0.16	0.38**	1.85***	0.02	0.68	3.35***	3.44***
Panel F Outcome of the acquisition									
Successful	*87.0%*	0.77***	0.25	0.58***	1.63***	0.13	0.66	3.66***	3.91***
Unsuccessful	*13.0%*	0.30	-0.07	0.17	0.79	-0.05	-0.14	0.84	0.87

(Continued on next page)

(Table 4 Continued)

Panel G Attitude of Target									
Hostile	*5.2%*	-0.39	-0.30	-0.33	-0.57	0.04	-0.74	-0.36	-0.43
Friendly	*94.8%*	0.77***	0.23	0.57***	1.65***	0.11	0.69	3.86***	4.16***
Panel H Target Incorporated state (Only U.S. public firms are included)									
Not Delaware	*41.9%*	-0.25	-0.40	-0.71***	1.32***	-0.66	0.68	3.60***	3.88***
Delaware	*58.1%*	-1.05***	-0.70	-1.25***	-0.10	-0.75	-0.43	2.12**	1.71*
Panel I Target Nationality									
U.S.	*84.2%*	0.72***	0.17	0.53***	1.58***	0.05	0.60	3.53***	3.70***
Non-U.S.	*15.8%*	0.64***	0.43	0.54**	1.07**	0.40	0.54	0.92	1.20
Panel J Merger waves									
Before Wave	*8.14%*	1.46***	0.54	1.27***	2.56**	0.54	0.79	1.34	1.05
In Wave	*20.97%*	0.92***	0.18	0.84***	1.56**	0.12	0.62	0.85	1.28
After Wave	*17.16%*	-0.68***	-0.56	-0.90***	0.57	-0.66	-0.02	2.03**	1.64*
Not related to Wave	*53.74%*	0.95***	0.39	0.77***	1.57***	0.32	0.62	2.77***	2.75***
Panel K Industry growth									
Contracting	*6.43%*	0.25	0.23	0.18	0.57	0.28	-0.02	0.37	0.03
Expanding	*15.20%*	0.68**	0.32	0.42	1.62***	0.07	1.26	1.96**	2.64***
Stable	*78.37%*	0.75***	0.20	0.58***	1.55***	0.11	0.52	3.45***	3.16***
Panel L Relative size									
below median	*50%*	0.72***	0.31	0.72***	0.77***	0.33	0.13	0.17	0.32
above median	*50%*	0.69***	0.09	0.32	1.99***	-0.22	1.00	4.03***	4.66***

Table 5: Do bidder abnormal returns <u>at the time of their own bids</u> vary with the time since previous industry bid? This table shows OLS regressions relating abnormal returns of bidding firms to various measures of their dormant period. The dependent variable is the abnormal return for each individual bidder over the three-day announcement period (-1, 1) surrounding the announcement of their own acquisition bid. t-statistics are shown beneath the coefficients. Regressions include all bidding firms. **, **, and * denote statistical significance at the 1-percent, 5-percent, and 10-percent levels, respectively.

