

# What do Returns to Acquiring Firms Tell Us? Evidence from Firms that Make Many Acquisitions

Kathleen Fuller<sup>a</sup>, Jeffrey Netter<sup>a,b</sup>, Mike Stegemoller<sup>a</sup>

<sup>a</sup>Terry College of Business, University of Georgia, Athens, GA 30602

<sup>b</sup>Phone (706) 542-3654. Fax (706) 542-9434. [jnetter@terry.uga.edu](mailto:jnetter@terry.uga.edu)

December, 2001

Acknowledgements: We thank Anup Agrawal, David Mauer, E. Han Kim, Michael Goldstein, Marc Lipson, Annette Poulsen, Ragu Rao, seminar participants at the University of Georgia and Babson College, participants at the 11th Annual Financial Economics and Accounting Conference, the 7th Mitsui Life Symposium on Global Financial Markets at the University of Michigan, 2001 European Financial Management Association meetings, and the 2001 Financial Management Association meetings for comments and suggestions on earlier drafts of this paper.

## **What do Returns to Acquiring Firms Tell Us? Evidence from Returns to Firms that Make Many Acquisitions**

### **Abstract**

We study returns earned by firms making acquisitions concentrating on firms that acquired more than five public, private, and/or subsidiary targets. The study provides insights into what we learn from the stock returns to firms when they announce an acquisition. At a first level the study provides evidence on the returns to firms that make multiple acquisitions during the massive merger wave of the 1990s. We include in our analysis private targets and subsidiary targets, which make up over 80% of the acquisitions in the sample period. Second, by examining the variation in announcement returns among the same acquirers, we can better isolate the market's perception of various characteristics of the transactions, including the public/private status of the target and the method of payment. Our results suggest that the division of gains from a takeover depends on the status of the target – when the target is a public firm, target shareholders generally benefit more and when the target is a private firm or a subsidiary of a public firm, bidding firm shareholders usually gain. This suggests that buyers in a relatively illiquid market for assets (private firms and subsidiaries) do not pay as high a price for a firm as a public target firms. In addition, we show that the method of payment chosen in a takeover is partially a function of characteristics of the target.

## 1. Introduction

Takeovers are one of the most important events in corporate finance, both for a firm and the economy. Extensive research has shown that shareholders in target firms gain significantly and that wealth is created at the announcement of takeovers (i.e., combined bidder and target returns are positive). However, we know much less about the effects of takeovers on the shareholders of acquiring firms. Evidence suggests that, these shareholders earn about an average zero abnormal return at the announcement of acquisitions, though there is tremendous variation in returns. Researchers have been unable to successfully explain much of this variation, partially because the announcement of a takeover reveals information about numerous things. For example, Grinblatt and Titman (2002, p. 708) state that the stock return at the time of the bid can not be completely attributed to the expected effect of the acquisition on profitability, arguing that, “the stock returns of the bidder at the time of the announcement of the bid may tell us more about how the market is reassessing the bidder’s business than it does about the value of the acquisition.” Hietala, Kaplan and Robinson (2000) note that the announcement of a takeover reveals information about the potential synergies in the combination, the stand-alone values of the bidder(s) and target(s), and the bidder overpayment. They argue that it is often impossible to isolate these effects and thus know the meaning of the market’s reactions to a takeover announcement.

We develop a research design that hopefully allows us to control for much of the information about bidder characteristics contained in the returns at the announcement of the takeover. Then we are able to more directly examine the impact of target characteristics and characteristics of the bid on the returns to acquirers than previous research. We investigate the returns to shareholders of firms making five or more bids within three years between 1990 and 2000. This sample of firms making multiple completed acquisitions enables us to hold bidder characteristics constant in examining their pattern of announcement returns. Presumably, if the same firms are making different types of acquisitions, and we assume that the acquisition pattern

varies randomly among firms, we can attribute most of the variation in the acquirer's returns as mainly due to factors other than new information about the bidder. Our main focus is examining the returns to acquirers making bids for public, private and subsidiary targets, using cash and stock, and seeing how the acquirer's returns vary by these characteristics. This enables us to provide new and evidence on what bidder returns tell us about takeovers. Note in our analysis the terms bidder and acquirer are used interchangeably because all the bids in our sample lead to a completed acquisition.

We choose to examine the 1990 to 2000 period because the level of takeover activity in the U.S. in the 1990s was very high by historical standards. Additionally, a significant portion of takeover activity in this period was initiated by firms making multiple acquisitions. The firms in our sample make over one-third of all the large, non-financial, non-utility takeovers in the U.S. as reported by Securities Data Corp.<sup>1</sup> Therefore, our sample provides us a fruitful testing ground for probing the meaning of returns to acquirers. Further, we include acquisitions of private firms and subsidiaries, which is an important component of the takeover market (81% of all acquisitions) but is a market that few have studied.

Using a sample of 3,135 takeovers, we find that bidders have significantly negative returns when buying public targets and significantly positive returns when buying private or subsidiary targets. When the bids are partitioned on method of payment (cash, stock, or combination), we find that acquisitions of public targets results in no significant returns in cash or combination offers but significantly negative returns to the acquirers when stock is offered. However, for private and subsidiary targets, acquirer returns are significantly positive regardless of method of payment, which is contrast to the findings of Chang (1998). However, for private firms and subsidiaries the returns when the bids are financed with equity are greater than when the bids are financed with cash. Further, we do not find any evidence that the announcement

---

<sup>1</sup> Acquisitions by multiple bidders were an important source of growth to these firms: the total value of their acquisitions averaged 6.5 times greater than their market value the month before the first acquisition.

returns to the acquirer when a subsidiary is acquired vary depending on whether the seller is diversified.

Additionally, when we partition the returns to acquirers on the relative size of the takeover, we find that for public targets as the relative size of the target compared to the bidder increases, the returns become more positive for cash offers, more negative for stock offers, and little change for combination offers. However, for both subsidiaries and private targets, there is a positive relationship between the target's relative size and the acquirers' positive abnormal returns.

An explanation for the differing market reactions to the acquisitions of private (and subsidiaries) and public acquisitions is that bidders get a better price when they buy non-public firms than public firms. This could be due to a liquidity effect – private firms and subsidiaries can not be bought and sold as easily as publicly traded firms. The lack of liquidity makes these investments less attractive and thus less valuable than similar, more liquid investments. The acquirer captures this discount in purchasing the privately-held firm or the subsidiary. This also is consistent with why the returns to acquirers are more positive the greater the relative size of the targets for private targets and subsidiaries and more negative the greater the relative size of public targets. Additionally, the returns to acquisitions of subsidiaries are greater than the returns to acquiring private firms, because subsidiary targets are larger than private targets.

In sum, we suggest that transactions prices in mergers vary with the type of the target. In terms of prices, bidders get the best prices when they buy private firms (and subsidiaries) with cash, then private firms (and subsidiaries) purchased with equity, then public firms purchased with cash, and finally the worst price for public firms purchased with cash. These results are somewhat in the spirit of Shleifer and Vishny (2001) who also argue that “stock market valuation shapes merger activity.”

In addition to our evidence on the impact of liquidity on the markets for corporate assets, we also add to the evidence on the meaning of bidder returns classified by method of payment.

For public firms we find the standard result that the CARs are negative when the firm makes a bid with stock but insignificant if the bid is made with cash. Our results, however, are inconsistent with the standard interpretation -- a bid made with stock reveals something bad about the bidder, the bidder thinks their stock is overvalued, or they do not have the cash to use cash. This is because the same bidders experience a positive reaction when they buy a private firm (or a subsidiary) with stock or cash, even if the private and public bids are made almost simultaneously.

We also construct a sample of firms that acquired two targets within 90 days. Presumably, in comparisons of these two bids we hold constant, almost completely, bidder characteristics and concentrate on the relationship between the characteristics of targets and bids and acquirer returns. We first show that in clustered bids bidders often use different methods of payment. This suggests the choice of a method of payment is often a function of the characteristics of the target rather than just the bidder's attributes. We find that if the targets were in different industries, if the bidder and targets were in different industries, and if the difference in relative size of the two mergers was large, then the acquirers were more likely to choose two different methods of payments. The pattern of returns to the acquirers discussed above for the full sample stays the same in this clustered sample -- positive returns on the announcement of a takeover of a private firm or a subsidiary, negative returns on bids made for public firms with cash.

The paper is organized as follows: In Section 2, we review the related literature and discuss our approach. Section 3 describes the data, while Section 4 reports the results. We offer our interpretations and summary comments in Section 5.

## **2. Previous Research on Returns to Shareholders of Bidding Firms**

### *2.1 Empirical evidence on bidder returns: public targets*

Mulherin and Reeves (2000) study the acquisition and divestiture activity from 1990 through 1999 of 1,305 Value Line firms. They find that both acquisitions and divestitures create wealth, which they measure by the combined stock price reaction to the announcement. However,

the target return of 20.2% in the three-day window around the acquisition offsets the slightly negative but insignificant bidder return. Mulherin and Reeves find that combined bidder and target returns are significantly related to the relative value of the acquisition (target value/bidder value). They conclude that the wealth effects are directly related to the size of the event for acquisitions (and divestitures) and are consistent with a synergistic explanation for the transactions.

The Mulherin and Reeves' results are consistent with a host of studies mostly using data from earlier time periods (see the surveys by Jensen and Ruback (1983), Jarrell, Brickley, Netter (1988), Weston, Chung, and Siu's (1998), Andrade, Mitchell and Stafford (2001), and Bruner (2001)) For example, Bradley, Desai, and Kim (1988) find that excess returns to bidders on the announcement of a takeover fall from about 4% in the 60s to 1.3% in the 1970's and then to -3% in the 1980's (all statistically significant). However, they also find positive combined gains for bidders plus targets in takeovers for each period. Weston, Chung, and Siu's (1998) review of the evidence on returns to acquirors in takeovers, notes several reasons why the returns to bidders may have decreased over time. The Williams Act (adopted in 1968) made the tender offer process more costly and time-consuming for bidders. In the 1980s, takeover defenses adopted by firms, state antitakeover laws, and judicial decisions protecting targets all developed to further shift the bargaining balance from bidders to targets.

These results raise an important question. If bidder returns are not positive, then why do firms make acquisitions? There are several possible explanations. Weston, Chung, and Siu (1998) note that zero returns to bidders are consistent with a competitive corporate control market in which firms earn "normal" returns in their operations. By this standard Bruner (2001) in reviewing the evidence concludes that "60-70% of all M&A transactions are associated with financial performance that at least compensates investors for their opportunity cost." Additionally, while bidder returns are on average small, there is a tremendous variation in returns and many bidders are trying to be one of the winners.

More relevant to us, there are several difficulties in estimating bidder returns themselves.<sup>2</sup> First, targets may be small relative to the bidder, so even good acquisitions could have little impact on the bidder's stock price. Second, the stock price reaction to an acquisition can only represent the surprise component of the acquisition. If a bidder is known to be engaging in an acquisition strategy, the stock price reaction to any acquisition announcement will only represent how the market perceives that acquisition to be different from the anticipated acquisition. Third, if the target resists the takeover, the takeover process could take a long time. Thus, the uncertain outcome of the event makes it difficult to isolate the market's perception of the bid.

