

# How Are Firms Sold?

Audra L. Boone  
School of Business Administration  
College of William & Mary  
Williamsburg, VA 23187  
(757) 221-2954  
[audra.boone@business.wm.edu](mailto:audra.boone@business.wm.edu)

J. Harold Mulherin\*  
Department of Economics  
Claremont McKenna College  
Claremont, CA 91711  
(909) 607-3141  
[harold.mulherin@claremontmckenna.edu](mailto:harold.mulherin@claremontmckenna.edu)

June 2004

JEL Classification: G34; D44

Keywords: Mergers and acquisitions; auction; negotiation

\*corresponding author

For comments on prior drafts, we thank Bob Hansen, Zhikun Li, Michelle Lowry, Jon Macey, Mike Maloney, Chip Ryan, Janet Smith, Mike Stegemoller, Fred Weston, session participants at the meeting of the Financial Management Association, and seminar participants at Babson College, the College of William and Mary, the University of Georgia, and the University of Nevada Las Vegas.

## **How Are Firms Sold?**

### *Abstract*

We study a novel data set on the auctions and negotiations conducted prior to the public announcement of a corporate takeover. We find that half of the sample firms employ an auction and the other half use negotiation, with the choice of the sales procedure in a given transaction being determined by characteristics including target size and industry. We use this data to test different theories that model the wealth effects that the choice of an auction or a negotiation has on the target firm in a takeover. We find that the returns to target firms are comparable in auctions and negotiations. The results hold both in single-equation analysis and in two-stage regressions that control for the endogeneity of the choice between an auction and a negotiation. The results are consistent with the models of French and McCormick (1984) and Hansen (2001) that argue that the choice between an auction and a negotiation in a particular takeover reflects a trade-off between competition and information costs.

## How Are Firms Sold?

A central decision in a corporate takeover is the method by which the target firm is sold. The target can contact a number of potential bidders and auction itself in a formal sealed bid process. By contrast, the target can instead negotiate with a single buyer. Regardless of the choice of sales method, much of the process occurs before any public announcement of the takeover.

While theory such as Bulow and Klemperer (1996) and Hansen (2001) has modeled this important choice of auctions versus negotiations, little or no empirical analysis has studied the factors affecting either the decision to sell via auction or negotiation or the wealth effects of the chosen sales method. The prior empirical work instead focuses on the public aspects of the takeover process that begin after a takeover is announced. Many of the authors of the prior work (e.g., Schwert (2000, p. 2600), Jennings and Mazzeo (1993, p.907)) acknowledge, however, that private negotiations and competition often occur prior to the public announcement of a takeover bid. It is this private sales process that we study in our analysis of auctions and negotiations.

Our sample comprises 400 major corporate takeovers from the 1990s. Using the detailed information in the filings of the U.S. Securities and Exchange Commission, we determine the sales procedure in each transaction. We find that in roughly half of the transactions, the selling firm auctions itself to multiple potential buyers. In the other half of the sample, the selling firm chooses to negotiate exclusively with a single buyer. We also document the deal and target characteristics that are associated with the choice between an auction and a negotiation in a particular takeover.

The bulk of our empirical analysis compares the wealth effects to the target for the auctions and negotiations in the sample. Our interest is in providing unique tests of the different theories that model auctions and negotiations in corporate takeovers. The theories can be placed in two groups: one set of theories predicts that auctions provide different returns to targets than negotiations, while another set of theories argues that the chosen sales procedure in a given takeover responds to information costs and predicts that auctions and negotiations provide equivalent returns in corporate takeovers. In particular, Bulow and Klemperer (1996) predict that auctions result in greater returns than negotiations, while French and McCormick (1984) and Hansen (2001) predict that auctions and negotiations provide equivalent returns.

Because many of the theories argue that the chosen sales procedure in a given takeover reflects the target's intent to maximize expected returns, care must be taken in making empirical comparisons between the wealth effects of auctions and negotiations. In our empirical tests, we report both single-equation comparisons of the returns to auctions and negotiations as well as two-stage regressions that control for the endogeneity between target returns and the choice of sales procedure.

In addition to providing tests of corporate takeover theories, our analysis is highly pertinent to important policy issues in corporate law. A longstanding debate on takeover procedure has seen recommendations ranging from an outright ban on corporate auctions (Easterbrook and Fischel (1982)) to mandatory usage of auctions in a takeover setting (Bebchuk (1982)). Our novel treatment of the private takeover process offers direct evidence with which to resolve such divergent proposals.

Our analysis also is relevant to the ongoing debate on the use of termination provisions and lock-up options in corporate takeovers. Since their model argues that auctions lead to greater target returns than negotiations, Bulow and Klemperer (1996, p.181) advocate a policy that does not allow lock-up agreements. Our empirical tests provide evidence as to the desirability of such a policy.

To structure our analysis, Section 1 discusses the theoretical models that make predictions about the wealth effects of auctions and negotiations in corporate takeovers. Section 2 distinguishes our research by contrasting the public takeover process that has been the emphasis of prior empirical work with the private takeover process that forms the basis for our analysis. Section 3 describes our sample. Section 4 compares the wealth effects for targets choosing auctions versus negotiations in the (-1,+1) window around the initial announcement of the takeover. Section 5 reports similar comparisons of the effects of auctions versus negotiations for longer event windows. The final section summarizes our analysis and discusses some implications of our results.

## **1. Auctions versus Negotiations: Theory and Empirical Predictions**

Table 1 sketches the models that consider the effect of the sales process on target returns. Bulow and Klemperer (1996) model the proceeds received by a target firm in an auction with many bidders versus a negotiation with a single bidder. Their model contrasts the competitive effect of the auction with the bargaining power associated with negotiation. Their theoretical results conclude that the revenue enhancement from competition dominates any bargaining power effects. Their model predicts that the returns to a target will be greater in an auction than in a negotiation.

In contrast to Bulow and Klemperer (1996), several other models suggest that there is no clear dominance in auctions over negotiations. These models capture the point first made by Coase (1937, p. 392) that “the operation of a market costs something.” Given the costs of operating auctions, the net gains to auctions and negotiations may be similar. Moreover, there may be firm and industry characteristics that affect the choice of auctions versus negotiations.

French and McCormick (1984) and Hansen (2001) provide models of the sales process that focus on different aspects of information that are not modeled by Bulow and Klemperer (1996). Hansen (2001) notes that one cost of selling the firm is the revelation of proprietary information to rivals. French and McCormick (1984) incorporate the point that the selling firm ultimately bears the cost of information gathering in the sales process. Both models conclude that the number of bidders will be endogenously chosen by the target firm, with the chosen number reflecting a trade-off between competition and information costs. In contrast to Bulow and Klemperer (1996), the models of French and McCormick (1984) and Hansen (2001) predict that the returns to targets will be the same for auctions and for negotiations.

French and McCormick (1984) also make predictions as to when a selling firm will choose to use an auction or a negotiation. They argue that the choice will be a function of the relative costs and benefits of auctions and negotiations. French and McCormick (1984, p.432) predict that a seller will be more likely to rely on a negotiation when there is low dispersion in the value of the firm being sold, where value dispersion might be proxied by firm size or stock return variability. They also predict (p.433) that “an ongoing relationship between the owner and a potential buyer will tend to reduce the

negotiation costs and increase the probability that the owner will choose a negotiated sale.”

The asset liquidity model of Shleifer and Vishny (1992) also points to industry factors that can affect the choice of auctions versus negotiations. They note that government regulation can constrain some potential bidders in purchasing a selling firm. Hence, selling firms in regulated industries may be less likely to rely on auctions.

Because the choice of the sales procedure by the target firm may endogenously respond to factors such as firm size and regulation, care must be taken in estimating the difference in returns between auctions and negotiations. In our empirical analysis, we employ a variety of estimation techniques including two-stage least squares to test the models reported in Table 1. Our empirical approach resembles Hansen’s (1986) analysis of the revenue equivalence in sealed bid versus open auctions and Smith’s (1987) estimation of the proceeds received in competitive versus negotiated securities offerings.

## **2. What is a Takeover Auction?**

To test the predictions of the models sketched in Table 1, we classify takeovers into auctions and negotiations. As described in detail in Section 3 of the paper, our classifications come from a review of the private takeover process that is reported in the merger documents filed with the U.S. Securities and Exchange Commission. Our emphasis on the private takeover process differs from most of the extant research in financial economics that tends to focus on the public aspects of takeovers. Because the basis for our analysis differs from prior research, this section contrasts the classification of auctions and negotiations in the public and private takeover process.

### *2.1. The Public Takeover Process*

Much of the existing research on takeovers in financial economics focuses on the public takeover process following the announcement of an initial bid. Such an emphasis likely stems from the assumption made in both theoretical (e.g., Roll (1986)) and empirical (e.g., Schwert (1996)) research that the takeover process is initiated by the bidding firm.