	All Bidders					Bidders of public targets
Variable and statistics	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	-0.47	-0.35	-0.33	-0.33	-0.27	-1.29
	(-0.79)	(-0.59)	(-0.55)	(-0.54)	(-0.46)	(-1.18)
Dormant Period > 1 year?	0.75	0.67	0.58			1.05
	(2.73)***	(2.47)**	(1.75)*			(2.04)**
Dormant Period > 5 years				0.99		
				(1.84)*		
1<Dormant Period <= 5 years				0.45		
				(1.25)		
Dormant Period (in 100days)					0.02	
					(1.82)*	
Relative Size	0.71	0.71	0.71	0.70	0.70	-0.77
	(4.69)***	(4.72)***	(4.70)***	(4.65)***	(4.68)***	(-3.44)***
Bidder's Q ratio	-0.01	-0.01	-0.01	-0.01	-0.01	-0.08
	(-0.33)	(-0.43)	(-0.45)	(-0.46)	(-0.45)	(-2.00)**
Target incorporated in Delaware?	-0.85	-0.78	-0.77	-0.77	-0.77	-0.47
	(-3.03)***	(-2.77)***	(-2.75)***	(-2.73)***	(-2.72)***	(-1.49)
US target?	1.37	1.36	1.36	1.35	1.35	1.15
	(4.63)***	(4.62)***	(4.62)***	(4.59)***	(4.59)***	(1.28)
Number of firms in industry	0.00	0.00	0.00	0.00	0.00	0.00
	(0.61)	(0.07)	(0.11)	(0.11)	(0.04)	(-3.05)***
Target is in Compustat (Public target proxy)	-3.19	-3.19	-3.18	-3.19	-3.19	
	(-12.33)***	(-12.35)***	(-12.35)***	(-12.35)***	(-12.39)***	
Successful offer?	0.39	0.40	0.40	0.41	0.42	-0.06
	(1.17)	(1.20)	(1.20)	(1.23)	(1.27)	(-0.13)
Attitude (1 = Friendly)	0.49	0.56	0.55	0.54	0.53	-0.51
	(0.97)	(1.10)	(1.09)	(1.07)	(1.05)	(-0.86)
Cash offer?	0.75	0.74	0.74	0.74	0.74	1.99
	(2.85)***	(2.79)***	(2.80)***	(2.81)***	(2.81)***	(5.04)***
Stock offer?	-0.39	-0.43	-0.43	-0.43	-0.43	-0.95
	(-1.56)	(-1.72)*	(-1.72)*	(-1.72)*	(-1.74)*	(-2.45)**
Horizontal offer?	0.00	0.01	0.01	0.01	0.01	0.24
	(-0.02)	(0.03)	(0.03)	(0.04)	(0.04)	(0.76)

(Continued on next page)

(Table 5 continued)

Multiple offer?	0.36	0.32	0.33	0.32	0.33	-0.03
	(0.73)	(0.65)	(0.66)	(0.66)	(0.67)	(-0.06)
Toehold position	0.00	0.00	0.00	0.00	0.00	0.07
	(-0.09)	(0.09)	(0.09)	(0.10)	(0.12)	(2.45)**
Before the Wave Dummy (PRW)		0.66	0.51	0.51	0.46	-0.10
		(1.70)*	(1.21)	(1.21)	(1.10)	(-0.16)
In the Wave Dummy (INW)		0.29	0.30	0.30	0.25	0.20
		(1.06)	(1.00)	(1.00)	(0.84)	(0.46)
After the Wave Dummy (POW)		-1.39	-1.46	-1.46	-1.52	-1.28
		(-4.93)***	(-4.72)***	(-4.73)***	(-5.03)***	(-2.84)***
PRW * IIB Dummy			0.89	0.93	1.21	1.67
			(0.85)	(0.89)	(1.20)	(1.00)
INW * IIB Dummy			-0.16	-0.17	0.08	0.50
			(-0.21)	(-0.21)	(0.11)	(0.42)
POW * IIB Dummy			0.39	0.43	0.71	-0.07
			(0.51)	(0.55)	(1.00)	(1.00)
Adj R^2	0.045	0.045	0.045	0.045	0.045	0.058
F-stat	21.21	19.64	16.74	15.99	16.75	8.48
(*p*-value)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
N	6,667	6,667	6,667	6,667	6,667	2,303

Table 6: Results of logistic Regressions revealing different characteristics of initial bidders, subsequent bidders, and non-bidding rivals. The binary dependent variables are equal to one or zero as specified in heading. The independent variables are defined as follows: Size is total assets, Profitability is operating profit before depreciation normalized with total assets, Leverage is the long-term debt normalized with total assets, Tobin's q> 1 is a dummy variable equal to 1 if Tobin's q is greater than 1, R&D is research and development expenditure normalized with total assets. Contracting industries as those where number of firms decreased more than 20% compared to previous year. Expanding industries are those where the number of firms increased more than 20% compared to the previous year. All variables are as measured in the year end prior to the corresponding initial industry bid. T-statistics are reported in parentheses. ***, **, and * denotes statistical significance at the 1-percent, 5-percent, and 10-percent levels, respectively.