Hietala, Kaplan and Robinson (2000) raise more fundamental objections to interpretation of bidder returns. They note the announcement of a takeover reveals information about several things including the potential synergies in the combination, the stand-alone values of the bidder(s) and target(s), and the split in value among the firms. They suggest it is generally impossible to disentangle these effects and infer the meaning of the market's reactions to a takeover announcement. Hietala, Kaplan, and Robinson present a model that shows it is possible in several special cases to use bidder and target stock price movements to estimate the market's estimate of synergies and overpayment – including a case where a deal is not completed and a takeover contest with exactly two bidders. Empirically, they use their methodology to show the winning bidder for Paramount, Viacom, won by being willing to overpay more than its competitor, QVC, in the bidding contest even though QVC had greater synergies with Paramount.

### *2.2 Empirical evidence on bidder returns: private targets*

The extant literature focuses primarily on public acquisitions. There is little research on method-of-payment choice or wealth effects when the target is a private company, and essentially none on the acquisition of subsidiaries. Chang (1998) examines bidder returns to firms acquiring 281 privately held targets from 1981 through 1992 and compares them to bidder returns for 255 public targets from 1981 through 1988. He finds no significant abnormal returns for a two-day

---

<sup>2</sup> See Eckbo, Maksimovic, and Williams (1990) for a more thorough discussion.



window for 131 bidders who acquire private targets with cash. However, bidders who buy private targets with stock have a significant 2.64% return. Chang suggests that when making a stock acquisition, a large blockholder or blockholders may be created from the target shareholders. If the blockholders were better able to monitor the actions of the bidding firm management, the performance of the bidding firm would improve. To test this, Chang separates the bidders by whether or not a new blockholder in the bidder emerges from the target firm. He finds a 4.96% announcement abnormal return if a new blockholder is formed versus a 1.77% return if there is no new blockholder. Although both of these abnormal returns are significant, the difference is also statistically significant. Though large blockholders can be created for both private and public targets, this effect is more likely with private targets since public targets generally have less concentrated ownership.

This differential may be offset somewhat, however, by the fact that public targets tend to be larger than private targets and therefore receive a larger ownership stake in the bidder. In addition, private target managers may use the takeover as an exit strategy and be uninterested (or incapable) of acting as effective monitors. Thus, blockholder considerations are not conclusive in explaining differences in bidder returns based on the public/private distinction.<sup>3</sup>

Hansen and Lott (1996) also examine the returns to bidders acquiring private and public targets. They examine the returns to bidders acquiring 252 private and public targets from 1985-1991. In a regression explaining abnormal returns at the bid announcement, they find that the bidders experience a 2% higher return when purchasing a private firm. In 65% of the bids for public targets, the bidder return was negative, while in only 43% of the bids for the private targets was the bidder return negative.

Hansen and Lott (1996) offer another explanation for why bidders may do relatively better in an acquisition of a private target than a public target. They hypothesize that since

---

<sup>3</sup> Another possible reason for the different reactions is the attenuation bias discussed earlier. The private deals will almost certainly be completed, while the public deals may not be completed.

investors are diversified, the goal of the manager or firm is not to maximize shareholder value but to maximize the portfolio value of the shareholder. Thus, when a public bidder acquires a public target, diversified shareholders will be indifferent to how the gains from the acquisition are divided, assuming they own stock in both firms. The negative returns of the bidder are offset by the positive gains of the target. However, when a public bidder acquires a private target, the bidder's shareholders will capture part of the gains of the acquisition, assuming the bid is value increasing.

### *2.3 Method of payment in mergers and acquisitions*

One area of significant research in mergers and acquisitions that focuses on the determinants of bidder returns is the choice between cash and stock as the method of payment. Myers and Majluf (1984) argue that a bidder firm will use stock as the medium of exchange if the board believes that its own shares are overvalued. Since target shareholders know this, they are not inclined to accept a stock offer. Berkovitch and Narayanan (1990), Fishman (1989), and Eckbo, Giammarino and Heinkel (1990) expand on this idea and show that higher-valued bidders will use cash or a higher proportion of cash to signal their value to the market. However, if the bidder is uncertain about the target's value, the bidder may not want to offer cash. Since a target only accepts a cash offer greater than its true value, the bidder will have overpaid.

Hansen (1987) solves this dilemma by suggesting that bidders make stock offers. Since stock offers have a "contingency pricing effect," the target is forced to share part of the risk if the bidder overpays when evaluating a stock offer. Thus, the literature suggests that bidders make cash offers when there is high uncertainty on their firm's value, and stock offers when there is high uncertainty on the target's value. Eckbo and Thorburn (2000) develop a model showing that when the bidder's value is known and the target's value is uncertain, the "expected overpayment cost of cash" is greater than the "expected overpayment cost of stock." Therefore, bidders prefer to make stock offers. However, when both the bidder and target's value are uncertain, the bidder might decide to use cash if the target significantly undervalues the bidder's shares.

The above theoretical literature concentrates on the relationship between information asymmetry and the method of payment in acquisitions. The main empirical finding that supports the theoretical research is that bidders who use cash have greater abnormal returns at the bid announcement than do those using stock (see, for example, Fishman (1989), Travlos (1987), Brown and Ryngaert (1991) and Martin (1996)). In addition, Martin (1996) finds that stock offers are more likely to be used than cash if there is more uncertainty about the bid, as evidenced by target insiders who have large ownership stakes or higher pre-acquisition market or acquiring-firm stock returns.

#### *2.4 Other Evidence on Multiple Bidders*

Three papers are directly related to our study. Schipper and Thompson (1983) examine bidder returns for 55 firms that engage in acquisition programs from 1952-1968. They find positive abnormal returns of 13% in the 12 months up to and including the announcement of the acquisition program. However, they find little stock price reaction to subsequent acquisition announcements. In contrast, Asquith, Bruner, and Mullins (1983) find that most bidding firms make multiple bids: 45% of the sample made four or more subsequent bids throughout the 17-year sample period of their study (1963-1979). Unlike Schipper and Thompson, Asquith, Bruner and Mullins find bidder returns, in their sample of bids from 1969-1974, remain positive through the fourth bid and conclude that the benefits of a merger program are not capitalized in the announcement of the program. Finally, Malatesta and Thompson (1986) use Schipper and Thompson's data to test a model of stock price reaction to partially anticipated events. They find evidence of announcement effects associated with the announcements of acquisitions made by firms that had announced an acquisition program.

These earlier studies reveal that it is not uncommon for the same firm to make multiple acquisitions. However, both studies rely on relatively small samples compared to ours. Further, the Schipper and Thompson (1983) results indicate that it is difficult to identify the market's perception of an individual acquisition when firms make multiple bids, as part of an announced

acquisition program. Because the impact of the acquisitions is already impounded in the stock price, any finding of significant bidder-abnormal returns at an acquisition announcement is noteworthy. However, the Asquith, Bruner and Mullins (1983) study indicates that in a sample chosen for bidder characteristics, where the bidder makes multiple bids, one can identify the effects of subsequent merger announcements on bidder's returns. Malatesta and Thompson also find evidence of positive reactions to later bids.

### **3. Data**

We collect from Securities Data Corporation's (SDC) U.S. Mergers and Acquisitions Database a list of tender offers for foreign and domestic targets, with initial bids announced between January 1, 1990 and December 31, 2000.<sup>4</sup> To be included in the sample, the merger or tender offer must satisfy:

1. The target is a public firm, a private firm, or a subsidiary of a public firm.
2. The target firm has a disclosed dollar value and the bidder is acquiring more than 50% of the target firm.
3. The deal value is \$1 million or more. Deal value is defined as the total value of consideration paid by the acquirer, excluding fees and expenses. The dollar value includes the amount paid for all common stock, common stock equivalents, preferred stock, debt, options, assets, warrants, and stake purchases made within six months of the announcement date of the transaction.
4. Acquiring firms are U.S. firms publicly traded on the Amex, NASDAQ, or NYSE and have five days of return data around the takeover announcement listed on the Center for Research in Security Prices (CRSP) file.
5. Neither the acquirer nor the target is a utility or a financial institution.

---

<sup>4</sup> For a random sample of 500 acquisitions in our sample, we verified the announcement dates listed on SDC. For 92.6% of the sample, the announcement date provided by SDC was correct. Given our final sample has 3,135 announcement dates, we feel relatively confident that our dates are correct. If we do not have the correct date it biases against finding any significant returns for the acquirers in our sample.

6. The acquirer *completes* bids for five or more targets in any three-year window during the sample period.

We exclude from the main analysis clustered takeovers where the bidder acquires two or more firms within five days, since we cannot isolate the bidder's return for a particular target. Finally, to avoid bid-ask bias in the announcement-period abnormal returns, we exclude bids where the bidder stock price is below two dollars. Our final sample includes 539 unique acquirers making 3,135 bids.

Similar to Martin (1996), we group the method of payment into three categories. Cash financing includes combinations of cash, debt, and liabilities. Financing with common stock includes payments with common stock or a combination of common stock and options or warrants. Combination financing comprises combinations of common stock, cash, debt, preferred stock, convertible securities, and methods classified as "other" by SDC.

Table 1 reports the summary statistics for the firms making multiple acquisitions and their targets. Panel A, B, C, and D report the yearly mean and median bidder and target size for all bids, only public bids, only private bids, and only subsidiary bids, respectively. The mean and median size for each bidder and each target is reported in the year the bid was announced. The acquirer's market capitalization equals the price per share one month prior to the bid announcement times the number of common shares outstanding. For public targets the market capitalization equals the price per share one month prior to the bid announcement times the number of common shares outstanding, but for private and subsidiary targets, their market capitalization is assumed to be the value of the deal when announced. The final row of each panel provides the mean and median size for each unique bidder and target, counted only once. Thus, for the sample in Panel A, the mean (median) size of the bidder is \$5.24 billion (\$534 million) for 539 unique bidders. Table 1 also shows trends in M&A activity – during the 1990s there was an increase in the number and size of acquisitions for private, public, and subsidiary

targets. The increase in the number of bids became extraordinary in 1998 and 1999, while the value of the bidding and target firms exploded.<sup>5</sup>

Panels B, C, and D differentiate transactions on the basis of whether the target is public (Panel B), private (Panel C) or subsidiary of a public firm (Panel D). Note that a firm that bids for public, private, and/or subsidiary targets will be included in the bidder data in several panels. For 456 unique public targets, Panel B reports that the mean (median) size is \$1.27 billion (\$233 million). Panel C reports that the private target mean (median) size is much smaller than for public targets, \$69 million (\$18 million) for 2,060 unique private targets. Panel D presents that for 619 unique subsidiary targets the mean (median) size is \$177 million (\$38 million).