Given the assumption that the bidder initiates the takeover, it is somewhat problematic as to whether takeovers fit the typical auction setting. Consider the treatment of “auctions and takeovers” in The New Palgrave Dictionary of Economics and the Law (Cramtom, 1998, p.122):

Takeover auctions differ from traditional auctions in important respects. In a traditional auction, the seller describes what is being sold and states the auction rules in a public announcement. Takeover auctions are instead prompted by a potential buyer. Only after a buyer has expressed an interest in the target are bids from others sought.

In the analysis of the public takeover process, the standard classification of an auction is a takeover with more than one publicly announced bidder. Schwert (1996, 2000) explicitly uses such auction terminology in his analysis. Recent work by Moeller, Schlingemann, and Stulz (2002) similarly classifies the competitiveness of a takeover based on the number of public bidders.

Although the existing empirical research on corporate takeovers focuses attention on the public takeover process, many authors acknowledge that substantial bargaining occurs prior to the public announcement of a takeover. Comment and Jarrell (1987, p.285) report that even in the hostile environment of the 1980s, half of the tender offers in

their sample had been negotiated prior to announcement. Jennings and Mazzeo (1993) and Schwert (2000) observe that the competition and bargaining of many of the deals that they study evolved without publicity. Moeller, Schlingemann, and Stulz (2002) note that their measure of competition in takeovers does not include any private competition prior to public announcement of a bid. The next section indicates the importance of the private takeover process that occurs prior to the public announcement of a bid.

### *2.2. The Private Takeover Process*

Although the public takeover process may not fit the typical auction setting, the mechanics of the private takeover process often unfold as a formal auction. Herzel and Shepro (1990) present legal background on the private takeover process. Wasserstein (2000) provides some examples of takeover auctions during the 1980s and 1990s.

Hansen (2001) provides a concise model of a formal private takeover auction. The process begins when a selling firm hires an investment banker and considers the number of potential bidders to contact. The potential bidders that are contacted are asked to sign confidentiality/standstill agreements where the bidder receives non-public information but must agree not to make an unsolicited bid. Those agreeing to sign the confidentiality/standstill agreements are then asked to submit preliminary indications of interest. A subset of the bidders indicating preliminary interest are asked to submit binding sealed offers. Ultimately, the winning bidder is determined.

Hansen (2001) notes that the depth of the auction is a choice variable for the selling firm. Indeed, the selling firm may opt to negotiate with only a single bidder. Moreover, the selling firm sometimes must decide how to respond to unsolicited bids –

the selling firm can choose to negotiate with the unsolicited bidder or instead seek other bidders in an auction.

As we describe in detail in the next section, our analysis of the private takeover process confirms both the complexity and the variety of the procedures suggested in Hansen's (2001) model. We find examples of formal auctions where a number of potential bidders are contacted by the selling firm in a structured bidding process. We also find examples of informal auctions where several possible bidders are contacted, but the bidding evolves in a less structured basis than a formal auction. Finally, we find examples of negotiations where the selling firm contacted only one bidder.

Table 2 provides examples of the auctions (formal and informal) and negotiations used in corporate takeovers. Blount Inc. provides an example of a formal auction. On August 26, 1998, Blount contacted its investment bank, the Beacon Group, to consider strategic alternatives, including a possible sale of the firm. After deciding that a sale of the firm was the best alternative, the Beacon Group contacted 65 potential buyers. Of those originally contacted, 28 signed confidentiality agreements in which the potential bidder received non-public information but also signed a standstill agreement that prevented an unsolicited bid. At the end of the process, two firms made private written bids for Blount, and Lehman Brothers was the successful bidder. A rumor of the takeover was mentioned in the financial press on March 3, 1999, and the deal was signed on April 18, 1999. The deal between Blount and Lehman Brothers was publicly announced on April 20, 1999, and was completed on August 19, 1999.

Atlantic Richfield provides an example of an informal auction. On December 1, 1998, the firm retained Salomon Smith Barney and Goldman Sachs to advise on

alternatives including a potential merger transaction. As part of this process, the CEO of Atlantic Richfield contacted the head of BP Amoco to consider a possible transaction. Atlantic Richfield was also contacted by another major oil company, denoted as “Company A” in the merger documents. Both BP Amoco and Company A made a written bid for Atlantic Richfield and BP Amoco was the successful bidder. A rumor of the pending merger was mentioned in the press on March 29, 1999, and the agreement was signed on March 31, 1999. The deal between Atlantic Richfield and BP Amoco was announced in the press on April 2, 1999, and was completed on April 18, 2000.

BankBoston provides an example of a negotiation. On April 1, 1998, the CEO of BankBoston met with the CEO of Fleet Financial to discuss a possible merger. The two firms conducted extended, private discussions, during which BankBoston did not contact any other potential bidders. The merger agreement was signed on March 14, 1999, and was publicly announced the following day. The merger was completed on October 1, 1999.

The three examples in Table 2 confirm both the use of auctions in takeovers as well as the variety of methods by which firms are sold. Moreover, the information in Table 2 indicates the importance of studying the private takeover process when classifying a given takeover as an auction or a negotiation. Indeed, using the standard classifications based on the public takeover process, no deal in Table 2 would be classified as an auction. By contrast, the information from the private takeover process indicates that two of the three targets were competitively auctioned to multiple potential bidders. The three examples in Table 2 indicate the usefulness of employing the details from the private takeover process to classify takeovers as either auctions or negotiations.

### **3. The Sample**

#### *3.1. Forming the Sample*

Our sample entails 400 takeovers that were announced in the 1989 to 1999 period. The bulk of the sample comes from the 381 acquisitions in Mulherin and Boone (2000). That paper began with the firms listed on the Value Line Investment Survey as of 1990 and tracked those that were acquired during the 1990 to 1999 period. The current sample loses 28 acquisitions from the other study due to missing data, with the main reason for missing data being incomplete or absent SEC merger documents on the sales process. However, the current sample gains 47 acquisitions that were completed in 2000. The sample includes 377 successful and 23 unsuccessful acquisitions.

For each acquisition, we reviewed the appropriate filings from the EDGAR system of the U.S. Securities and Exchange Commission (for acquisitions in 1993 and later) and LexisNexis and Laser Disclosure (for acquisitions in 1993 and earlier). Information on the details of the takeover process for each acquisition was obtained from the background section of filings such as 14A, 14D, DEFM 14A, DEFS 14A, and S-4. For related use of SEC merger documents, see DeAngelo's (1990) analysis of fairness opinions, Sanders and Zdanowicz's (1992) study of insider trading, and Burch's (2001) examination of a sub-sample of his merger lockup database.

From our review of the documents for all of the sample firms, we identified the following four key aspects of the private and public sales process:

1. the number of potential buyers contacted
2. the number of potential buyers signing confidentiality/standstill agreements
3. the number of potential buyers making written private bids

4. the number of potential buyers making public bids

To classify each acquisition as either an auction or a negotiation, we focused on the number of potential buyers contacted and the number of potential buyers signing confidentiality/standstill agreements. In an auction, multiple buyers were contacted and signed confidentiality agreements while in negotiations, the selling firm dealt exclusively with a single bidder.

In our initial classifications, we also stratified the auctions into two types: formal and informal. A formal auction is defined as a structured process where the rules are laid out in advance and the bidding proceeds in multiple rounds. An informal auction is a case where the selling firm contacted multiple potential buyers but where the bidding evolved in a less structured setting than a formal auction. While we report some separate statistics on formal and informal auctions, the empirical analysis focuses on a single auction category. In results not reported in the paper, we find that the use of a single auction category does not affect our results.

The nature of the information used to classify the deals was sketched in Table 2 and is reported in even greater detail by the three examples in the Appendix. Instron Corp. was sold by formal auction during which 49 potential bidders were contacted, 23 signed confidentiality agreements and the high bidder was Kirtland Capital Partners. Sonat Inc. was sold in an informal auction in which 5 potential bidders were contacted and also signed confidentiality agreements and the company was sold to El Paso Energy Corp. In the third example in the Appendix, Rubbermaid was sold in a negotiation with the Newell Company. The text in the Appendix is extracted directly from the SEC

EDGAR filings and provides illustrations of the richness of the information in the merger documents.

### *3.2. Summary of the Private and Public Sales Process*

Table 3 provides summary statistics of the steps in the private and public sales process for the sample firms. Panel A reports the data for the full sample. The average selling firm in the sample contacts nine potential bidders. Roughly four of these potential bidders sign confidentiality agreements. On average, 1.29 firms make a formal written private offer for the selling firm. For the large majority of firms in the sample, only a single bidder makes a public offer for the selling firm. The average of 1.13 public bidders reflects the fact that only 51 of the 400 sample mergers had more than one public bidder. The tendency toward only a single public bidder in our sample from the 1990s is consistent with evidence reported in Andrade, Mitchell and Stafford (2001, Table 1).