	Bidders vs. Non Bidders	IIB vs. All Rivals	IIB vs. SB	SB vs. Non-bidding rivals	
	(1)	(2)	(3)	(4)	(5)
Intercept	-3.66	-3.47	1.16	-4.68	-4.71
	(-35.16)***	(-24.15)***	(5.18)***	(-31.50)***	(-31.52)***
Log Assets	0.25	0.22	-0.02	0.25	0.26
	(23.21)***	(15.15)***	(-0.68)	(17.35)***	(17.35)***
Profitability	0.00	0.03	0.02	-0.01	-0.01
	(-0.18)	(0.69)	(0.92)	(-0.81)	(-0.79)
Leverage	-0.51	-0.34	0.11	-0.63	-0.63
	(-4.72)***	(-2.41)**	(0.58)	(-4.13)***	(-4.12)***
R&D	0.17	0.00	-0.56	0.20	0.17
	(0.84)	(-0.01)	(-0.85)	(0.81)	(0.69)
Tobin's q > 1	0.78	0.66	-0.18	0.83	0.85
	(10.07)***	(6.28)***	(-1.10)	(7.57)***	(7.67)***
Number of firms in the industry	0.00	-0.04	-0.04	0.01	0.01
	(-2.19)**	(-13.88)***	(-13.30)***	(8.87)***	(8.78)***
Expanding Industries	0.14	0.19	0.12	-0.02	-0.02
	(2.13)**	(2.29)**	(0.99)	(-0.20)	(-0.18)
Contracting Industries	0.12	0.15	0.24	-0.08	-0.07
	(1.21)	(1.18)	(1.20)	(-0.52)	(-0.49)
Relative size of IIB Target to Bidder				-0.11	-0.11
				(-3.68)***	(-3.72)***
Stock Payment				0.28	0.29
				(3.86)***	(3.99)***
Initial bid is horizontal				-0.11	-0.12
				(-1.72)*	(-1.79)*
Initial bid is for a public target				0.00	0.00
				(0.03)	(0.04)
IIB abnormal return over [-1,1]					0.21
					(0.56)
IIB abnormal return over [-20,-2]					-0.25
					(-0.94)
Rival abnormal return over [-1,1] of IIB bid					0.31
					(0.66)
Rival abnormal return over [-20,-2] of IIB bid					0.56
					(3.29)***
N (dep. var. = 1)	2,343	1,202	1,202	1,141	1,141
N (dep. var. = 0)	13,733	14,874	1,141	13,730	13,730

Table 7: Abnormal returns of non-bidding and subsequent bidding rivals calculated at the time of initial industry bid. This table examines abnormal returns earned by rivals defined as those firms in the same 4-digit industry as the initial industry bidder. Some of these firms make bids after the initial industry bidder, some do not. Columns (2) to (4) contain results for initial industry bidders, subsequent bidders and non-bidding firms. Some of the subsequent bids were made by initial industry bidders themselves. The subsequent bids by these initial industry bidders are deleted in the analysis of Column (3). Positive and negative cases refer to the sign of the initial bidder's abnormal announcement return.