Table 2 presents takeover activity by industry using classifications from Fama and French (1997). We report by industry the number of firms making multiple bids, the percent of all multiple bids made by firms in that industry, the number of firms that are targets of a multiple bidders, and the percent of all firms in that industry that are targets of multiple bidders. The last two columns of Table 2 report data on the number and percent of bids originating in the bidders' own industry. For some industries the percent of own-industry bids is very high (e.g., Candy & Soda: 100%, Petroleum and Natural Gas: 73% Telecommunications: 67%), while in other industries it is much lower (e.g., Aircraft: 25%, Machinery: 24%). Though we do not attempt to explain this difference, the correlation coefficient between the amount of takeover activity within an industry and the amount of own-industry takeovers is 0.34 (columns 4 and 6). This suggests that for a particular industry the greater the number of takeovers, the greater the percentage of own-industry acquisitions.

The aggregate numbers reported in Table 2 can be viewed in the context of the work of Mitchell and Mulherin (1996), Mulherin and Reeves (2000), and Andrade Mitchell and Stafford (2001). These authors find industry clustering in acquisitions and divestitures and argue that these

---

<sup>5</sup> Holmstrom and Kaplan (2000) argue that while both the 1980s and 1990s were periods of significant M&A activity, the type of M&A activity was different in the two periods. The 1980s were characterized by significant LBO and

patterns result from deregulation and changing economic conditions. Mulherin and Reeves identify an additional pattern in the 1990s – a significant portion of the acquisition activity occurred in industries with high growth in this later period.<sup>6</sup> While we do not directly examine the clustering hypothesis, note that several industries (business services, telecommunications, healthcare, petroleum, wholesale, computers, and electronic equipment) make up a large fraction of the sample (59.7% of the bidders).

We follow Brown and Warner's (1985) standard event study methodology to calculate CARs for the five-day period (-2, 2) around the announcement date supplied by SDC. We estimate the abnormal returns using a modified market model:

$$AR_i = r_i - r_m \quad (1)$$

where  $r_i$  is the return on firm  $i$  and  $r_m$  is the value-weighted market index return. We eliminate the estimation period because of the high probability of confounding events for our set of acquirers. For frequent acquirers, there is a high probability that previous takeover attempts will be included in the estimation period thus making beta estimations somewhat less meaningful. Additionally, it has been shown that for short-window event studies weighting the market return by the firm's beta does not significantly improve estimation.<sup>7</sup>

## 4. Results

### 4.1 Abnormal returns by target type and method of payment

Tables 3, 4, 5, and 6 report the five-day cumulative abnormal returns (CARs) to multiple bidders classified by type of target and method of payment. In Table 3 Panel A, we report the CARs for the full sample of bidders. For all bids the CAR is a statistically significant positive 1.77%. However, when we differentiate the returns on the basis of whether the target was a public

---

hostile activity while the 90s bids were friendly and financed much more with equity. They suggest that by the 1990s corporations had adopted the beneficial features introduced in the 1980s by LBOs.

<sup>6</sup> Lowry and Schwert (2001) find evidence of clustering of similar type IPOs.

<sup>7</sup> See Brown and Warner (1980) for comparison of the market model with the market and risk-adjusted model.

or private target, we find that the CAR is a significantly negative -1.00% for public targets, significantly positive 2.08% for private targets, and significantly positive 2.75% for subsidiaries.<sup>8</sup> Further, the CARs are positive and significant for the private target sample, regardless of the method of payment used: cash (1.62%), common stock (2.43%), or combination (2.48%). When the target is public, the bidder returns are insignificant if the bid is made with cash or combination but a negative and significant -1.86% if the bid is made with stock. Finally, the market views acquisitions of subsidiaries as good regardless of the method of payment, a positive and significant 2.56% for cash bids, a positive and significant 3.23% for stock bids, and a positive and significant 3.33% for subsidiary bids. Interestingly subsidiary targets offer acquiring firms the largest abnormal returns, which we explain at the end of this section.<sup>9</sup>

In Panels B and C of Table 3 we report the CARs for the first and the fifth and higher bid respectively. We assume that the bidder returns on the fifth and higher bids will contain relatively less information about the bidder than the first bid, since the market has learned about the bidder. Given bidder returns contain information 1) about the bidder, 2) the synergies in the deal and 3) the division of gains in the terms of the deal, these later bids contain relatively more information about the synergies and division of gains in the deal than earlier bids.

The results suggest that the market reaction to the fifth and higher bid is slightly different than the reaction to the first bid. There is not a significant stock price reaction to the first bid for public targets, no matter the method of payment, although the sample sizes are so small it is difficult to read much into these results. There is a negative and significant CAR for the fifth and higher bids for public targets financed with stock (-2.62%). For first bids for private firms and subsidiaries, regardless of method of payment, CARs are positive and significant. The fifth and

---

<sup>8</sup> We do not examine the public targets to see how long they have been public and whether that makes a difference in the bidder returns. However, Field and Mulherin (1999) show that acquisition terms and target returns are similar across samples of recently public firms and more established firms. Our work complements theirs, because our private targets chose to be acquired without going public first.

<sup>9</sup> Note that approximately half the acquisitions are made with cash. Thus, especially when one includes private targets and subsidiaries, the comment of Andrade, Mitchell, and Stafford (2001) that “the pictures



higher bids are also accompanied by a positive and significant stock price reaction for the full samples of private targets and subsidiary targets. However, the magnitude of the positive reaction is less for the later bids and actually insignificant when the private target sample is separated by method of payment, suggesting that later bids contain less new information.

Another possible explanation for the results that the later bids for private firms and subsidiaries is that either bidders do not receive as favorable a price when they acquire multiple private firms or subsidiaries in a short period of time, or bidders making multiple acquisitions in a concentrated period of time are making acquisitions that create relatively small amount of synergies. We test these ideas by examining a sample of clustered private bids (two or more bids for private firms made on the same day).<sup>10</sup> The average size of these bids (and relative size compared to the bidder) is essentially the same as in the full sample. The five-day CARs for all bids (292 bids) for clustered private targets is a significant 2.77%, for 122 clustered cash bids is 0.40% (insignificant), 3.85% (significant) for 89 stock bids and 5.15% (significant) for 81 combination bids. Thus, because each of these targets are essentially the same size as the targets in the full sample, and there are two (or more targets) being acquired at the same time, these CARs are smaller in magnitude per bid than typical bids for private firms. The lower bidder returns associated with the clustered bids is in contrast to results we present later in the paper, that the larger the size of the target the more positive the CARs. Thus, this is some evidence that bidders do not do as well, per acquisition, either because of the amount they pay, or the synergies created by the deal, when they buy private firms in a short period of time.

One other factor that is related to the returns for later bids is the rise of internet firms in the latter part of our sample. Since many bids during the later 1990s involved Internet firms and more of the fifth and higher bids would be during the later 1990s, these results may be driven by Internet deals. We therefore examine acquirer returns for all bids made in 1998 and 1999 and for

---

of mergers in the 1990s that emerges is one where merging parties, often in closely related industries, negotiate a friendly stock swap," is too simplistic.

all bids made in 1998 and 1999 not involving Internet firms. We choose 1998 and 1999 because they are at the end of the sample and thus contain more of the fifth and higher bids, they are years with a major increase in the number and size of deals, and they are the years with the influx of Internet deals. We do not report these results in a table, but the pattern of returns is similar to that for all bids reported in Table 3. For all deals made in 1998 and 1999 the CARs associated with the bids are 1.40% (insignificant) for 30 cash bids for public targets, -3.19% (significant) for 56 stock bids for public targets, 2.39% (insignificant) for 166 cash bids for private targets, 5.90% (significant) for 105 stock bids for private targets, 1.91% (significant) for 93 subsidiary cash bids, and 1.94% (significant) for 11 subsidiary stock bids. When we exclude Internet deals (either the bidder or target firm is an internet firm), the CARs are less positive, though not significantly -- 1.27% (insignificant) for 29 cash bids for public targets, -3.19% (significant) for 46 stock bids for public targets, 1.07% (insignificant) for 147 cash bids for private targets, 1.11% (insignificant) for 61 stock bids for private targets, 2.13% (significant) for 91 cash bids for subsidiaries, and 1.67% (insignificant) for 8 stock bids for subsidiaries. These results suggest that Internet deals seem to be viewed slightly more favorably than the other deals.

In any event the important result from Table 3 is that the market views acquisitions of private firms and subsidiaries differently. We continue to explore the causes and the implications of this difference.

#### *4.3 Further evidence on Subsidiary Acquisitions*

In Table 4 we examine the subsidiary deals in greater detail. In the subsidiary acquisitions the bidder is acquiring the target from another public firm. One alleged reason for a firm selling a subsidiary is the presumed gain from focus. This has the implication that diversified firms might accept a relatively lower price for asset sale – a diversification discount. Table 4 divides our sample of subsidiary targets based on if their selling parent was diversified or not. We find that the returns to acquirers buying subsidiaries from diversified or non-diversified

---

<sup>10</sup> Note these bids are not in our main sample.

parents are relatively similar for all bids and first bids. However, for fifth bids and higher only acquisitions made using cash for a diversified parent's subsidiary provide the bidder with significantly positive abnormal returns, 2.45%. Thus, there is weak evidence that diversified parents will sell subsidiaries at a discount relative to non-diversified parents.

#### *4.4 Public and Private Targets Acquired by the Same Bidders*

The market views bids for private and subsidiaries different than those for public firms. We suggest that this is due to either a difference in the synergies between takeovers of public, private and subsidiary targets or in the division of gains from the bid. However, potentially even in our sample of multiple bidders the above results are due to differences in characteristics of bidders for public and private targets. Thus, we examine the returns to acquirers separated by whether they made bids for both private and public targets or made bids for only public or only private firms. The results, reported in Table 5, are essentially the same as for the samples in Table 3. The CARs for all bids made by acquirers of public, private and subsidiary targets are positive and significant (1.79%). When we consider the targets' types separately, the results are similar to those discussed earlier. If the bid is for a public target, the CARs are negative and significant - 1.07%. When the public bids are separated by method of payment, CARs are insignificant for the cash and combination offers and a negative and significant -1.92% for stock offers. In contrast, returns to acquirers for private targets are positive and significant for all payment types: 1.53% for cash offers, 2.47% for stock offers, and 2.72% for combination offers. These results are in contrast to Chang's (1998) results of insignificant announcement returns for cash bids. Once again subsidiary targets yield the highest returns to acquirers for all methods of payment: 2.74% for cash offers, 3.63% for stock offers, and 3.28% for combination offers.

The results in Table 5 Panel A are interesting. The average CARs for bidders are zero or significantly negative if the target is a public firm but significantly positive if the target is a private firm or a subsidiary. However, for the most part, the same firms are making both public

and private acquisitions. This suggests that it is characteristics of the target firm and its potential relation with the bidding firm rather than the bidding firm itself that determine these results.

To further confirm this result, we examine acquirers that made five or more bids for only public firms or only private firms. These results are reported in Panels B and C of Table 5. The CARs at the announcement of a bid for a private target by bidders that only acquired private firms (Panel B) are similar to the CARs at the announcement of a bid for a private target by bidders that acquired both public and private targets – positive and significant for cash or stock offers. However, the returns to acquirers purchasing only public firms are insignificant for all offer types, even for stock bids (although there are only 9). Note that there are 24 bidders that made bids for public targets only and 76 bidders that made bids for private targets only, but 439 acquirers that made bids for both private and public firms. Thus, most acquirers in our sample purchase both public and private firms.