Panel B of Table 3 indicates that the depth of the bidding process varies between auctions and negotiations. For the 202 takeovers classified as auctions, an average of 21 potential buyers were contacted and, on average, roughly 7 potential buyers signed confidentiality/standstill agreements. On average, 1.57 bidders made private written offers and 1.24 bidders made public bids. As noted in the sub-headings, the average number of potential bidders is generally greater for formal auctions as compared with informal auctions.

For the 198 acquisitions classified as negotiation, the selling firm as a rule dealt with only a single bidder. The average number contacted is slightly greater than one because there were some cases where preliminary discussions with a second firm did not

materialize or where an unsolicited offer was not considered by the selling firm. For all deals classified as negotiations, the selling firm signed a confidentiality agreement with only a single bidder and received only a single private written bid. The average number of public bidders for the negotiations is slightly above one due to some cases where a public, unsolicited offer was rebuffed by the selling firm.

In summary, in roughly half of the transactions, the selling firm entertained multiple potential bidders in an auction, either in a structured or less formal process. In the other half, the selling firm focused negotiations exclusively on a single potential bidder.

Table 4 reports the incidence of the sample transactions by announcement year. The year with the fewest transactions is 1989 while the year with the most transactions is 1997. In general, the transactions cluster in the second half of the sample period: two-thirds of the transactions in the sample are announced in the 1995 to 1999 period. Both auctions and negotiations have a similar distribution over time.

### *3.3. Sample Statistics*

Table 5 reports various attributes of the sample firms. Panel A presents information on target and bidder size. The mean (median) equity value of the target firms in the sample is \$2.69 (\$0.69) billion, a relatively large value which reflects the fact that the sample comes from firms listed on the Value Line Investment Survey. Bidders in the sample are larger than targets, having a mean (median) equity value of \$10.58 (\$3.41) billion. The mean (median) target has an equity value that is 56% (27%) of the equity

value of the bidder. Note that the estimates for bidder and relative size are for the 308 takeovers where the bidder was a U.S. publicly traded corporation.

The size of the targets varies between auctions and negotiations. Targets in auctions have a mean equity value of \$1.68 billion, while targets in negotiations have a mean equity value of \$3.72 billion. A simple probit regression of the choice of negotiation or auction on target equity value indicates a significant difference in target size (p-value = 0.005). Assuming that larger firms are less risky, this difference in target size between auctions and negotiations is consistent with a prediction in French and McCormick's (1984) model that negotiations will be used when the selling firm has a lower dispersion in value.

As reported in Panel A of Table 5, the average size of the bidding firms is also larger in negotiations than in auctions. The mean bidder size is \$13.81 billion in negotiations and is \$6.94 billion in auctions and a simple probit regression of negotiation versus auction on bidder equity value indicates a significant difference in bidder size (p-value = 0.004). By contrast, there is no significant difference in the relative size of targets to bidders between auctions and negotiations. The coefficient in a simple probit regression of negotiation or auction on relative size has a p-value of 0.446.

Panel B of Table 5 reports information on deal characteristics. For the full sample, 37 percent of the takeovers exclusively use cash while the remaining 63 percent use some or all stock in the transaction. Tender offers are employed in 26 percent of the cases while the remaining takeovers are done via merger. The data indicate differences in deal characteristics between auctions and negotiations. Auctions are more likely to pay cash and to employ a tender offer.

Panel B of Table 5 also reports information on the fraction of deals that are unsolicited, where we use SEC merger documents to define “unsolicited” as takeovers that were initiated by the bidder or a third party, either privately or publicly. For the full sample, we find that 15 percent of the takeovers are unsolicited. There is a difference in the unsolicited transactions between auctions and negotiations; 22 percent of the auctions are unsolicited as compared with only 8 percent of the negotiations. Hence, a common reaction to an unsolicited offer is to conduct an auction to solicit bids from other potential buyers.

Panel C of Table 5 reports several other characteristics of the target firms. The first variable is the fraction of firms from regulated industries, which we define to include the following Value Line industries: Bank, Bank Midwest, Broadcasting/Cable TV, Electric Utility, Environmental, Natural Gas Distribution, Telecommunications, and Thrift. For the full sample, 28 percent of the target firms come from regulated industries. Regulated targets are more likely to use a negotiation rather than an auction, which is consistent with the model of Shleifer and Vishny (1992).

The second variable in Panel C of Table 5 reports the fraction of target firms that have an ownership affiliation with the bidding firm. Ownership affiliation was determined by searching SEC documents. The target and bidder firms with an ownership affiliation include publicly traded subsidiaries of parent firms as well as other corporations with a longstanding ownership relation and comprise 7 percent of the sample. For this sub-sample with an affiliation, the mean (median) ownership interest by the bidder in the target is 54 percent (58 percent). The firms acquired via negotiation are more likely to have an ownership affiliation than are targets acquire via auction, which is

consistent with a prediction of French and McCormick's (1984) model that negotiation will be used when the bidder and target are in an ongoing relation.

The final variable in Panel C of Table 5 is the return standard deviation of the target firm, defined as the standard deviation of target stock returns in the period  $-317$  to  $-64$  days prior to the initial announcement of the takeover. The mean value of this variable is 0.023. Target firms acquired by auction have a greater return standard deviation than targets acquired via negotiation, which is consistent with the prediction by French and McCormick (1984) that negotiation will be used when the selling firm has a lower dispersion in value.

In summary, the data in Table 5 indicate that there are observable differences in the characteristics of the takeovers that are done by auction and that are done via negotiation. Such differences are consistent with models of the bidding process such as French and McCormick (1984). Because of these differences, our comparison of the wealth effects of auctions and negotiations that we report below will employ a variety of estimation techniques to control for the factors affecting both target returns and the choice of sales procedure.

#### **4. The Wealth Effects of Auctions and Negotiations: (-1,+1) Window**

In this section and the next, we provide empirical tests of the models in Table 1. We ask the basic question as to whether the wealth effects for targets differ between auctions and negotiations. We first make simple paired comparisons between auctions and negotiations and then control for other aspects of takeovers using multiple regression

and two-stage least squares. The analysis in this section focuses on returns estimated in the (-1,+1) event window. Section 5 will report results for longer event windows.

#### *4.1. Event Study Analysis*

Table 6 reports estimates of the wealth effects for the target firms in our sample. The estimates are net-of-market returns for the (-1,+1) window where day 0 is the initial announcement date and the market index is the CRSP value-weighted index. Results are reported for the full sample of 400 targets as well as for the 308 targets where bidder equity data are available.

Panel A of Table 6 reports the wealth effects for the full sample. The mean target returns for both the sample of 400 and the sample of 308 are roughly 20 percent and are statistically significant. These results for target returns resemble those in prior research such as Andrade, Mitchell, and Stafford (2001).

Panel B of Table 6 stratifies the results for auctions and negotiations. In both the sample of 400 targets and the sample of 308 targets, the mean return for both auctions and negotiations is roughly 20 percent. The paired t-tests in Panel C of Table 6 indicate no significant difference between the average target returns in auctions and negotiations. Referring back to Table 1, these results are consistent with the models of French and McCormick (1984) and Hansen (2001) and are inconsistent with the model of Bulow and Klemperer (1996).

#### *4.2. Multiple Regression Analysis*

While the paired t-tests in Table 6 offer an initial comparison of the wealth effects of auctions and negotiations, they do not control for other factors that affect the returns to targets. Prior research associates a number of variables with the stock returns around takeovers. These include the following four variables: (1) the relative size of the target (Jarrell and Poulsen (1989)), whether the deal used (2) cash or was a (3) tender offer (Huang and Walkling (1987)), and whether the deal was (4) unsolicited (Schwert (2000)). Since the summary statistics in Table 5 indicate that many of these variables differ between the auctions and the negotiations in our sample, we include them as control variables. Since we include relative size as an explanatory variable, the analysis studies the 308 takeovers with available bidder equity data. For target returns the question we ask is whether auctions and negotiations have any difference in wealth effects after controlling for other takeover characteristics.

The results of the multiple regression analysis are reported in Table 7. For comparison purposes, the first regression simply employs an intercept and a dummy variable for takeovers using auctions. Regressions 2 through 5 have the auction dummy and one of the other takeover variables. The final regression includes the auction dummy and each of the four other takeover characteristics.

In the simple regressions in Table 7, the signs of the coefficients of the other takeover characteristics resemble prior research. The negative and significant coefficient for relative size has been found by Jarrell and Poulsen (1989). The positive and significant coefficient for cash and for tender offers has been reported by Schwert (2000). Schwert (2000) also finds that some measures of unsolicited offers are positively related

to target returns. In the final regression in column (6) of Table 7, the coefficients of some of the other takeover characteristics lose their statistical significance, which is consistent with analysis of target returns by Huang and Walkling (1987).