(1)	(2) Initial Industry Bidders	(3) Subsequent bidders	(4) Non Bidders	(2) – (3) T-test Wilcoxon Z-test	(2)- (4) T-test Wilcoxon Z-test	(3) – (4) T-test Wilcoxon Z-test
Panel A Rival run-up CAR (-20,-2)						
N	1280	1252	15413			
Mean	1.55%	1.72	-0.06			
t-value	4.32***	4.38***	-0.44	T = -0.66	T = 3.51***	T= 3.82***
Median	0.13	0.40	-1.23	Z = -0.46	Z=5.18***	Z = 5.30***
%+	50.94%	52.24%	45.34%			
Panels B-D Announcement period returns CAR (-1,1)						
Panel B Rival announcement period returns in all cases						
N	1280	1254	15417			
Mean	1.44%	0.16	0.002			
t-stat	6.81***	1.05	0.03	T = 4.92***	T=7.39 ***	T= 0.82
Median	0.59	-0.17	-0.27	Z = 4.68***	Z=6.78***	Z= 0.82
%+	55.00%	47.05%	46.90%			
Panel C Rival announcement period returns when Initial industry bid announcement return is positive						
N	704	686	8696			
Mean	6.16%	0.53	0.35			
t-stat	26.0***	2.49**	5.03***	N/A	N/A	T= -0.74
Median	4.10	-0.00	0.01	N/A	N/A	Z= 0.43
%+	100.00%	50.00%	50.21%			
Panel D Rival announcement period returns when of Initial industry bid announcement return is negative						
N	576	568	6721			
Mean	-4.32	-0.28	-0.46			
t-stat	-23.92***	-1.34	-5.74***	N/A	N/A	T= -0.77
Median	-2.88	-0.43	-0.61	N/A	N/A	Z= -0.96
%+	0.00%	43.49%	42.63%			

Table 8: Are the returns to rival firms proportional to those of the initial industry bidder <u>at the time of the initial industry bid</u>? This table shows OLS regressions relating subsequent bidders' and non- bidders' abnormal returns to initial bidder's abnormal returns. All returns are measured at the time of the initial industry bidder. The dependent variable is the subsequent bidder's and non-bidders' abnormal return over the run-up period of days [-20,-2] before the announcement of the initial industry bidder or the announcement period of the initial industry bidder [-1,1]. The independent variables are the initial industry bidders' abnormal return measured over the same period (IIBCAR) and a dummy variable to recognize the existence of a subsequent bidder (SB). T-statistics, adjusted for clustered data, are shown in parentheses. Since initial bidder's returns are used as independent variables, they are not included in the regressions. ***, **, and * denotes statistical significance at the 1-percent, 5-percent, and 10-percent levels, respectively.

	Dependent variable = Rival CAR (%) over					
	[-20, -2] of IIB announcement			[-1, +1] of IIB announcement		
Independent variables	Full Sample	IIB CAR > 0	IIB CAR < 0	Full Sample	IIB CAR > 0	IIB CAR < 0
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	0.07	0.10	0.48	-0.07	0.33	-0.21
	(0.30)	(0.26)	(1.21)	(-0.61)	(2.77)***	(-0.89)
Initial Bidders Return (IIBCAR) over [-20, -2]	-0.05	-0.07	0.02			
	(-2.72)***	(-2.51)**	(0.23)			
Initial Bidders Return (IIBCAR) over [-1, +1]				0.03	0.003	0.05
				(2.43)***	(0.28)	(2.32)**
Subsequent Bidder (SB)	1.43	1.44	0.30	0.06	-0.34	-0.05
	(3.11)***	(1.93)***	(0.39)	(0.32)	(-1.43)	(-0.15)
IIBCAR * SB	0.13	0.14	-0.08	0.03	0.06	-0.05
	(3.83)***	(3.40)***	(-0.86)	(1.80)*	(3.85)***	(-1.04)
Adjusted R^2	0.002	0.004	0.001	0.003	0.001	0.001
N	16,665	9,331	7,334	16,671	9,382	7,289
Sum of coefficients of IIBCAR and IIBCAR*SB	0.072	0.078	-0.069	0.059	0.062	0.007
	(2.02)**	(1.78)*	(-0.48)	(3.97)***	(3.38)***	(0.11)

Table 9 Subsequent bidder abnormal return <u>at the time of their own bids</u> and the probability of these bids. This table consists of the 1,141 subsequent bidders used in the Regression (5) of Table 7, which we use to estimate a probability of being a subsequent bidder. If a firm makes multiple subsequent bids, we examine only the first bid since the market updates the perceived probability of future bids after the first one. We also exclude subsequent bids made by initial industry bidders. We then sort these 1,141 firms by the estimated probability of being a subsequent bidder into four quartiles and examine the abnormal return at the announcement window [-1,1] of their own bids. The difference of mean abnormal returns is determined by a t-test and of the median returns is determined by Wilcoxon signed rank test. ***, **, and * denote statistical significance at the 1-percent, 5-percent, and 10-percent levels, respectively.