In sum, the evidence in Table 5 shows that one of our major results – the market reaction to the acquisition of private targets, with both stock and cash as methods of payment, is positive, while the market reaction to the acquisition of public targets is at best zero – occurs among multiple bidders who bid for public targets only, private targets only, or both types of targets. Thus, the market will give positive and negative reactions to the same bidder, depending on the type of target even after controlling for the method of payment.

#### *4.5 The Impact of Relative Size on Acquirer Returns*

The major question that emerges from the above results: How can the same bidders who make good acquisitions of private targets make bad acquisitions of public targets, at least in terms of the measured bidder returns?<sup>11</sup> One simple explanation is the smaller the size of the target, the less impact the acquisition has on the overall activities of the bidding firm. The fact that there are

---

<sup>11</sup> Eckbo, Maksimovic, and Williams (1990) suggest possible explanations for our results: measured bidder returns have an attenuation bias because the outcome is uncertain, the merger is anticipated or the target is small relative to the bidder. Since private and subsidiary deals are not announced until the merger is finalized, there is little, if any, uncertainty. Further, the results in Table 3 show that returns decrease to acquirers for later bids. This may be due to attenuation bias or simply diminishing marginal returns to acquisitions.

positive and significant returns for bids for private targets, which tend to be relatively small, argues that the market will react to a bid, even if the target is small. Alternatively, a liquidity discount may exist: large private or subsidiary targets are sold at a discount to the acquirer as there will be fewer bidders interested in large acquisitions. However, in order to examine the effect of the size of the target on bidder returns we partition bidder returns by size of target. Table 6 reports CARs classified by the relative size of the merger. The relative size of the merger is measured as the target deal value divided by bidder market value.

We identify several patterns in the CARs. First, for public targets, the larger the target relative to the bidder, the more negative the acquirer's CAR. In contrast, for private targets and generally for subsidiaries, the returns earned by acquirer become more positive as target size increases. The difference-of-means tests of the CARs for stock offers indicate significant differences between the CARs of bids less than 10% of the relative size and bids greater than 10% of the relative size for both public and private targets (t-statistic equals 1.78 for private firms and -2.41 for public firms). Interestingly, the empirical finding of greater abnormal returns for larger private targets is similar to what Asquith, Bruner, and Mullins (1983) found for bids for public targets in the 1970s.

There are several possible explanations for the negative CARs for large public firms. The larger the target is relative to the bidder, the stronger the target's negotiating position and ability to extract more of the gain from the transaction. Alternatively, bidding firms may find it more difficult to integrate larger public targets into their business. However, neither of these explanations explain why the bidder return becomes more negative, the larger the target, when the target is public, and just the opposite when the target is private. A third explanation is that there are fundamental differences in the division of gains and/or synergies between takeovers involving public and private targets, and these differences are magnified the greater the relative size of the target. We believe this is a liquidity effect and we discuss it in greater detail at the end of this section.

#### *4.6 Method of Payment Analysis for Firms Making Several Acquisition Within Three Months*

The method-of-payment literature hypothesizes that bidders will offer their stock when it is overvalued and cash when undervalued or correctly valued. This leads to the empirical prediction that bidders making stock offers will have negative price reactions to merger announcements and those making cash offers will have positive or zero price reactions. Results reported in Tables 3, 5, and 6 support this prediction for public firms. However, we find that for private and subsidiary targets, acquirers have significant and positive abnormal returns. This would suggest the major hypothesis of method-of-payment literature does not hold. However, Hansen (1987) argues that bidders may choose to use stock even if they are correctly valued if there is uncertainty about the target's value. Since stock offers force the target to make efficient decisions regarding their own values, bidders that make stock offers to targets with greater value uncertainty would receive higher returns. Since private firms and subsidiaries are not publicly traded, i.e., there exist greater value uncertainty, bidders should be more likely to offer stock as the method payment and thus, receive a higher return. Once again our results are consistent with this prediction.

Yet, our sample of acquirers making five or more bids within a three-year period allows us to examine the method-of-payment choice from a different angle. While we do not directly test why a certain method of payment is used, we can test if a bidder uses the same method of payment in separate bids that are relatively close in time to each other. This enables us to concentrate on target and bid characteristics that influence the method of payment choice. We examine those theories in an indirect manner by collecting information on acquisitions, where the bidder made several bids within a short period of time. To the extent information asymmetry is important in bids, we would expect to see patterns in the bids made close together in time -- since the information asymmetry that exists at one point in time and its impact on bidders presumably would impact the bids in similar ways. For example, if a bidder believes its stock is overvalued, then bids made close together in time would be financed with equity.

From our original sample we have 1,115-paired acquisitions where the bidder acquired two or more targets within a three-month period. We would expect that these paired bids to have the same method of payment if the target or bid characteristics were similar. That is, if both targets were for private firms, the method-of-payment literature predicts that the bidder would use stock for both targets. Further, if the targets and the bidder were in different industries, the bidder would again use stock. The reasoning being that if the bidder and targets are in different industries, the bidder is less likely to know the value of the targets and thus, be more uncertain regarding the targets' values.

Table 7 provides the summary statistics for the paired transactions differentiated by whether both targets are in the same 2-digit SIC code, whether both targets are in the same industry as the bidder, whether both targets have the same public status, whether the same method of payment is used for both targets, and by the average difference in the size of the targets. The results cast doubt on information asymmetry theories explaining much of the motivations for acquisitions, including the choice of stock versus cash in an acquisition. We find substantial variation in our results where theories driven by information asymmetry would predict less variation.

In our sample of paired transactions, only 48.1% of the time are the targets in the same two-digit SIC code, only 38.6% of the time are the targets in the same industry as the bidder, 61.2% of the target pairs have the same public status, and 63.0% of the time the bidder use the same method of payment for the two targets, which are acquired at essentially the same time. More interesting though is when the bidder chooses to use different methods of payment for essentially the same targets. When both targets are in the same industry, the bidder uses different methods of payment 37.7% of the time, but when the targets and the bidder are all in the same industry, the bidder uses different methods of payment 36.3% of the time. Further, when the targets were both private or both subsidiaries, the bidder uses different methods of payment 36.2% of the time. The method of payment theories would predict that when there is greater

uncertainty (bidder and target in different industries or private/subsidiary target), the bidder should use stock. Thus, given we are finding that almost 40% of the time the bidders are not using stock for both targets, these results casts doubt on the method-of-payment hypothesis.

There could be other characteristics of the bid that could influence the choice of payment offered, e.g., size of the target. Therefore, to more fully examine the reasons bidders that make multiple acquisitions within a short period of time vary offer type across firms, we run a logistic regression on the choice of whether the two targets were acquired using the same or different method of payment. Our independent variables include a dummy variable with a value of 1 if the targets have differing public status (public, private or subsidiary), or 0 otherwise, a dummy variable with a value of 1 if the targets are in different industries, or 0 otherwise, a dummy variable with a value of 1 if the targets are in different countries, or 0 otherwise, a dummy variable with a value of 1 if the targets and the bidder are in different industries, or 0 otherwise, the log of the absolute difference in the relative size of the mergers, dummy variables for if either the targets and/or the bidder are in high-tech industries, as classified by SDC. For example, if the bidder and only one of the targets are in a high-tech industry, the dummy variable HLH is assigned a value of 1, otherwise the observation is 0. Since no market value for the private and subsidiary targets exists, we cannot use the standard market-to-book ratio as a proxy for growth opportunities and thus a proxy for uncertainty. Therefore, as a crude proxy for uncertainty, we use whether the bidder and/or target was in a high-tech industry.

As reported in Table 8, we find that if the two targets have the same public status (both public, private, or subsidiary targets), if the bidder and targets are in different industries, and the larger the difference in the relative size of the two mergers, the more likely the bidder is to choose different methods of payment. The method of payment literature hypothesizes that if there exists greater uncertainty for the bidder about the targets' values when the bidder and targets are in different industries, the bidder should be more likely to make the same offer type (stock). However, we find the exact opposite. Further, whether the bidder and/or targets were in high-



tech industries did not impact the bidder decision to use the same or different methods of payment.

Overall we find that in our sample of multiple bidders the choice of method of payment is very complex. The choice depends mostly on characteristics of the target and of the bid, but not necessarily of the bidder. Further, our results are inconsistent with the predictions from the method-of-payment literature.

#### *4.6 Regression analysis*

The previous results analyze returns to acquirers using univariate comparisons. In this section we perform multivariate tests on the determinants of acquirer's returns. In Table 9 we present the results of regressing the bidder's CARs on factors that impact CARs. As with all regressions that explain returns to acquiring firms, because of the low explanatory power of the regression, the results must be viewed with skepticism although the F-statistic for the equation is positive and significant. Our earlier discussion suggests that there are fundamental differences between private, public, and subsidiary targets. Thus, we run regressions for these three groups separately. Note, however, that there is overlap between the bidders in the three regressions since bidders made all three types of acquisitions.

We estimate bidder returns as a function of several bid characteristics, including whether the target is acquired with stock, with a combination of stock and cash, and interaction variables between the method of payment and the relative size of the deal. Other variables include the log of relative size of the merger and the log of the target's size (market capitalization or deal value). We use dummy variables to indicate if the target and the bidder are in the same industry, if the bid is the first bid, if the bid is a fifth or higher bid, if the target is foreign, if the deal involves an Internet firm, and if the subsidiary is from a conglomerate parent.

Each of the explanatory variables has been suggested by theory as a determinant of the market's perception of an acquisition. The relative size of the deal proxies for several effects. At a basic level, the larger the target relative to the bidder, the greater the effect of the acquisition on

the bidder, and likely the greater the market reaction. We interact the method of payment with the relative size variable to capture the interaction between the relative importance of the acquisition and any information conveyed by the bidder's choice of a method of payment. Dummy variables are included for whether the bid was a first bid or a fifth and higher bid to capture the results of the univariate tests that show fifth and higher bids may contain less information about the bidder than the first bids. The foreign dummy accounts for the potential that bids for foreign targets are different than bids for U.S. targets. There is a dummy that takes the value one if the bidder or the target was an Internet firm, though the theory is unclear on how the presence of an Internet firm in a deal would affect the bidder return. Finally, we account for industry effects by including dummy variables for eight-census bureau's grouping of SIC codes.

In general, the results are similar to what we have found with the univariate analysis. For private firms the coefficients on common stock deal, the interaction between stock and relative size, and relative size variables are positive and significant. This suggests the CARs associated with stock deals are more positive than those associated with cash deals in acquisitions of private firms, and that the market views larger deals even more favorably. The coefficient on the dummy variable for the fifth and higher bid is negative and significant. This suggests that as the number of bids increases, the acquirer will have lower CARs. Further, bids for foreign firms are met with a significantly negative impact on CARs. The coefficients of the service, retail, and natural resources industry dummies are positive and significant. Finally, the coefficient on the Internet deal dummy, the first bid dummy, and same industry dummy are all insignificant.