Regardless of the specification for target returns, the coefficient on the auction dummy is not statistically significant. The results indicate that even after controlling for other takeover characteristics, there is no difference in the wealth effects for targets in auctions and negotiations. Consistent with the paired t-tests, the results support the models of French and McCormick (1984) and Hansen (2001).

#### *4.3 Two-Stage Regression Analysis*

The empirical analysis thus far in this section is somewhat naïve as it treats the choice of an auction or a negotiation as an independent variable explaining returns. However, the choice of the sales procedure in a given takeover will be a function of the expected returns. In this section, we present a more complete specification that accounts for the endogeneity between the choice of sales procedure and the wealth effects of the takeover for the target.

Our analysis follows a standard two-stage estimation process (Pindyck and Rubinfeld, 1981, Chapter 7). In the first stage, we regress the two dependent variables, target returns and sales procedure (i.e., auction or negotiation), on a set of exogenous variables. In the second-stage regressions, we use the fitted variable for a given dependent variable as an explanatory variable for the other dependent variable. In particular, we use a first-stage regression to estimate Procedure\*, the fitted value for the choice of sales procedure. We then analyze whether Procedure\* is significantly related to

target returns in the second stage regression. Since the regression for the sales procedure is a probit model, care must be taken in estimating the standard errors (Maddala, 1983, pp. 244-245). Our analysis uses STATA to provide the proper estimates (Keshk (2003)).

As exogenous variables in the model, we use both the deal characteristics that have been found by prior research to affect target returns around takeovers and the target characteristics that theory (e.g., French and McCormick (1984)) predicts will affect the choice of an auction or a negotiation in a takeover. The variables from prior research, presented in Table 7, are: the natural log of relative size, a cash dummy variable, a tender offer dummy variable, and an unsolicited deal dummy variable.

As additional variables, we include the natural log of target size, which provides a proxy for the prediction by French and McCormick (1984) that the choice of sales procedure will be a function of the value dispersion of a selling firm. We also include the three other target characteristics reported in Panel C of Table 5: a dummy variable for targets in regulated industries, a dummy variable for targets having an ownership affiliation with the bidder, and the return standard deviation of the target.

To identify the simultaneous system, we must exclude one exogenous variable from each of the two equations. For the target returns equation, for example, we must have a variable that explains stock returns but does not explain the choice of sales procedure. The variable that we use is the relative size of the target to the bidder. Prior research, as well as results in Table 7, indicate that relative size is significantly related to target returns. Evidence in Panel A of Table 5 indicates that relative size is not related to the choice of sales procedure.

For the sales procedure equation, we must have a variable that is related to the choice of an auction or a negotiation but not related to target returns. For this variable we use the size of the target firm. Panel A of Table 5 indicates that target size is significantly related to the choice of sales procedure. Prior research by Schwert (2000) indicates an inconsistent relation between target size and target returns. As reported below, in our empirical analysis target size is related to the choice of an auction or a negotiation but not related to target returns.

The results of our two-stage regressions are reported in Table 8. We report the first and second stage regressions for both target returns and the choice of sales procedure. In the model of the choice of sales procedure, we find that in the first-stage regression, target size is negatively and significantly related to the choice of an auction, while relative size has an insignificant coefficient. The signs of the coefficients of the other variables are similar to that suggested by the univariate analysis reported in Table 5; the dummy variables for cash and for unsolicited deals have significant coefficients. In the second stage regression, target size, the cash dummy, and the unsolicited dummy variable maintain their statistical significance.

In the first-stage regression for target returns, relative size has a negative and significant coefficient, consistent with the single equation analysis in Table 7. The coefficient for target size is not significantly different from zero. The unsolicited dummy has a positive and significant coefficient and the regulated dummy has a negative and significant coefficient. The coefficients of the other variables are not significantly different from zero.

Our main interest in the analysis of target returns is the coefficient on Procedure\*, the fitted value of the choice of sales procedure, in the second-stage regression. As reported in Table 8, the coefficient on Procedure\* is not statistically different from zero. Hence, after accounting for the endogeneity between the wealth effects for target firms and the choice of the sales procedure, the results indicate that there is no significant difference in the returns to targets in negotiations versus auctions. These results are consistent with the single-equation analysis and support the models of French and McCormick (1984) and Hansen (2001).

### **5. The Wealth Effects of Auctions and Negotiations: Longer Event Windows**

The relatively narrow (-1,+1) event window employed in Section 4 has the advantage of offering precision in the estimation of the market reaction to the initial announcement of a takeover (Fama (1991)). However, the narrow window may not necessarily capture all of the information that is revealed over the course of a particular takeover. Hence, as alternative estimates of wealth effects, we also compare target returns between auctions and negotiations for the (-20,+20) window as well as the (-63,+126) window that has been studied by Schwert (2000).

For these longer event windows, our analysis follows the same sequence and procedure as in Section 4. For a given event window, we report (i) paired t-tests, (ii) multiple regressions, and (iii) two-stage least squares. The estimates are net-of-market returns where day 0 is the initial announcement date of the takeover and the market index is the CRSP value-weighted index.

### *5.1 Auctions Versus Negotiations: (-20,+20) Event Window*

Table 9 reports the event study analysis for the (-20,+20) window. In Panel A, the mean target return is 25.4 percent for the sample of 400 takeovers and is 23.3 percent for the sample of 308 takeovers with available bidder equity data. These estimates are a few percentage points higher than the estimates for the (-1,+1) window reported in Table 6.

Panel B reports the estimates for the negotiation and auction sub-samples. The target return for auctions appears to be higher than that for negotiations. As reported in Panel C, the p-value in a paired t-test is 0.024 for the sample of 400 and is 0.098 for the sample of 308.

Table 10 uses multiple regression analysis to determine whether the difference in target returns between auctions and negotiations remains after controlling for relative size and deal characteristics. In the basic regression in column (1), the auction dummy variable has a significant coefficient, confirming the paired t-tests in Table 9. However, in the regressions in columns (2) through (5) that add a single relative size or deal characteristic as an explanatory variable, the coefficient on the auction dummy variable is no longer significant. Moreover, in the regression in column (6) that includes all four relative size and deal characteristics as explanatory variables, the coefficient on the auction dummy variable is also insignificant. Hence, controlling for relative size and deal characteristics, there is no observed difference in target returns between auctions and negotiations.

Table 11 reports two-stage regression analysis that controls for the endogeneity between expected returns and the choice of auction versus negotiation. Since the analysis resembles that previously reported in Table 8, we focus on the results for the second stage

of the target returns regressions. In this regression, the coefficient on relative size is negative and significant, as is the coefficient on the regulated dummy variable. The coefficients on the unsolicited dummy variable and return standard deviation are positive and significant.

Our main variable of interest is Procedure\*, the fitted variable for the choice of an auction versus negotiation. The coefficient on this variable is not statistically significant. Hence, after controlling for the factors that affect the choice between an auction and a negotiation, there is no measurable difference in target returns between the two sales procedures.

### *5.2 Auctions Versus Negotiations: (-63,+126) Event Window*

We next estimate target returns over the relatively lengthy (-63,+126) window that is used by Schwert (2000). The basic event study analysis is reported in Table 12. The magnitude of returns in Panel A resembles that found in Table 9 for the (-20,+20) event window. Also similar to Table 9, the paired t-tests in Panel C of Table 12 suggest a difference in target returns for the auction and negotiation sub-samples.

Table 13 reports multiple regressions for the (-63,+126) window that test whether the difference in returns between auctions and negotiations remains after controlling for relative size and deal characteristics. In the regressions in columns (2) through (4) that individually include relative size, a cash dummy or a tender dummy, the coefficient on the auction dummy variable maintains its statistical significance. However, the auction dummy is not significant in the regression in column (5) that individually adds the dummy variable for unsolicited deals. Moreover, in the regression in column (6) that

includes all four relative size and deal characteristic variables, the coefficient for the auction dummy variable is not statistically significant. Hence, after controlling for relative size and deal characteristics, there is no significant difference in target returns between auctions and negotiations.

Table 14 reports the two-stage regression analysis for the (-63,+126) window. Our main interest is in the second stage results for target returns. Similar to the results reported for the (-20,+20) window, relative size and the regulated dummy variable have negative and significant coefficients, while the unsolicited dummy and return standard deviation have positive and significant coefficients. The coefficient on Procedure\*, the fitted variable for choice of auction versus negotiation, is not significantly different from zero. Hence, after controlling for the endogeneity between the choice of sales procedure and expected returns, there is no difference in target returns between auctions and negotiations.