Panel A: Univariate tests

Probability of being an SB	N	Average Probability (%)	Abnormal announcement return at own bids (%) Mean	Median	t-stat	% Positive
1 (lowest)	285	4.69	2.73	1.33	4.25***	58.6
2	285	8.12	0.22	0.11	0.52	50.9
3	286	11.33	0.37	0.54	0.90	54.5
4 (highest)	285	18.74	0.14	-0.07	0.43	48.8
Difference (1 – 4)			2.59	1.40		
t or z statistics			(3.61)***	(2.99)***		

Panel B: Regression Analysis	Dependent Variable = Abnormal announcement return at own bids (%) (1)	(2)	(3)	(4)	(5)
Intercept	2.20	1.65	1.80	1.74	1.53
	(4.47)***	(1.21)	(1.31)	(1.26)	(1.08)
Probability of being an SB	-12.50	-10.87	-10.40	-10.77	-10.48
	(-3.11)***	(-2.56)**	(-2.42)**	(-2.53)**	(-2.45)**
Time between IIB and SB (in 100 days)		0.03			
		(0.94)			
Order of Subsequent bids			-0.09		
			(-0.42)		
Subsequent bid is within two quarters of IIB				-0.11	
				(-0.20)	
First Subsequent Bid after IIB					0.22
					(0.43)
Relative Size		0.00	0.00	0.00	0.00
		(-0.06)	(-0.07)	(-0.06)	(-0.07)
Bidder's Q ratio		-0.28	-0.27	-0.27	-0.28
		(-2.46)**	(-2.44)**	(-2.43)**	(-2.45)**
Target incorporated in Delaware?		0.16	0.15	0.14	0.16
		(0.26)	(0.24)	(0.23)	(0.25)
US target?		1.01	1.03	1.01	1.03
		(1.47)	(1.49)	(1.46)	(1.49)

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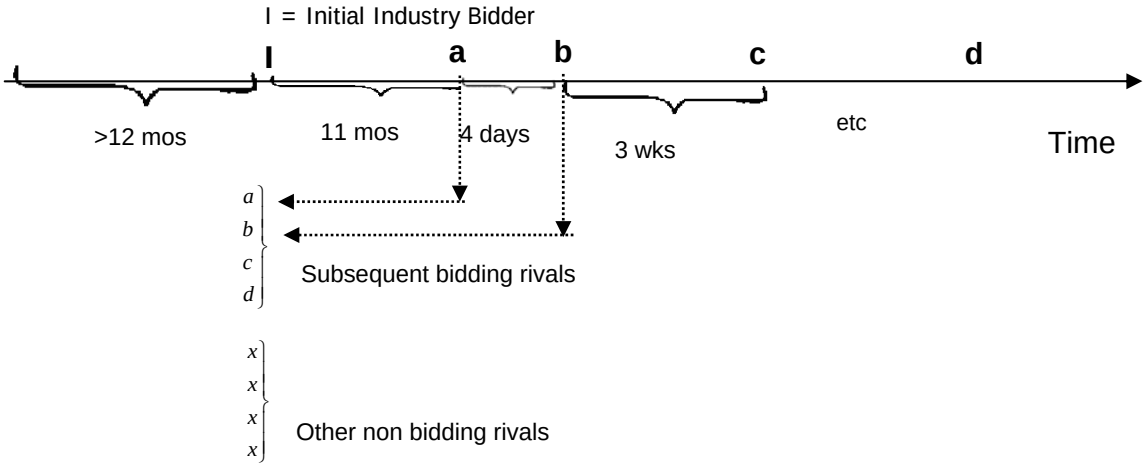
(Table 9 continued)