There are fewer variables that have significant coefficients in the sample of acquisitions of public firms or subsidiaries. For public firms the only explanatory variables with a significant coefficient are the dummy for if the acquisition is with stock and for the interaction variable for relative size and stock. Similar to the univariate results, the larger the relative size of the merger for the public firms, the greater the negative abnormal returns to the bidder who makes a stock

offer. All other variables are insignificant. For subsidiaries the only significant variables are the relative size of the merger and the dummy for the fifth and higher bid.

#### *4.7 What Do Our Results Say About the Acquisitions of Public and Non-Public Targets?*

Our most important result is that the market views the acquisition of a private target or a subsidiary as good news for a bidding firm, while the market views the acquisition of a public firm with stock as bad news for the bidder. While these results are similar to what others have found we believe our empirical analysis has several advantages over earlier work. First, we control for the identity of the bidder – it is the same acquirers acquiring the private firms and subsidiaries and public firms. Thus, the differences in the market reactions are not due to different type bidders buying private firms from public firms. Second, our sample of private targets and subsidiaries is much larger than in any other study (of which there are few) of an analysis of takeovers of non-public targets.

We show the market perceives the acquisitions of public and non-public targets very differently, and the differences are not predominately due to bidder characteristics. Andrade, Mitchell, and Stafford (2001) state that the theories used to explain mergers and the market reactions to mergers include efficiencies, agency costs, regulation, and diversification. Shleifer and Vishny (2001) add to the above list stock market valuations as a reason for takeovers and how takeovers are conducted. Based on the above list and if we assume the market reaction to a takeover announcement is meaningful, then our results must mean either that the market expects takeovers of non-public firms to involve more efficiencies (or less agency costs) or are regulated differently, or are valued differently than takeovers of public firms. However, we see no reason efficiencies should be greater (or agency costs less) in an acquisition of a private target than a public target. Thus we suggest the differences in bidder returns by the type of target are because the buyer gets a better price for a private target than for a public target.

We believe differences in the market itself for public targets and non-public targets are why the bidder gets a better price for a non-public target. Most important is a liquidity effect –

private firms and subsidiaries can not be bought and sold as easily as publicly traded firms. The lack of liquidity makes these investments less attractive and thus less valuable than similar, more liquid investments. The acquirer captures this discount in purchasing the privately-held firm or the subsidiary. This also is consistent with why the returns to acquirers are more positive the greater the relative size of the targets for private targets and subsidiaries and more negative the greater the relative size of public targets. Additionally, the returns to acquisitions of subsidiaries are greater than the returns to acquiring private firms, because subsidiary targets are larger than private targets.

A brief examination of the acquisition process itself illustrates how the market for public targets is more liquid, than the market for private targets and subsidiaries. Sales of public targets are typically auction-like in nature, with full disclosure required by the SEC. Professional arbitrageurs take positions in both target and bidder stocks, thus providing more market feedback in the prices of both securities. For private targets, the sales process can vary substantially. At best, if the targets have a financial advisor they can promote an auction-like atmosphere, with participation by a large number of qualified bidders. More realistic scenarios include limited auctions or a small number of interested bidders in a negotiated sale. The bidders are likely to have a bargaining advantage, at least relative to their position in bids for public targets.

Regulation also favors public targets more in the bidding process than a private target. For example, the disclosure and delay requirements of the Williams Act only apply to public targets. State antitakeover laws (and firm takeover defenses) only come into play when the management of the target wants to resist a takeover, which by definition will not happen for a private firm that is for sale.<sup>12</sup> Although a private target has the perfect defense against a bid (do not sell), personal pressure is also often higher for managers of private firms than for managers of public firms. Private target management might be the firm founders who, due to competitive

conditions or their desire to cash out, want to sell. Therefore, private managers may not have an effective bargaining position.

Thus, we conclude that that it is likely that in comparison to public targets, bidders buy non-public targets at a favorable price. Koeplin, Sarin, and Shapiro (2000) find that private companies sell for a statistically and economically significant discount compared to public companies using multiples of financial ratios to value the firm.

## **5. Summary**

In this paper, we study the returns associated with acquisition announcements for firms that acquired five or more public and private targets from 1990 through 2000. Our sample contains over 4000 acquisitions. At a first level, the study provides evidence on the returns to firms that make multiple acquisitions during the massive merger wave of the 1990s. There is relatively little evidence on the mergers of the 1990s. In addition, examine the pattern of returns to acquiring firms around the acquisition of private firms and subsidiaries of public firms as well as public firms. We believe an examination of acquisitions of private firms is important in its own right. For example, Zingales (2000), in his survey of corporate finance, suggests that “[e]mpirically, the emphasis on large companies has led us to ignore (or study less than necessary) the rest of the universe.” This is shown in our sample, where there are almost five times as many acquisitions of private targets and subsidiaries as there are acquisitions of public firms.

Second, by examining the variation in announcement returns among the same acquirers, we can better isolate the market’s perception of various characteristics of the transactions, including the public/private status of the target and the method of payment. Hietala, Kaplan, and Robinson (2000) suggest that returns to acquiring firms provide evidence about the valuation of the bidder, the synergies in the deal, and the division of gains in the payment. They further note it

---

<sup>12</sup> There is a sample selection bias in comparing bidder returns with private targets to public targets. We only observe private targets where the management has chose to sell the firm, the concept of an unsolicited (even hostile) bid is

is difficult to disentangle these effects and interpret bidder returns. We argue that in examining the returns to bidders who acquire multiple firms, we are controlling to a large extent for the information in the announcement return about the bidder and thus we can concentrate on other factors contained in the announcement return.

We find the average five-day CAR for all bids is a statistically significant 1.77%. However, the CAR is  $-1.00\%$  for bids for public firms,  $2.08\%$  for bids for private firms, and  $2.75\%$  for bids for subsidiaries of public firms (all three coefficients are statistically significant). When we partition the data by status of the target and method of payment, we find that the returns to bidders acquiring private targets and subsidiaries are positive and significant for both stock and cash bids, but the returns to firms acquiring public targets with stock are significantly negative. The results are robust to bidders that acquire both public and private targets, bidders who only acquire private targets and bidders who only acquire public targets, and bidders who acquire both private (subsidiaries) and public targets in a very short time. This pattern of bidder returns is magnified as the target size relative to the bidder becomes larger.

Our results present a paradox: Why are returns to bidding firms positive if the target is private or the subsidiary of a public firm and negative if it is the target is a public firm for the same bidder? We suggest that bidders obtain a better price for private targets and subsidiaries than for public targets especially if the public target is acquired with stock. We believe this is due to differences in the characteristics of the markets for public and non-public firms. Most importantly, the market for public firms is more liquid than the market for private targets and subsidiary targets. Buyers in the relatively illiquid market for assets (private firms and subsidiaries) do not pay as high a price for a firm as a public target firms. There is a discount for illiquidity and buyers capture it. Our results also suggest that the often-reported negative bidder returns around stock acquisitions of public firms (see Hietala, Kaplan, and Robinson (2000)) are due to bidder overpayment when they are using stock in an acquisition, and not that the bidder's

---

much less relevant for private than public targets.

equity is overpriced. This is because the same bidders who have negative stock-price reactions to a purchase of a public firm with stock have a positive reaction stock-price reaction to a purchase of a private target (or a subsidiary target).

The liquidity story is also consistent with the evidence the returns to acquirers are more positive the greater the relative size of the targets for private targets and subsidiaries and more negative the greater the relative size of public targets. Additionally, the returns to acquisitions of subsidiaries are greater than the returns to acquiring private firms, because subsidiary targets are larger than private targets.

Finally, we present evidence that the method of payment chosen in takeovers is often a function the characteristics of the target rather than just the bidder's attributes. First, we show that there is great variation in the method of payment in these acquisitions. In about half the acquisitions the bidder uses stock in the rest the bidder uses stock or some combination of securities and cash. We find that the bidder return in acquisitions of private targets and subsidiaries with stock is positive, which is inconsistent with many of the predictions of the method of payment literature.

We also examine a set of acquisitions where the same bidder acquired two firms within three months. The bidder often uses a different method of payment for the two acquisitions, which is not what we would predict if the method of payment were solely a function of the characteristics of the bidder. We find that if the targets were in different industries, if the bidder and targets were in different industries, and if the difference in relative size of the two mergers was large, then the acquirers were more likely to choose two different method of payments. In addition, the pattern of returns to the acquirers discussed above for the full sample stays the same in this clustered sample – positive returns on the announcement of a takeover of private firm or a subsidiary, negative returns on bids made for public firms with cash.

## References

- Andrade, G., M. Mitchell, and E. Stafford, 2001, New Evidence and Perspectives on Mergers, *Journal of Economic Perspectives*, 15, 103-120.
- Asquith, P., R. Bruner, and D. Mullins, 1983, The gains to bidding firms from merger, *Journal of Financial Economics* 11, 121-139.
- Berkovitch, E., and M. Narayanan, 1990, Competition and the medium of exchange in takeovers, *Review of Financial Studies* 3, 153-174.
- Betton, D., and B. E. Eckbo, 2000, Toeholds, bid-jumps, and expected payoffs in takeovers, *Review of Financial Studies* 13, 841-882
- Bradley, M., A. Desai, and E. H. Kim, 1988, Synergistic gains from corporate acquisitions and their division between the stockholders of target and acquiring firms, *Journal of Financial Economics* 21, 3-40.
- Brown, S., and J. Warner, 1980, Measuring security price performance, *Journal of Financial Economics* 8, 205-258.
- Brown, S., and J. Warner, 1985, Using daily stock returns: The case of event studies, *Journal of Financial Economics* 14, 3-32.
- Brown, D., and M. Ryngaert, 1991, The mode of acquisition in takeovers: Taxes and asymmetric information, *Journal of Finance* 46, 653-669.
- Bruner, R., 2001, Does M&A Pay? A Survey of Evidence for the Decision Maker, working paper, Darden Graduate School of Business, University of Virginia.
- Chang, S., 1998, Takeovers of privately held targets, methods of payment, and bidder returns, *Journal of Finance* 53, 773-784.
- Comment, Robert, and G. William Schwert, 1995, Poison or placebo? Evidence on the deterrence and wealth effects of modern antitakeover measures, *Journal of Financial Economics* 39, 3-43.
- Crawford, D., 1987, The structure of corporate mergers: Accounting, tax, and form-of-payment choices, Unpublished Dissertation, University of Rochester.
- Eckbo, B. E., R. Giammarino and R. Heinkel, 1990, Asymmetric information and the medium of exchange in takeovers: Theory and tests, *Review of Financial Studies* 3, 651-676.
- Eckbo, B. E., Y. Maksimovic, and J. Williams, 1990, Consistent estimation of cross-sectional models in event studies, *Review of Financial Studies* 3, 343-365.
- Eckbo, B. E., and K. Thorburn, 2000, Gains to bidder firms revisited: Domestic and foreign acquisitions in Canada, *Journal of Financial and Quantitative Economics* 35, 1-25.