In summary, the results for this section using longer event windows resemble those in Section 4 that analyzed a narrow window around the takeover announcement. Although there was some evidence of differences in target returns between auctions and negotiations in the simple paired t-tests, these differences did not remain in multiple regressions that controlled for relative size and deal characteristics. Moreover, in two-stage regression analysis that controlled for the endogeneity between expected returns and the choice of sales procedure, there was no observed difference in the returns for auctions versus negotiations for estimates from either the (-20,+20) or the (-63,+126) event windows.

## **6. Summary and Implications**

Our analysis has provided a unique look at the auctions and negotiations used in the private takeover process. In a study of 400 takeovers during the 1990s, we find that half of the target firms are sold in an auction with multiple potential bidders and that the other half are sold in a negotiation with a single bidder. We also show that, consistent with models such as French and McCormick (1984), the choice of an auction or a negotiation in a particular takeover is related to characteristics such as target size and industry as well as the affiliation with the bidding firm.

Our analysis of target returns indicates that the wealth effects to targets are comparable in both auctions and negotiations. The results hold for both single-equation analysis as well as two-stage regressions that control for the endogeneity between takeover returns and the choice of sales procedure. The results are consistent with the models of French and McCormick (1984) and Hansen (2001) that argue that the choice of an auction or a negotiation in a particular takeover reflects a trade-off between competition and information costs.

Our results have important policy implications for debates in corporate law. Analysis by legal scholars such as Easterbrook and Fischel (1982) and Bebchuk (1982) has proposed policies ranging from an outright ban on corporate auctions to a mandatory prescription for auctions in corporate takeovers. Our findings of similar returns for auctions and negotiations support Macey's (1990) argument that there should not be any particular sales procedure imposed by the courts.

Our analysis of target returns is also pertinent to the related legal discussion of the use of termination fees and lock-up options in corporate takeovers. Legal scholars such as Coates and Subramanian (2000) express concern that such lock-up arrangements may inhibit auctions in corporate takeovers and thereby harm the shareholders of target companies. Similarly, based on the prediction of greater returns from auctions in their model, Bulow and Klemperer (1996, p.181) argue against lock-up agreements. Our results of comparable returns to targets from auctions and negotiations temper such concerns about the use of lock-up arrangements in corporate takeovers.

Our analysis of auctions and negotiations is also quite relevant to issues in areas of corporate finance outside of the corporate takeover setting. In the area of bankruptcy, for example, there has been a longstanding debate as to whether auctions should be mandatory for the corporate reorganization process (see, e.g., Baird (1993) and Jackson (1993)). Similarly, recent research (e.g., Sherman (2002)) has asked why auctions are not more prevalent in initial public offerings. Our findings indicate that auctions do not always dominate in a corporate takeover setting and suggest that the design of contracts and procedures across the spectrum of corporate finance are shaped by information and transaction costs.

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## **Appendix. Detailed Examples of the Sales Process.**

This Appendix provides detailed examples of the sales process for Instron (formal auction), Sonat (informal auction), and Rubbermaid (negotiation).

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### Instron Corp (1999)

DEFS14A Filing by Instron, July 23, 1999

Classification: Formal Auction

During the first quarter of calendar 1998, management and the Instron Board began to actively consider the various alternatives by which Instron might enhance long-term shareholder value... in the second calendar quarter of 1998, the Instron Board sought to engage a financial advisor...

On June 8, 1998, representatives of The Beacon Group met with James M. McConnell, the Chief Executive Officer and President of Instron, and Linton A. Moulding, the Chief Financial Officer of Instron, and discussed in general terms various alternatives pursuant to which Instron might enhance shareholder value and create options for increasing stockholder liquidity... Thereafter, on July 10, 1998, the Instron Board retained The Beacon Group to act as its financial and strategic advisor.

On August 11, 1998, the Instron Board held a meeting at which representatives of The Beacon Group advised the Instron Board with respect to a range of strategic alternatives that might be available to Instron to enhance shareholder value and provide stockholders with greater liquidity... the Instron Board determined that a potential sale of Instron was the alternative that would most likely allow Instron to satisfy the objectives of increasing shareholder value and providing liquidity to all of the Instron stockholders.

Following the Instron Board's decision to explore a potential sale of the Company, The Beacon Group recommended at the August 11, 1998 Instron Board meeting that Instron implement a multi-step process in order to solicit potential bids. The first step would be a broad marketing effort designed to attract as wide and competitive a field of interested parties as possible. The second step would be to seek more specific proposals from a smaller group of interested parties, whose offers would be evaluated based upon such criteria as price, form of consideration and certainty of consummation of a transaction. Pursuant to this bidding process, the smaller group of interested parties would submit competing proposals to acquire Instron. As the third step, Instron would enter into exclusive negotiations concerning a definitive agreement with the party whose bid would be most likely to provide the best value for the Instron stockholders. According to The Beacon Group, this process was preferable to other alternatives, such as negotiating only with one party throughout the process, because in a competitive bidding process parties were more likely to submit their highest bid to avoid being outbid by a competing party.

Following the August 11, 1998 Instron Board meeting, The Beacon Group began the process of soliciting the interest of 49 parties in merging with or acquiring Instron

("Phase I"). These potential buyers were comprised of certain private companies, strategic buyers and financial buyers... These potential buyers were asked to execute a confidentiality agreement before The Beacon Group would be permitted to distribute confidential information packages regarding Instron to such potential buyers. A total of 23 potential buyers executed confidentiality agreements and received confidential information packages. In connection with the distribution of the confidential information packages, these potential buyers were asked to submit indications of interest concerning a possible business combination or acquisition transaction with Instron not later than the end of the first week of January 1999... At the end of Phase I, The Beacon Group received ten preliminary indications of interest from potential buyers who had received confidential information packages.

After receiving these ten indications of interest, Instron directed The Beacon Group to invite the five potential buyers which either in their bids or in conversations with The Beacon Group, had indicated a willingness to pay a significant premium to the then current trading price of the Instron Common Stock, to participate in the next phase of the bidding process ("Phase II")... The Beacon Group requested that each of the Phase II Bidders submit, on or about February 19, 1999, a formal proposal specifying an estimated price that such bidder might be willing to pay to the Instron stockholders...

In connection with the Phase II process, only two of the five Phase II Bidders submitted written proposals. Kirtland's Phase II Proposal expressed an interest in pursuing a leveraged recapitalization merger with Instron pursuant to which substantially all of the Instron stockholders would receive cash in the merger at an estimated price per share of \$22.00... The other Phase II Proposal was submitted by a Phase II Bidder that, like Kirtland, also was a financial buyer ("Bidder A"). Pursuant to its Phase II Proposal, Bidder A expressed an interest in pursuing a leveraged recapitalization merger with Instron at an estimated price per share of \$22.50.

At a meeting of the Instron Board held on March 10, 1999, the Instron Board formed the Special Committee, consisting of Mr. Young, Dennis J. Moore and John F. Smith, to consider and evaluate the two Phase II Proposals and any other proposals that might be received by Instron... Promptly following the meetings of the Instron Board and the Special Committee on March 10, 1999, The Beacon Group... invited the Bidders to participate in the third and final phase of the bidding process. In this regard, the Phase III Bidders were given the opportunity to perform extensive due diligence on Instron, including the examination of additional documentation requested by them or their financing sources, touring Instron's United States and European facilities and interviewing Instron's senior management... the Phase III Bidders were asked to complete due diligence and submit a final proposal to Beacon Group by April 5, 1999.

On April 5, 1999, The Beacon Group received final proposals from each of the Phase III Bidders... Kirtland's Phase III Proposal contemplated a recapitalization merger pursuant to which the Instron stockholders would receive \$20.50 per share in cash... Bidder A's Phase III Proposal also contemplated a recapitalization merger pursuant to which the Instron stockholders would receive \$20.00 per share in cash.

On April 7, 1999, the Special Committee met to discuss the Phase III Proposals submitted by Kirtland and Bidder A... certain members expressed disappointment at the reduced pricing of the two proposals... Following a discussion by the Special Committee, the Special Committee concluded that neither of the Phase III proposals should be accepted at the current time and that The Beacon Group should extend the bidding process over the next several weeks. The Special Committee decided that, during this time, the two Phase III Bidders would be asked to reconsider their proposed pricing and that The Beacon Group would contact certain potential strategic buyers who had been contacted earlier in the process, but who had not been interested at that time in exploring a possible transaction with Instron.

On April 13, 1999, representatives of Kirtland met with Messrs. McConnell and Moulding and representatives of The Beacon Group... After significant discussions and negotiation, Kirtland increased its proposed cash purchase price to \$22.00 per share... Following this meeting, The Beacon Group informed Bidder A that its proposed bid of \$20.00 was no longer competitive and that to remain competitive in the bidding process it would have to increase the price of its bid significantly... On April 14, 1999, Bidder A informed The Beacon Group that it continued to have an interest in pursuing a transaction with Instron, but that it would not increase its price beyond \$20.50 per share.