Number of firms in industry		0.00	0.01	0.01	0.01
		(0.42)	(1.23)	(1.09)	(1.23)
Target is in Compustat (Public target proxy)		-2.37	-2.39	-2.39	-2.39
		(-4.10)***	(-4.14)***	(-4.12)***	(-4.14)***
Successful offer?		-0.75	-0.71	-0.73	-0.71
		(-1.03)	(-0.98)	(-1.01)	(-0.98)
Attitude (1 = Friendly)		1.63	1.59	1.60	1.60
		(1.45)	(1.41)	(1.42)	(1.42)
Cash offer?		0.50	0.51	0.52	0.51
		(0.87)	(0.89)	(0.90)	(0.88)
Stock offer?		-0.67	-0.68	-0.68	-0.68
		(-1.15)	(-1.17)	(-1.17)	(-1.16)
Horizontal offer?		-0.32	-0.32	-0.31	-0.33
		(-0.66)	(-0.65)	(-0.63)	(-0.66)
Multiple offer?		-0.67	-0.68	-0.69	-0.69
		(-0.64)	(-0.65)	(-0.65)	(-0.65)
Toehold position		-0.02	-0.02	-0.02	-0.02
		(-0.45)	(-0.49)	(-0.47)	(-0.48)
Before the Wave Dummy (PRW)		0.91	0.99	0.98	0.99
		(1.10)	(1.20)	(1.19)	(1.21)
In the Wave Dummy (INW)		0.63	0.74	0.70	0.73
		(0.94)	(1.11)	(1.06)	(1.10)
After the Wave Dummy (POW)		-1.25	-1.18	-1.18	-1.18
		(-1.73)*	(-1.64)	(-1.64)	(-1.64)
Adjusted R^2	0.008	0.032	0.031	0.031	0.031
N	1,138	1,138	1,138	1,138	1,138

Table 10: Bidder abnormal return with and without anticipation return at initial industry bids. This table includes 4,054 bidders that have returns available at both the announcements of their bid and the run-up window of the initial industry bid. We estimate the combined abnormal return as the cumulated bidder stock return during these two periods minus the cumulated market return (CRSP VWRETD). For an initial industry bid, the combined abnormal return is calculated over the days [-20, +1] of it announcement. For a subsequent bid, the combined abnormal return is calculated over the days [-20, -2] of the initial industry bid and [-1, 1] of its own bid. We define a stock swap as a bid for a public target where over 50% of the payment is in the bidder stock. ***, **, * denotes statistical significance at the 1%, 5%, and 10% levels.

	N	Mean (%)	Median (%)	t-stat	% Positive
Panel A: Full Sample					
CAR over [-1,1] at own bid	4,054	0.94	0.26	6.60***	52.5%
CAR over [-1,1] at own bid + [-20,-2] at IIB bid	4,054	3.21	1.29	11.12***	54.7%
Difference		2.27	0.75	9.02***	
Panel B: Bids for public targets					
CAR over [-1,1] at own bid	1,480	-0.75	-0.64	-3.90***	43.7%
CAR over [-1,1] at own bid + [-20,-2] at IIB bid	1,480	0.64	-0.17	1.74*	49.4%
Difference		1.39	0.41	4.40***	
Panel C: Bids for private targets					
CAR over [-1,1] at own bid	2,574	1.91	0.78	9.90***	57.5%
CAR over [-1,1] at own bid + [-20,-2] at IIB bid	2,574	4.69	2.05	11.73***	57.7%
Difference		2.78	0.90	7.89***	
Panel D: Stock Swaps					
CAR over [-1,1] at own bid	647	-2.20	-1.94	-6.93***	35.9%
CAR over [-1,1] at own bid + [-20,-2] at IIB bid	647	-0.28	-0.50	-0.47	47.9%
Difference		1.92	0.73	3.87***	