- Emery, Gary W. and Jeannette Switzer, 1999, Expected market reaction and the choice of the method of payment for acquisitions. *Financial Management* 28, 73-86.
- Fama, E., and K. French, 1997, Industry costs of equity, *Journal of Financial Economics*, 153-193.
- Field, L., and J. H. Mulherin, 1999, Newly-Public Firms as Acquisition Targets: A Comparison with Established Target Firms, working paper, Penn State University.
- Fishman, M., 1989, Preemptive bidding and the role of the medium of exchange in acquisitions, *Journal of Finance* 44, 41-57.
- Gaughan, P., 1991, *Mergers & Acquisitions*, Harper Collins Publishers.
- Hansen, R., 1987, A theory for the choice of exchange medium in mergers and acquisitions, *Journal of Business* 60, 75-95.
- Hansen R., and J. Lott, 1996, Externalities and corporate objectives in a world with diversified shareholders/consumers, *Journal of Financial and Quantitative Analysis* 31, 43-68.
- Hietala, Pekka, Steven Kaplan, and David Robinson, 2000, What is the price of hubris? Using takeover battles to infer overpayments and synergies, working paper, INSEAD and University of Chicago
- Holmstrom Bengt and Steven Kaplan, 2000, Corporate governance and merger activity in the U.S.: Making sense of the '80s and '90s, working paper MIT and University of Chicago.
- Jarrell, G., and A. Poulsen, 1989, The returns to acquiring firms in tender offers: Evidence from the 80s, *Financial Management* 18, 12-19.
- Jarrell, G., J. Brickley, and J. Netter, 1988, The market for corporate control: The empirical evidence since 1980, *Journal of Economic Perspectives* 2, 49-68.
- Jennings, R., and D. Smith, 1996, An empirical investigation of the medium-of-exchange decision in a signaling framework, Working Paper.
- Jensen, M., and R. Ruback, 1983, The market for corporate control: The scientific evidence, *Journal of Financial Economics* 11, 5-50.
- Koeplin, John, Atulya Sarin, and Alan Shapiro, 2000, The private company discount, *Journal of Applied Corporate Finance* 12, 94-101.
- Lang, L., A. Poulsen, and R. Stulz, 1995, Asset sales, firm performance, and the agency costs of managerial discretion, *Journal of Financial Economics* 37, 3-38.
- Lang, L., R., Stulz, and R. Walkling, 1991, A test of the free cash flow hypothesis: The case of bidder returns, *Journal of Financial Economics* 29, 315-336.
- Malatesta, P. and R Thompson, 1985, Partially Anticipated Events A Model of Stock Price Reactions with an Application to Corporate Acquisitions, *Journal of Financial Economics* 237-250.

Martin, K., 1996, The method of payment in corporate acquisitions, investment opportunities, and management ownership, *Journal of Finance* 51, 1227-1246.

Mitchell, M., and J. H. Mulherin, 1996, The impact of industry shocks on takeover and restructuring activity, *Journal of Financial Economics*, 193-229.

Myers, S., and N. Majluf, 1984, Corporate financing and investment decisions when firms have information investors do not have, *Journal of Financial Economics* 87, 355-374.

Mulherin, J. H., and A. Reeves, 2000, Comparing acquisitions and divestitures, *Journal of Corporate Finance*, forthcoming.

Schipper, K., and R. Thompson, 1983, Evidence on the capitalized value of merger activity for acquiring firms, *Journal of Financial Economics* 11,

Scholes, M., and M. Wolfson, 1992, *Taxes and Business Strategy*, Prentice Hall: N.J.

Schwert, William, 2000, Hostility in takeovers: In the eyes of the beholder? *Journal of Finance* 55, 2599-2640.

Shleifer A. and R Vishny, 2001, Stock Market Driven Acquisitions, working paper 8439, NBER.

Song, M., and R. Walkling, 2000, Abnormal returns to rivals of acquisition targets: A test of the acquisition probability hypothesis, *Journal of Financial Economics* 55, 143-171.

Travlos, N., 1987, Corporate takeover bids, methods of payment, and bidding firms' stock returns, *Journal of Finance* 43, 943-963.

Weston, J. F., K. Chung, and J. Siu, 1998, *Takeovers, Restructuring, and Corporate Governance* 2<sup>nd</sup> edition, Prentice Hall: N.J.

Zingales, Luigi, 2000, In search of new foundations, *Journal of Finance* 55, 1623-1653.

**Table 1**

**Mean & median size of acquirers and targets for sample of firms where the bidder completed five or more bids within three years during 1990 - 2000**

For each of the following panels a particular bidder is represented only once per year, but may be represented multiple times over the ten-year period of 1990 - 2000. The total row for the number of bidder firms represents the number of unique acquirers throughout the sample period. All acquirers are publicly traded firms listed on the NYSE, NASDAQ, or AMEX. Targets include both foreign and domestic firms. Panel A contains 539 unique bidders acquiring 3,135 targets. Targets in panel A are public, private, and subsidiary. Panels B, C and D represent public, private and subsidiary deals, respectively. Panel B represents 261 unique bidders acquiring 456 public targets. Panel C contains 511 unique bidders acquiring 2,060 private targets. Panel D contains 324 unique bidders acquiring 619 subsidiary targets. Numbers are reported in millions.

	<b>Bidder</b>			<b>Target</b>		
	Mean	Median	N	Mean	Median	N
<i>Panel A: All</i>						
1990	2,470	308	18	199	21	26
1991	2,063	508	40	98	25	60
1992	1,991	319	65	65	17	107
1993	2,329	316	101	260	22	167
1994	2,083	325	138	107	15	270
1995	2,382	316	188	158	20	352
1996	2,850	425	240	125	27	489
1997	4,310	506	277	165	25	583
1998	6,811	714	253	344	31	523
1999	11,518	948	173	614	42	355
2000	16,639	2,756	88	637	71	204
<i>Total</i>	<i>5,240</i>	<i>534</i>	<i>539</i>	<i>265</i>	<i>27</i>	<i>3,135</i>
<i>Panel B: Public</i>						
1990	2,119	2,119	1	459	459	1
1991	2,501	1,814	5	260	135	5
1992	1,097	778	10	215	150	11
1993	5,384	704	19	1,505	289	22
1994	4,182	1,322	31	428	157	38
1995	5,516	1,149	42	843	243	47
1996	5,121	1,530	58	505	148	72
1997	9,141	1,092	65	630	301	74
1998	7,932	1,384	77	1,566	197	94
1999	28,923	3,947	47	2,594	429	65
2000	21,523	6,320	24	3,254	465	27
<i>Total</i>	<i>10,203</i>	<i>1,695</i>	<i>261</i>	<i>1,271</i>	<i>233</i>	<i>456</i>
<i>Panel C: Private</i>						
1990	594	149	13	194	11	19
1991	2,379	426	26	82	13	35
1992	1,254	277	50	41	12	75
1993	1,067	227	69	37	15	101
1994	1,792	191	106	43	10	178
1995	954	272	137	37	15	232
1996	2,127	268	190	49	18	325
1997	3,383	423	208	46	18	387
1998	3,534	546	188	56	20	339
1999	7,942	775	136	121	24	224
2000	17,509	2,137	74	225	53	145
<i>Total</i>	<i>3,905</i>	<i>440</i>	<i>511</i>	<i>69</i>	<i>18</i>	<i>2,060</i>
<i>Panel D: Subsidiary</i>						
1990	7,037	1,337	5	172	127	6
1991	1,766	1,141	16	84	27	20
1992	3,977	308	19	74	25	21
1993	2,803	485	35	150	34	43
1994	4,597	749	43	93	29	54
1995	2,983	379	64	102	27	73
1996	3,506	471	72	97	40	92
1997	5,490	562	95	259	33	122
1998	10,163	857	73	154	52	90
1999	26,052	1,673	54	338	65	66
2000	23,372	2,848	27	300	63	32
<i>Total</i>	<i>8,298</i>	<i>733</i>	<i>324</i>	<i>177</i>	<i>38</i>	<i>619</i>

**Table 2****Takeover activity by industry for firms that make or are the target of multiple takeovers**

This table reports the fraction of sample firms that were acquired and firms that were acquiring five or more firms within three years during 1990 – 2000 per industry. Industry data are organized using Fama and French (1997) industry classifications. Columns two through four report the number and percentage of acquirers and targets, respectively, in a particular industry. Columns six and seven report the number and percentage of bidders acquiring targets in their own industry. Targets are comprised of public, private and subsidiary firms. The number and percentage of targets acquired within the acquirers own industry is reported the final two columns.

	Acquirers		Targets		Number of own industry acquisitions	% of bids in own industry
	<i>N</i>	%	<i>N</i>	%		
Agriculture	3	0.6%	14	0.4%	11	64.7%
Aircraft	7	1.3%	23	0.7%	10	25.0%
Apparel	1	0.2%	5	0.2%	0	0.0%
Automobiles	6	1.1%	25	0.8%	18	62.1%
Banking	0	0.0%	6	0.2%	0	0.0%
Business Services	128	23.7%	849	27.1%	446	61.2%
Business Supplies	1	0.2%	14	0.4%	1	20.0%
Candy and Soda	2	0.4%	13	0.4%	11	100.0%
Chemicals	6	1.1%	15	0.5%	1	3.7%
Computers	30	5.6%	135	4.3%	84	47.7%
Construction	8	1.5%	47	1.5%	18	50.0%
Construction Materials	11	2.0%	49	1.6%	11	18.6%
Consumer Goods	4	0.7%	26	0.8%	7	38.9%
Defense	1	0.2%	3	0.1%	0	0.0%
Electrical Equipment	7	1.3%	33	1.1%	8	21.1%
Electronic Equipment	36	6.7%	193	6.2%	100	41.7%
Entertainment	16	3.0%	55	1.8%	30	38.0%
Fabricated Products	2	0.4%	19	0.6%	3	25.0%
Food Products	5	0.9%	14	0.4%	9	37.5%
Healthcare	36	6.7%	193	6.2%	91	43.5%
Insurance	0	0.0%	17	0.5%	0	0.0%
Machinery	22	4.1%	96	3.1%	35	23.8%
Measuring and Control Equipment	5	0.9%	40	1.3%	12	35.3%
Medical Equipment	12	2.2%	74	2.4%	48	67.6%
Misc	1	0.2%	9	0.3%	1	25.0%
Nonmetallic Mining	1	0.2%	2	0.1%	0	0.0%
Personal Service	5	0.9%	28	0.9%	7	22.6%
Petroleum and Natural Gas	24	4.5%	119	3.8%	91	72.8%
Pharmaceutical	7	1.3%	39	1.2%	20	52.6%
Printing and Publishing	4	0.7%	25	0.8%	9	50.0%
Real Estate	0	0.0%	18	0.6%	0	0.0%
Recreational Products	1	0.2%	15	0.5%	4	80.0%
Restaurants, Motels, Hotels	11	2.0%	90	2.9%	78	83.9%
Retail	13	2.4%	96	3.1%	43	54.4%
Rubber and Plastics	1	0.2%	21	0.7%	6	85.7%
Shipbuilding, Railroad	1	0.2%	3	0.1%	2	25.0%
Shipping Containers	2	0.4%	12	0.4%	7	63.6%
Steel Works	8	1.5%	44	1.4%	16	32.0%
Telecommunications	64	11.9%	330	10.5%	248	67.2%
Textiles	2	0.4%	12	0.4%	5	50.0%
Trading	0	0.0%	21	0.7%	0	0.0%
Transportation	10	1.9%	56	1.8%	40	61.5%
Trash & Waste	6	1.1%	45	1.4%	28	71.8%
Wholesale	29	5.4%	192	6.1%	67	40.6%

**Table 3****Cumulative abnormal returns of frequent acquirers where the bidder made five or more takeovers, within three years, from 1990 - 2000**

Cumulative abnormal returns are calculated for the five days (-2, 2) around the announcement (day 0) of a takeover. Abnormal returns are estimated using a modified market model

$$AR_i = r_i - r_m$$

where  $r_i$  is the return on firm  $i$  and  $r_m$  is the value-weighted market index return. The usual estimation period is eliminated due to the high probability of confounding events for bidders acquiring five or more targets within three years. All acquirers are publicly traded firms listed on the NYSE, NASDAQ, or AMEX with a stock price of \$2 or greater in the month of the takeover announcement. Results in panel A are all bids for public, private and subsidiary targets. Panels Band C are sub-samples of the panel A; they contain first bids and fifth and higher bids, respectively. The results for each panel are divided further into method of payment. Stock offers include common stock only or a combination of common stock and options, warrants, or rights. Cash offers include cash only and mixtures of cash and debt. Combination deals are comprised of everything not considered stock or cash. The median is in brackets and the number of bids is reported below the median. In the 5<sup>th</sup> and higher panel, the stars represent the significance level of tests of the differences in means between the first and fifth bids.