On April 15, 1999, the Special Committee held a meeting to discuss the status of the Phase III Proposals... Following this discussion and a review of the terms and conditions of the Revised Kirtland Phase III Proposal and Bidder A's Phase III Proposal, the Special Committee concluded that it was desirable to proceed with Kirtland rather than Bidder A because Bidder A was not willing to increase its price beyond \$20.50 per share while Kirtland was willing to proceed with a transaction at \$22.00 per share... On April 20, 1999, Instron and Kirtland entered into an exclusivity agreement (the "Exclusivity Agreement") pursuant to which the parties agreed to negotiate exclusively with each other until April 30, 1999.

On May 4, 1999, the Special Committee and the Instron Board held meetings to consider the Merger Agreement and the Transactions... Following a discussion by the Special Committee, the Special Committee unanimously recommended that the Instron Board approve the Merger Agreement and the Transactions and that the Instron Board recommend that the Instron stockholders approve the Merger Agreement... Immediately following the May 4, 1999 meeting of the Special Committee, the Instron Board met to discuss the approval of the Merger Agreement and the Transactions... Following a discussion by the Instron Board, the Instron Board approved the Merger Agreement and the Transactions...

The parties finalized negotiations of the terms of the Merger Agreement and the related agreements during the period of May 4 to May 6, 1999. On the evening of May 6, 1999, the Merger Agreement and the related agreements were executed. On May 7, 1999, Instron and Kirtland jointly issued a press release announcing the proposed transaction.

Sonat Inc (1999)

DEFS14A Filing by Sonat, May 5, 1999

Classification: Informal Auction

At a meeting of the Sonat board in December 1998, Sonat reviewed with Merrill Lynch, Sonat's financial advisor, a variety of strategic alternatives. The Sonat board identified three alternatives that, in its view, were potentially attractive to Sonat and its stockholders: (1) remaining as a stand-alone company in its existing businesses, (2) a spin-off of Sonat's pipeline and marketing businesses with a subsequent merger of its remaining exploration and production business with a publicly-held company, and (3) a sale or merger of Sonat as a whole. Of these three alternatives, the Sonat board believed that the sale or merger of the company as a whole would generate the highest value to its stockholders. In connection with a possible sale or merger, the Sonat board concluded that, from a negotiating standpoint, it would be preferable for parties interested in entering into a business combination with Sonat to initiate discussions with Sonat, rather than vice versa. As a result, Sonat did not initiate a dialogue with potential merger candidates at that time.

On January 29, 1999, William A. Wise, Chairman of the Board, President and Chief Executive Officer of El Paso, telephoned Ronald L. Kuehn, Jr., Chairman of the Board, President and Chief Executive Officer of Sonat, to propose a meeting.

In late January 1999, in addition to El Paso, another company had independently contacted Sonat with an interest in a possible merger. With these expressions of interest, Sonat made a decision to explore a possible business combination. For disclosure and other business reasons, Sonat decided not to pursue an open public auction. Instead, it initially decided to work with El Paso and the other company.

In February 1999, three other companies contacted Sonat as to their respective interests in a business combination with Sonat. Certain other companies with lesser business fits also expressed interest, but it was decided that discussions with these parties should be postponed until after the positions were known of the five companies that had better business fits and had already shown an interest in a combination with Sonat.

During February, following the execution of confidentiality agreements with each of the five interested companies, including El Paso, financial forecasts were exchanged and due diligence meetings were held with each of the companies.

On February 26, 1999, El Paso submitted to Sonat a written proposal for a transaction with a 0.95 exchange ratio and Messrs. Kuehn, Wise, Gordon and Eads met in Houston. ... Mr. Kuehn stated that an exchange ratio of less than one-to-one was not acceptable to Sonat. Mr. Wise indicated that El Paso would consider increasing its proposed exchange ratio to one-to-one. Mr. Kuehn stated that other parties had expressed interest in a business combination with Sonat, and that the Sonat board would meet on March 11, 1999 to consider proposals submitted by all of the parties and review its strategic options. Mr. Wise requested that Sonat afford El Paso access to more detailed due diligence

information and proposed that El Paso would submit a draft merger agreement to Sonat. After this discussion, Messrs. Kuehn and Wise agreed to conduct mutual due diligence during the week of March 1, 1999 in Houston. Mr. Kuehn also agreed that Sonat's counsel would review El Paso's draft merger agreement.

On March 5, 1999, the other four parties submitted proposals to Sonat, one of which was immediately dismissed on the basis of an unacceptably low value.

On March 6, 1999, Mr. Wise telephoned Mr. Kuehn. Mr. Kuehn indicated that Sonat had received a number of proposals, and that three of the proposals, including El Paso's proposal, were comparable in many respects.

On March 11 and 12, 1999, the Sonat Board met to discuss, among other things, the proposed merger with El Paso, as well as the status of the other proposals received by Sonat with respect to a potential business combination or similar transaction... The Sonat board concluded that a business combination with El Paso would have benefits ... including providing Sonat's stockholders with the highest notional and normalized value per share.

On March 12, 1999, the El Paso board met in Houston to review the proposed merger. Following presentations by El Paso's management, Donaldson, Lufkin & Jenrette and Fried Frank, the El Paso board unanimously voted to approve the merger agreement...

On March 13, 1999, the Sonat board met telephonically to consider the proposed merger with El Paso. Merrill Lynch, as Sonat's financial advisor, rendered an oral opinion, which was subsequently confirmed in writing, that, as of the date of that meeting and based upon and subject to the matters stated in the written fairness opinion, the consideration to be received by Sonat stockholders in the merger was fair to the stockholders from a financial point of view. After considering the various factors relating to the four proposals that had been discussed at the March 12 board meeting, the Sonat board concluded that a merger with El Paso was preferable to any of the other proposals or either of the two other alternatives identified and discussed at the December 1998 Sonat board meeting... After further discussion and consideration, the Sonat board approved the merger agreement, the merger and all of the related transactions.

... the merger agreement, the stock option agreements and the voting agreements were executed on March 13, 1999. The execution of the merger agreement and the related agreements was publicly announced by the parties on March 15, 1999.

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## Rubbermaid (1998)

S-4 Filing by Newell, February 4, 1999

Classification: Negotiation

In light of Rubbermaid's 1997 financial performance, Rubbermaid's management was requested to review strategic alternatives at the January 1998 meeting of the Rubbermaid Board... By late summer 1998, Rubbermaid's management had become increasingly concerned about the impact of the accelerating trend of customer and supplier consolidation on Rubbermaid's ability to achieve superior financial performance as an independent company... Management thereafter engaged Goldman, Sachs & Co. and Jones, Day, Reavis & Pogue to act as Rubbermaid's financial and legal advisors, respectively, in connection with the meeting and any actions or transactions resulting from the meeting.

On September 29, 1998, Rubbermaid's management and the Rubbermaid Board met to discuss management's concerns regarding Rubbermaid's future and certain potential strategic alternatives... Goldman Sachs reviewed certain financial and strategic alternatives available to Rubbermaid, including maintaining Rubbermaid's current course as an independent company and the prospects of a potential strategic merger... In the course of these discussions, management indicated that Newell was an attractive merger partner in part because of the great synergy potential between the companies and because Newell had previously expressed interest in pursuing a strategic merger with Rubbermaid... As a result of these discussions, the Rubbermaid Board determined that Newell was the most attractive potential merger partner...

On September 29, following the meeting, Rubbermaid, through Goldman Sachs, initiated contact with Newell and commenced preliminary discussions regarding a possible strategic merger. On October 1, 1998, Newell's management informed the Newell Board of these discussions, and Newell engaged Robert W. Baird & Co. Incorporated and Schiff Hardin & Waite to act as Newell's financial and legal advisors, respectively, in connection with this possible transaction. On October 2, 1998, Newell and Rubbermaid executed a confidentiality agreement. After that time, Newell and Rubbermaid provided each other with information relating to business, financial, legal, tax and accounting matters.

On October 10, 1998, Newell made an initial stock-for-stock acquisition proposal to Rubbermaid valued at \$30 to \$32 per share of Rubbermaid common stock, based on the then current price of Newell common stock. That proposal was not accepted. After that time, representatives of Newell and Rubbermaid continued to negotiate to seek an acceptable exchange ratio. On October 12, 1998, the Rubbermaid Board again met telephonically for an update of the discussions with Newell... Rubbermaid's position was that the exchange ratio should value Rubbermaid at not less than \$40 per share based on the pre-announcement price of the Newell common stock. On October 15, 1998, after Newell indicated that it was not willing to base the exchange ratio on a value above \$36 per share, Rubbermaid terminated negotiations.

On October 16, 1998, in light of the termination of discussions with Newell, Rubbermaid, through Goldman Sachs, began to contact other companies that might be interested in pursuing a business combination with Rubbermaid.