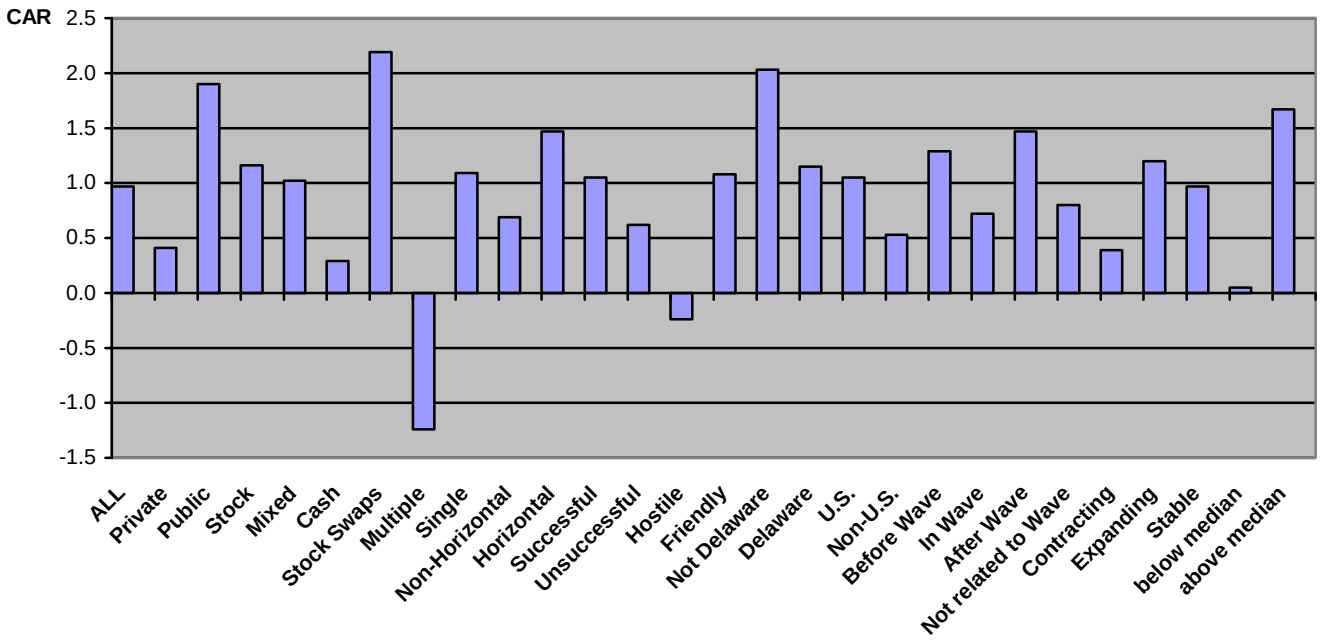
Figure 1. Illustration of acquisition activity and dormant periods in an industry



The time between industry bids (the dormant period) is noted by brackets (not drawn to scale). By definition, the initial industry bid (I) occurs after a dormant period exceeding 12 months. Subsequent bidders a, b, c, and d announce their own bids at various periods following the initial bid. In each case the dormant period for each of these firms is the time since the previous industry bid. Non-bidding rivals are those firms that do not bid before the next initial industry bid. They are noted by x in the figure. Our tests focus on the abnormal returns of all bidding firms at the time of their own bid and the abnormal returns of all firms at the time of the initial industry bid.

Figure 2 Are longer dormant periods associated with higher returns? The graphs show the difference in mean and median abnormal returns across various attributes related to bidder returns. Dormant periods and abnormal dormant periods are used. Within each category, (e.g., stock, mixed, public target, etc.) we separate the observations into two groups: those with longer and shorter dormant periods. The graph shows the difference in returns (> 1 yr. minus < 1 yr) within each category.

Panel A: Dormant > 1yr - <=1yr (Mean)



Panel B: Dormant > 1yr - <=1yr (Median)