	All	Cash	Stock	Combo
<i>Panel A: All bids</i>				
All multiple acquirers	1.77% <sup>a</sup> [1.07%] 3,135	1.78% <sup>a</sup> [1.12%] 1,530	1.25% <sup>a</sup> [0.77%] 763	2.20% <sup>a</sup> [1.24%] 842
Public targets	-1.00% <sup>b</sup> [-0.71%] 456	0.34% [0.53%] 146	-1.86% <sup>b</sup> [-1.28%] 218	-1.10% [-1.63%] 92
Private targets	2.08% <sup>a</sup> [1.29%] 2,060	1.62% <sup>a</sup> [0.90%] 920	2.43% <sup>a</sup> [1.54%] 506	2.48% <sup>a</sup> [1.81%] 634
Subsidiary targets	2.75% <sup>a</sup> [1.72%] 619	2.56% <sup>a</sup> [1.62%] 464	3.23% [4.27%] 39	3.33% <sup>a</sup> [2.26%] 116
<i>Panel B: 1st bids – within 3 year constraint</i>				
All multiple acquirers	2.74% <sup>a</sup> [1.54%] 471	2.20% <sup>a</sup> [1.28%] 222	2.15% <sup>c</sup> [0.95%] 120	4.24% <sup>a</sup> [2.88%] 129
Public targets	-0.88% [-0.44%] 65	-0.69% [-0.74%] 27	-1.74% [-0.35%] 24	0.23% [0.01%] 14
Private targets	3.22% <sup>a</sup> [1.74%] 309	1.95% <sup>a</sup> [1.32%] 122	3.05% <sup>b</sup> [1.36%] 87	4.93% <sup>a</sup> [3.42%] 100
Subsidiary targets	3.64% <sup>a</sup> [2.42%] 97	3.68% <sup>a</sup> [1.85%] 73	3.78% [1.30%] 9	3.36% <sup>b</sup> [2.91%] 15
<i>Panel C: 5th and higher bids</i>				
All multiple acquirers	0.52% <sup>c</sup> [0.24%] 1,299	0.87% <sup>a</sup> [0.57%] 659	-0.25% [-0.11%] 313	0.53% [-0.38%] 327
Public targets	-1.73% <sup>b</sup> [-1.52%] 194	-0.38% [0.31%] 56	-2.62% <sup>c</sup> [-1.79%] 95	-1.51% [-2.29%] 43
Private targets	0.72% <sup>b</sup> [0.24%] 856	0.54% [0.20%] 411	0.89% [0.65%] 206	0.87% [0.10%] 239
Subsidiary targets	1.57% <sup>a</sup> [1.43%] 249	1.94% <sup>a</sup> [1.64%] 192	-1.02% [1.23%] 12	0.68% [-0.11%] 45

<sup>a</sup> Denotes significance at 1% level.

<sup>b</sup> Denotes significance at 5% level.

<sup>c</sup> Denotes significance at 10% level.

**Table 4****Cumulative abnormal returns of frequent acquirers from 1990 - 2000 where the target is a subsidiary**

This table describes the cumulative abnormal returns of a bidder acquiring a subsidiary from a parent that is either diversified, represented on the left portion of the table, or non-diversified, represented on the right side of the table. A diversified parent is defined as a parent whose 3 digit SIC code is different from that of the subsidiary company. CARs are calculated for the five days (-2, 2) around the announcement (day 0) of a takeover. Abnormal returns are estimated using a modified market model

$$AR_i = r_i - r_m$$

where  $r_i$  is the return on firm  $i$  and  $r_m$  is the value-weighted market index return. The usual estimation period is eliminated due to the high probability of confounding events for bidders acquiring five or more targets in the ten-year period. All acquirers are publicly traded firms listed on the NYSE, NASDAQ, or AMEX with a stock price of \$2 or greater in the month of the takeover announcement. The results for each panel are divided further into method of payment. Stock offers include common stock only or a combination of common stock and options, warrants, or rights. Cash offers include cash only and mixtures of cash and debt. Combination deals are comprised of everything not considered stock or cash. The median is in brackets and the number of bids is reported below the median. The first star represents a  $t$ -test and the second the Wilcoxon test.

	All	Cash	Stock	Combo	All	Cash	Stock	Combo
	<i>Diversified Parent</i>				<i>Non-Diversified Parent</i>			
All bids	2.93% <sup>a</sup> [1.67%] 419	2.90% <sup>a</sup> [1.62%] 317	3.48% [2.85%] 25	2.86% <sup>a</sup> [2.11%] 77	2.37% <sup>a</sup> [1.79%] 200	1.84% <sup>a</sup> [1.43%] 147	2.79% [6.94%] 14	4.24% <sup>b</sup> [2.88%] 39
1 <sup>st</sup> bids	3.64% <sup>a</sup> [1.22%] 66	3.42% <sup>a</sup> [1.11%] 51	4.39% [-2.11%] 5	4.36% <sup>b</sup> [4.30%] 10	3.65% <sup>b</sup> [3.09%] 31	4.29% <sup>c</sup> [3.39%] 22	3.02% [4.00%] 4	1.34% [1.65%] 5
5 <sup>th</sup> and higher bids	1.95% <sup>a</sup> [1.56%] 163	2.45% <sup>a*</sup> [1.92%] 128	1.93% [4.26%] 9	-0.46% [-0.25%] 26	0.83% [1.16%] 86	0.92% [1.16%] 64	-9.86% [-4.29%] 3	2.23% [1.80%] 19

<sup>a</sup> Denotes significance at 1% level.

<sup>b</sup> Denotes significance at 5% level.

<sup>c</sup> Denotes significance at 10% level.

\* The diversified sample is significantly different from the non-diversified sample (10%)

**Table 5****Cumulative abnormal returns of frequent acquirers from 1990 – 2000**

Cumulative abnormal returns are calculated for the five days (-2, 2) around the announcement (day 0) of a takeover. Abnormal returns are estimated using a modified market model

$$AR_i = r_i - r_m$$

where  $r_i$  is the return on firm  $i$  and  $r_m$  is the value-weighted market index return. The usual estimation period is eliminated due to the high probability of confounding events for bidders acquiring five or more targets in the ten-year period. All acquirers are publicly traded firms listed on the NYSE, NASDAQ, or AMEX with a stock price of \$2 or greater in the month of the takeover announcement. Results in the panel A are all bids from bidders that acquired both public and private targets. Panels B and C contain bidders acquiring only private firms and bidders acquiring no private firms, respectively. The results for each panel are divided further into method of payment. Stock offers include common stock only or a combination of common stock and options, warrants, or rights. Cash offers include cash only and mixtures of cash and debt. Combination deals are comprised of everything not considered stock or cash. The median is in brackets and the number of bids is reported below the median.

	All	Cash	Stock	Combo
<i>Panel A: Both private &amp; public acquirers</i>				
Firms acquiring both public & private targets	1.79% <sup>a</sup> [1.12%] 2,820	1.79% <sup>a</sup> [1.23%] 1,401	1.17% <sup>a</sup> [0.72%] 684	2.36% <sup>a</sup> [1.56%] 735
Public targets	-1.07% <sup>b</sup> [-0.79%] 426	0.38% [0.54%] 129	-1.92% <sup>b</sup> [-1.48%] 212	-1.16% [-1.79%] 85
Private targets	2.11% <sup>a</sup> [1.29%] 1,822	1.53% <sup>a</sup> [0.88%] 845	2.47% <sup>a</sup> [1.54%] 436	2.72% <sup>a</sup> [1.89%] 541
Subsidiary targets	2.90% <sup>a</sup> [1.97%] 572	2.74% <sup>a</sup> [1.84%] 427	3.63% [5.19%] 36	3.28% <sup>a</sup> [2.11%] 109
<i>Panel B: Firms acquiring only private targets</i>				
All Private Acquisitions	1.90% <sup>b</sup>	2.63% <sup>b</sup>	2.23% <sup>c</sup>	1.05%
Bidders	[1.35%] 238	[2.58%] 75	[1.68%] 70	[0.79%] 93
<i>Panel C: Firms acquiring no private targets</i>				
No Private Acquisitions	0.57%	0.38%	-0.27%	1.81%
Bidders	[0.24%] 77	[0.09%] 54	[0.24%] 9	[0.30%] 14

<sup>a</sup> Denotes significance at 1% level.

<sup>b</sup> Denotes significance at 5% level.

<sup>c</sup> Denotes significance at 10% level.

**Table 6**

**Distribution of cumulative abnormal returns of frequent bidding firms from 1990 – 2000 where CARs are categorized by the relative size of the target**

Results are from takeovers of public, private, or subsidiary targets from publicly traded acquirers. Cumulative abnormal returns are calculated for the five days (-2, 2) around the announcement (day 0) of a takeover. Abnormal returns are estimated using a modified market model:  $AR_i = r_i - r_m$  where  $r_i$  is the return on firm  $i$  and  $r_m$  is the value-weighted market index return. The estimation period is eliminated due to the probability of confounding events for bidders acquiring five or more targets within three years. The relative size of the target is target value divided by acquirer market value. Acquirer market value is calculated as of the month before the announcement date and is the product of the monthly price and common shares outstanding on CRSP. Stock offers include common stock only or a combination of common stock and options, warrants, or rights. Cash offers include cash only and mixtures of cash and debt. Combo deals are everything else. Panel A represents all bids while panels B-D represent public, private and subsidiary, respectively. The median is in brackets and the number of firms in the sub-sample is reported below the median.