On October 17, 1998, Newell and Rubbermaid reopened negotiations. After extensive discussions, Newell and Rubbermaid reached a tentative agreement, subject to negotiation of definitive documentation and requisite board approvals, on a preliminary exchange ratio of 0.7883 shares of Newell common stock for each share of Rubbermaid common stock. The merger exchange ratio was calculated so that it would provide a value of \$37 per share of Rubbermaid common stock based on the \$46 15/16 closing price per share of Newell common stock on October 16, 1998, the last available trading date. On this basis, the merger exchange ratio represented a premium of 46.5% for Rubbermaid's stockholders.

On October 19, 1998, the Rubbermaid Board held a meeting to review the proposed terms of the merger... Goldman Sachs presented an analysis of the financial terms of the merger, including a discussion of valuation methodologies and analyses used in evaluating the proposed transaction. After its presentation, Goldman Sachs provided an oral opinion to the effect that, on the date of its opinion and based upon and subject to the various considerations set forth in its opinion, the merger exchange ratio was fair from a financial point of view to Rubbermaid's stockholders. Following a thorough discussion, the Rubbermaid Board unanimously determined that the merger was in the best interests of the stockholders of Rubbermaid and, subject to Newell's approval, approved the merger and the merger agreement, unanimously resolved to recommend that stockholders of Rubbermaid vote to adopt the merger agreement and authorized its executive officers to execute the merger agreement.

On October 20, 1998, the Newell Board met to review the proposed terms and conditions of the merger agreement... Baird presented an analysis of the financial terms of the merger, including a discussion of financial data and analyses used in evaluating the proposed transaction. After its presentation, Baird provided an oral opinion to the effect that, on the date of its opinion and based upon and subject to the various considerations set forth in its opinion, the merger exchange ratio of 0.7883 was fair, from a financial point of view, to Newell. Following substantial discussion, the Newell Board unanimously determined that the merger, the related issuance of Newell common stock in connection with the merger and the conversion of Rubbermaid options to Newell options were fair to and in the best interests of Newell and its stockholders.

On the evening of October 20, 1998, after approval of the Newell Board, the parties executed the merger agreement. Prior to the commencement of trading on October 21, 1998, Newell and Rubbermaid issued a joint press release announcing the execution of the merger agreement.

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**Table 1. Predictions on Auction versus Negotiation**

This table summarizes the theoretical predictions of the effect of auctions versus negotiations on target returns.

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Research Paper	Concept	Prediction
Bulow & Klemperer (1996)	Additional competition increases proceeds	Auction returns > negotiation returns
French & McCormick (1984) Hansen (2001)	Number of bidders endogenously chosen by target Balance of competition versus information costs	Auction returns = negotiation returns

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## Table 2. Examples of the Sales Process

This table provides examples of the auction and negotiation procedures by which firms are sold. *Formal Auction* refers to a structured bidding process by the selling firm and its investment bank. *Informal Auction* refers to a sales process in which more than one potential buyer was contacted but where the procedure was not as structured as a formal auction. *Negotiation* refers to a sales process focusing on a single buyer.

*Private Date* is the date on which the sales process begins. *Rumor Date* (if any) is the date on which the possibility of a merger is mentioned in the financial media prior to a formal agreement date. *Agreement Date* is the date on which the seller and bidder signed the merger agreement. *Merger Announce* is the date on which the merger agreement is reported in the financial media. *Completion Date* is the date on which the merger is completed. *Contact* refers to the number of potential bidders contacted by the seller and its investment bank. *Confidentiality* refers to the potential buyers that engaged in a confidentiality/standstill agreement. *Private Bidders* refers to the potential buyers that submitted a private written offer. *Public Bidders* refers to the potential buyers that announced a formal bid for the seller in the financial media.

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	<u>Formal Auction</u>	<u>Informal Auction</u>	<u>Negotiation</u>
Seller	Blount Inc	Atlantic Richfield	BankBoston
Bidder	Lehman Bros	BP Amoco	Fleet Financial
Initiation Event	Target contacts investment bank	Target considers alternatives	CEOs meet
Private Date	8/26/98	12/1/98	4/1/98
Contact	65	2	1
Confidentiality	28	2	1
Private Bidders	2	2	1
Public Bidders	1	1	1
Rumor Date	3/31/99	3/29/99	n/a
Agreement Date	4/18/99	3/31/99	3/14/99
Merger Announce	4/20/99	4/2/99	3/15/99
Completion Date	8/19/99	4/18/2000	10/1/99

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### Table 3. Summary of the Sales Process

This table summarizes the sales process for the sample of 400 takeovers. Panel A describes the sales process for the full sample. *Contact* reports the average number of potential buyers contacted by the selling firm and its investment bank. *Confidential* reports the average number of potential buyers that engaged in a confidentiality/standstill agreement. *Private Bidders* reports the average number of potential buyers that submitted a private written offer. *Public Bidders* reports the average number of potential buyers that announced a formal bid for the firm in the financial media.

In Panel B, the aspects of the sales process are reported for auctions and negotiations. *Auction* refers to cases where the selling firm contacted multiple potential buyers. *Formal* refers to auctions in which the firm and its investment bank conducted a structured bidding process. *Informal* refers to auctions in which the firm and its investment bank contacted multiple potential buyers in a less structured sales process. *Negotiation* refers to a sales process focusing on a single buyer.

Sample	Observations	Contact	Confidential	Private Bidders	Public Bidders
Panel A. The Full Sample					
Full Sample	400	9.49	3.75	1.29	1.13
Panel B. The Sample Categorized by Sales Process					
Auction	202	20.67	6.83	1.57	1.24
Formal	68	43.81	17.07	2.12	1.26
Informal	134	4.60	2.30	1.30	1.23
Negotiation	198	1.02	1	1	1.02

**Table 4. The Sample by Year**

This table reports the number of acquisitions per year for the sample period of 1989 to 1999. Observations are placed in the year of announcement. Data are reported for the full sample and for the two sales procedures: auction and negotiation.

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Year	Full Sample	Auction	Negotiation
1989	12	10	2
1990	34	16	18
1991	19	8	11
1992	21	11	10
1993	15	5	10
1994	30	16	14
1995	59	29	30
1996	39	20	19
1997	64	32	32
1998	61	26	35
1999	46	29	17
Total	400	202	198

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## Table 5. Sample Statistics

This table reports size, deal and target characteristics for the sample. The sample entails 400 acquisitions that were announced in the 1989 to 1999 period. Data are reported for the full sample and for auctions and negotiations. *p-value* is the p-value from a simple probit regression of the choice of method (i.e., auction versus negotiation) on the given variable.

Panel A reports firm size. Target and Bidder Size are mean (median) equity values in \$ billion, measured as (stock price \* shares outstanding), estimated 64 days prior to initial announcement. There are only 308 available observations for bidders because 92 bidders were non-U.S. corporations or were private companies. *Relative Size* is target equity value divided by bidder equity value and employs the 308 cases with bidder data.

Panel B reports deal characteristics. *Cash* reports the fraction of cases in which the payment was entirely in cash. *Tender* reports the fraction of cases in which the acquisition was by tender offer. *Unsolicited* reports the fraction of cases where the event was initiated by the bidder or a third party.

Panel C reports target characteristics. *Regulated* reports the fraction of cases in which the target was in a regulated industry. *Affiliated* reports the fraction of cases in which the bidder has an ownership affiliation with the target. *Return Std Dev* reports the standard deviation of target stock returns between days -317 to -64 prior to the initial announcement date.

Variable	Full Sample (N=400)		Auction (N=202)		Negotiation (N =198)		
Panel A. Firm Size	Mean	Median	Mean	Median	Mean	Median	p-value
Target Size (\$ bil)	2.69	0.69	1.68	0.37	3.72	1.07	0.005
Bidder Size (\$ bil)	10.58	3.41	6.94	3.03	13.81	4.01	0.004
Relative Size	56%	27%	46%	21%	66%	29%	0.446

**Table 5 (continued)**

Variable	Full Sample (N=400)	Auction (N=202)	Negotiation (N =198)	p-value
Panel B: Deal Characteristics				
% Cash	37%	50%	23%	0.000
% Tender	26%	37%	15%	0.000
% Unsolicited	15%	22%	8%	0.000
Panel C: Target Characteristics				
% Regulated	28%	22%	34%	0.005
% Affiliated	7%	4%	11%	0.011
Return Standard Deviation	0.023	0.024	0.022	0.038

**Table 6. Event Study Analysis: (-1,+1) Window**

This table reports event study returns for the full sample of 400 target firms and for the 308 cases where the bidder is a U.S. publicly traded firm and bidder equity value data are available. The results are net-of-market returns for the (-1,+1) window where day 0 is the initial announcement date and the market index is the CRSP value-weighted index. The p-value in Panel A and Panel B is for a t-test of the null that the mean return equals zero. Panel C presents paired t-tests that test that null that the mean of the two samples are equal. (p-values are in parentheses.)