	All	Cash	Stock	Combo
<i>Panel A: All</i>				
<5%	1.04% <sup>a</sup> [0.55%] 1,573	0.84% <sup>a</sup> [0.39%] 875	1.31% <sup>a</sup> [1.06%] 384	1.26% <sup>b</sup> [0.71%] 314
5% - 9.99%	2.02% <sup>a</sup> [1.61%] 528	1.86% <sup>a</sup> [1.35%] 249	1.94% <sup>b</sup> [1.59%] 129	2.37% <sup>a</sup> [1.96%] 150
10% - 19.99%	2.12% <sup>a</sup> [1.40%] 463	2.71% <sup>a</sup> [1.96%] 206	1.68% [-0.52%] 102	1.64% <sup>b</sup> [0.70%] 155
>= 20%	3.23% <sup>a</sup> [2.14%] 571	4.86% <sup>a</sup> [4.18%] 200	0.17% [-0.97%] 148	3.81% <sup>a</sup> [2.47%] 223
<i>Panel B: Public</i>				
<5%	0.62% [-0.05%] 138	-0.15% [-0.38%] 75	1.93% <sup>b</sup> [0.69%] 50	-0.03% [-0.94%] 13
5% - 9.99%	0.13% [1.93%] 56	-1.21% [1.87%] 23	2.11% [2.18%] 25	-2.25% [-1.49%] 8
10% - 19.99%	-0.97% [-1.31%] 76	3.28% <sup>a</sup> [1.83%] 21	-2.81% <sup>c</sup> [-4.56%] 45	-1.59% [-2.87%] 10
>= 20%	-2.56% <sup>a</sup> [-2.03%] 186	0.74% [1.14%] 27	-4.37% <sup>a</sup> [-2.64%] 98	-1.10% [-2.18%] 61
<i>Panel C: Private</i>				
<5%	1.03% <sup>a</sup> [0.49%] 1,120	0.76% <sup>b</sup> [0.25%] 541	1.26% <sup>b</sup> [1.14%] 319	1.32% <sup>b</sup> [0.79%] 260
5% - 9.99%	2.08% <sup>a</sup> [1.16%] 371	1.88% <sup>a</sup> [0.47%] 150	1.50% [0.95%] 98	2.79% <sup>a</sup> [1.99%] 123
10% - 19.99%	2.69% <sup>a</sup> [1.68%] 297	3.07% <sup>a</sup> [2.23%] 121	4.34% <sup>a</sup> [2.44%] 49	1.70% <sup>c</sup> [1.15%] 127
>= 20%	5.75% <sup>a</sup> [4.35%] 272	3.96% <sup>a</sup> [3.50%] 108	11.72% <sup>a</sup> [7.89%] 40	5.39% <sup>a</sup> [4.04%] 124
<i>Panel D: Subsidiary</i>				
<5%	1.26% <sup>a</sup> [0.88%] 315	1.31% <sup>a</sup> [0.87%] 259	0.35% [1.30%] 15	1.28% [1.07%] 41
5% - 9.99%	2.87% <sup>a</sup> [2.00%] 101	2.74% <sup>a</sup> [1.77%] 76	8.44% <sup>c</sup> [5.73%] 6	1.63% [4.53%] 19
10% - 19.99%	2.84% <sup>a</sup> [2.51%] 90	1.83% <sup>b</sup> [1.90%] 64	10.67% <sup>b</sup> [10.35%] 8	2.97% [1.26%] 18
>= 20%	6.71% <sup>a</sup> [5.81%] 113	8.07% <sup>a</sup> [5.71%] 65	-1.52% [0.65%] 10	6.55% <sup>a</sup> [6.13%] 38

<sup>a</sup> Denotes significance at 1% level.

<sup>b</sup> Denotes significance at 5% level.

<sup>c</sup> Denotes significance at 10% level.



**Table 7**

**Descriptive statistics for paired acquisitions where the frequent bidder acquires two targets within in 90 days**

Columns two and three represent aggregate numbers on paired transactions. Columns four and five represent pairs acquired by the same bidder within 90 days where the bidder used different methods of payment. The last six data columns represent pairs acquired using the same payment method. Method of payment is classified as follows. Stock offers include common stock only or a combination of common stock and options, warrants, or rights. Cash offers include cash only and mixtures of cash and debt. Combination deals are comprised of some proportion of stock and cash. Industry is measured using three-digit SIC codes.

	<i>All Paired Transactions</i> ( <i>N=1,115</i> )		<i>Method of Payment</i>										
			<b>Different</b> ( <i>N=450</i> )		<b>Same</b> ( <i>N=665</i> )								
	#	%	#	%	<i>Stock</i> ( <i>N=141</i> )	<i>Cash</i> ( <i>N=377</i> )	<i>Combo</i> ( <i>N=137</i> )	<i>All</i> ( <i>N=665</i> )	#	%	#	%	
Targets in the same industry	536	48.1%	202	37.7%	70	13.1%	196	36.6%	68	12.7%	334	62.3%	
Pairs in the same industry as bidder	430	38.6%	156	36.3%	56	13.0%	167	38.8%	51	11.9%	274	63.7%	
Pairs with the same public status	682	61.2%	250	36.7%	102	15.0%	219	32.1%	111	16.3%	432	63.3%	
Public	32	2.9%	8	25.0%	13	40.6%	9	28.1%	2	6.2%	24	75.0%	
Private	591	53.0%	227	38.4%	88	15.0%	168	28.4%	108	18.3%	364	61.6%	
Subsidiary	59	5.3%	15	25.4%	1	1.7%	42	71.2%	1	1.7%	44	74.6%	
Average [median] difference in size of targets (in millions of dollars)	\$300	-	\$437	-	\$449	-	\$139	-	\$36	-	\$208	-	
	[\$23]		[\$27]		[\$44]		[\$21]		[\$17]		[\$22]		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)

**Table 8****Logistic regression analysis of factors affecting method of payment in 3-month clustered takeovers from 1990 – 2000 for frequent acquirers**

This sample consists of 655 observations in which a bidder acquired two firms within a 90-day period. Each observation consists of two consecutive bids. If the bidder acquired three firms within 90 days, the middle bid is used twice; it is paired with the first and third bids. The dependent variable is a dummy variable taking the value 0 if the bidder acquired the two firms using the same method of payment and 1 if the bidder used different methods of payment. 518-paired transactions utilize the same method of payment; in 137 paired transactions a different method of payment was used, per takeover. In this analysis we consider only those paired takeovers where either cash or stock was used. Combination deals are entirely excluded. Stock offers include common stock only or a combination of common stock and options, warrants, or rights. Cash offers include cash only and mixtures of cash and debt. STATUS is a dummy variable with a value of 1 if the targets have differing public status (public, private or subsidiary), or 0 otherwise. TARGET INDUSTRY is a dummy variable with a value of 1 if the targets are in different industries, or 0 otherwise. Industry data are organized using Fama and French (1997) industry classifications. TARGET COUNTRY is a dummy variable with a value of 1 if the targets are in different countries, or 0 otherwise. BIDDER/TARGET INDUSTRY is a dummy variable with a value of 1 if the targets and the bidder are in different industries, or 0 otherwise. TARGET SIZE DIFFERENCE is the log of the absolute difference in the relative size of the mergers. The relative size of the merger is the natural log of deal value divided by acquirer market value as of the month before the announcement date. HHH is a dummy variable with a value of 1 if the targets and the bidder are all in high-tech industries, as classified by SDC, or 0 otherwise. HLH is a dummy variable with a value of 1 if the bidder and only one of the targets are in high-tech industries, or 0 otherwise. LHH is a dummy variable with a value of 1 if the bidder is in a low-tech industry and both of the targets are in high-tech industries, or 0 otherwise. LHL is a dummy variable with a value of 1 if the bidder and only one of the targets are in low-tech industries, or 0 otherwise. LLL is a dummy variable with a value of 1 if none of the targets and the bidder are in high-tech industries, or 0 otherwise. P-values are reported in brackets next to the parameter estimates.

<b>Variable</b>	<b>Estimate</b>
Intercept	-1.737 [0.001]
STATUS	0.650 [0.002]
TARGET INDUSTRY	-0.324 [0.322]
TARGET COUNTRY	0.246 [0.282]
BIDDER/TARGET INDUSTRY	0.915 [0.006]
TARGET SIZE DIFFERENCE	0.133 [0.020]
HHH	0.420 [0.100]
HLH	0.261 [0.431]
LHH	0.478 [0.451]
LHL	0.009 [0.986]
LLL	-0.408 [0.204]

**Table 9****Ordinary least squares regression analyses explaining announcement period abnormal returns of frequent acquirers from 1990 - 2000**

This sample consists of 3,135 acquisitions of private, public and subsidiary firms. An industry measure is taken from the census bureau's grouping of SIC codes yielding eight industry classifications. Seven of these are used as dummies in the regression but are not reported in the results. Stock offers include common stock only or a combination of common stock and options, warrants, or rights. Cash offers include cash only and mixtures of cash and debt. Everything else is considered as a combination offer. The relative size of the merger is the natural log of target deal value, as reported by SDC, divided by acquirer market value as of the month before the announcement date. Tech firm classifications are taken from SDC. Finally, a subsidiary is classified as being sold by a conglomerate if the subsidiary's parent firm is in a different 3 digit SIC code from that of the subsidiary. P-values are reported in brackets next to the parameter estimates.

	<b>All bids</b>	<b>Public</b>	<b>Private</b>	<b>Subsidiary</b>
Intercept		0.038 [0.182]	0.042 [0.001]	0.085 [0.000]
Dummy = 1 if target is acquired with common stock		-0.061 [0.005]	0.043 [0.007]	-0.041 [0.180]
Dummy = 1 if target is acquired with combo		-0.019 [0.397]	0.009 [0.460]	-0.005 [0.766]
Interaction variable = relative size * stock		-0.023 [0.002]	0.011 [0.012]	-0.014 [0.169]
Interaction variable = relative size * combo		-0.005 [0.563]	0.003 [0.513]	0.001 [0.908]
Log of relative size		0.005 [0.401]	0.007 [0.010]	0.017 [0.000]
Log of target size		-0.004 [0.162]	0.001 [0.442]	-0.001 [0.692]
Dummy = 1 if first bid		-0.007 [0.627]	-0.003 [0.685]	-0.005 [0.629]
Dummy = 1 if fifth or higher bid		-0.013 [0.181]	-0.019 [0.000]	-0.020 [0.008]
Dummy = 1 if target is foreign		0.016 [0.255]	-0.012 [0.062]	0.007 [0.450]
Dummy = 1 if bidder or target is a tech firm		0.009 [0.451]	-0.004 [0.431]	0.003 [0.732]
Dummy = 1 if target and bidder are in same industry		-0.000 [0.967]	0.004 [0.358]	-0.004 [0.610]
Dummy = 1 if subsidiary is from a conglomerate				0.004 [0.595]
F-statistic		2.21 [0.003]	5.14 [0.000]	3.60 [0.000]
N		456	2,060	619
Adjusted R <sup>2</sup>		4.6%	3.5%	7.4%