Sample	Target Return [N=400]	Target Return [N=308]
Panel A. Full Sample: Mean Return (p-value)		
Full Sample	21.6% (0.000)	20.4% (0.000)
Panel B. Analysis by Sales Procedure: Mean Return (p-value)		
Negotiation	20.5% (0.000)	19.3% (0.000)
Auction	22.7% (0.000)	21.6% (0.000)
Panel C. Paired t-tests: t-statistic (p-value)		
Negotiation v. Auction	1.02 (0.308)	0.90 (0.368)

**Table 7. Multiple Regression Analysis: (-1,+1) Window**

This table reports regression analysis of target returns on variables for the sales procedure, relative deal size, the payment method and the acquisition form. *Auction* is a dummy variable equal to 1 when the sales procedure is an auction. *Relative Size* is the natural log of the equity value of the target divided by the equity value of the bidder 64 days prior to the initial announcement date. *Cash* is a dummy variable equal to 1 for acquisitions in which the payment is entirely in cash. *Tender* is a dummy variable equal to 1 when the form of the acquisition is a tender offer. *Unsolicited* is a dummy variable equal to one for deals that were initiated by the bidder or a third party. The regressions use the 308 acquisitions with available bidder equity data. The dependent variable in each regression is net-of-market returns for the (-1,+1) window where day 0 is the initial announcement date and the market index is the CRSP value-weighted index. The p-values of the regression coefficients are reported in parentheses.

Variable	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	0.193 (0.000)	0.133 (0.000)	0.179 (0.000)	0.184 (0.000)	0.185 (0.000)	0.123 (0.000)
Auction	0.023 (0.360)	0.008 (0.767)	0.003 (0.914)	0.008 (0.746)	0.004 (0.862)	-0.018 (0.480)
Relative Size	--	-0.047 (0.000)	--	--	--	-0.044 (0.000)
Cash	--	--	0.089 (0.002)	--	--	0.037 (0.407)
Tender	--	--	--	0.085 (0.009)	--	0.013 (0.791)
Unsolicited	--	--	--	--	0.105 (0.003)	0.090 (0.009)
Adj R <sup>2</sup>	0.000	0.076	0.027	0.018	0.026	0.103
Model p-value	0.360	0.000	0.006	0.022	0.007	0.000

**Table 8. Two-Stage Regression Analysis: (-1,+1) Window**

This table reports simultaneous equations analysis for target returns and for the choice of sales procedure. Returns are measured using net-of-market returns for the (-1,+1) window where day 0 is the initial announcement date and the market index is the CRSP value-weighted index. *Procedure\** is the predicted value of the choice of sales procedure. *Returns\** is the predicted value of returns. The analysis uses the 308 takeovers with available bidder equity data. (p-values are in parentheses.)

Variable	Target Returns		Sales Procedure	
	1st Stage	2nd Stage	1 <sup>st</sup> Stage	2nd Stage
Intercept	0.098 (0.481)	0.130 (0.002)	2.351 (0.010)	2.391 (0.015)
Procedure*		-0.014 (0.775)		
Returns*				-0.407 (0.818)
Relative Size	-0.037 (0.000)	-0.036 (0.000)	0.015 (0.819)	
Target Size	0.002 (0.776)		-0.182 (0.002)	-0.181 (0.001)
Cash	0.040 (0.360)	0.047 (0.367)	0.502 (0.081)	0.518 (0.092)
Tender	-0.014 (0.780)	-0.014 (0.775)	-0.020 (0.953)	-0.025 (0.940)
Unsolicited	0.084 (0.014)	0.093 (0.055)	0.676 (0.003)	0.710 (0.008)
Regulated	-0.072 (0.010)	-0.073 (0.010)	-0.082 (0.641)	-0.112 (0.624)
Affiliated	-0.042 (0.416)	-0.048 (0.402)	-0.464 (0.185)	-0.481 (0.178)
Return Std Dev	1.119 (0.396)	1.057 (0.394)	-4.598 (0.589)	-4.142 (0.641)
Adj R <sup>2</sup>	0.121	0.121	0.112	0.112
Model p-value	0.000	0.000	0.000	0.000

**Table 9. Event Study Analysis: (-20,+20) Window**

This table reports event study returns for the full sample of 400 target firms and for the 308 cases where bidder data are available. The results are net-of-market returns for the (-20,+20) window where day 0 is the initial announcement date and the market index is the CRSP value-weighted index. The p-value in Panel A and Panel B is for a t-test of the null that the mean return equals zero. Panel C presents paired t-tests that test that null that the mean of the two samples are equal. (p-values are in parentheses.)

Sample	Target Return [N=400]	Target Return [N=308]
Panel A. Full Sample: Mean Return (p-value)		
Full Sample	25.4% (0.000)	23.3% (0.000)
Panel B. Analysis by Sales Procedure: Mean Return (p-value)		
Negotiation	22.6% (0.000)	21.2% (0.000)
Auction	28.2% (0.000)	25.7% (0.000)
Panel C. Paired t-tests: t-statistic (p-value)		
Negotiation v. Auction	2.26 (0.024)	1.66 (0.098)

**Table 10. Multiple Regression Analysis: (-20,+20) Window**

This table reports regression analysis of target returns on variables for the sales procedure, relative deal size, the payment method and the acquisition form. *Auction* is a dummy variable equal to 1 when the sales procedure is an auction. *Relative Size* is the natural log of the equity value of the target divided by the equity value of the bidder 64 days prior to the initial announcement date. *Cash* is a dummy variable equal to 1 for acquisitions in which the payment is entirely in cash. *Tender* is a dummy variable equal to 1 when the form of the acquisition is a tender offer. *Unsolicited* is a dummy variable equal to one for deals that were initiated by the bidder or a third party. The regressions use the 308 acquisitions with available bidder equity data. The dependent variable in each regression is net-of-market returns for the (-20,+20) window where day 0 is the initial announcement date and the market index is the CRSP value-weighted index. The p-values of the regression coefficients are reported in parentheses.

Variable	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	0.212 (0.000)	0.134 (0.000)	0.196 (0.000)	0.200 (0.000)	0.202 (0.000)	0.122 (0.000)
Auction	0.045 (0.093)	0.026 (0.314)	0.022 (0.428)	0.027 (0.327)	0.022 (0.418)	-0.005 (0.857)
Relative Size	--	-0.062 (0.000)	--	--	--	-0.059 (0.000)
Cash	--	--	0.104 (0.001)	--	--	0.024 (0.614)
Tender	--	--	--	0.108 (0.002)	--	0.036 (0.490)
Unsolicited	--	--	--	--	0.133 (0.003)	0.114 (0.002)
Adj R <sup>2</sup>	0.006	0.117	0.038	0.033	0.042	0.155
Model p-value	0.093	0.000	0.001	0.002	0.001	0.000

**Table 11. Two-Stage Regression Analysis: (-20,+20) Window**

This table reports simultaneous equations analysis for target returns and for the choice of sales procedure. Returns are measured using net-of-market returns for the (-20,+20) window where day 0 is the initial announcement date and the market index is the CRSP value-weighted index. *Procedure\** is the predicted value of the choice of sales procedure. *Returns\** is the predicted value of returns. The analysis uses the 308 takeovers with available bidder equity data. (p-values are in parentheses.)

Variable	Target Returns		Sales Procedure	
	1st Stage	2nd Stage	1st Stage	2nd Stage
Intercept	0.048 (0.743)	0.094 (0.004)	2.351 (0.010)	2.365 (0.012)
Procedure*		-0.020 (0.698)		
Returns*				-0.301 (0.819)
Relative Size	-0.049 (0.000)	-0.049 (0.000)	0.015 (0.819)	
Target Size	0.004 (0.698)		-0.182 (0.002)	-0.181 (0.001)
Cash	0.030 (0.516)	0.040 (0.470)	0.502 (0.081)	0.511 (0.085)
Tender	0.014 (0.786)	0.014 (0.792)	-0.020 (0.953)	-0.015 (0.963)
Unsolicited	0.112 (0.002)	0.126 (0.014)	0.676 (0.003)	0.710 (0.009)
Regulated	-0.055 (0.057)	-0.057 (0.056)	-0.082 (0.641)	-0.100 (0.616)
Affiliated	-0.073 (0.181)	-0.082 (0.179)	-0.464 (0.185)	-0.486 (0.180)
Return Std Dev	2.732 (0.050)	2.642 (0.044)	-4.598 (0.589)	-3.775 (0.692)
Adj R <sup>2</sup>	0.180	0.180	0.112	0.112
Model p-value	0.000	0.000	0.000	0.000

**Table 12. Event Study Analysis: (-63,+126) Window**

This table reports event study returns for the full sample of 400 target firms and for the 308 instances where bidder data are available. The results are net-of-market returns for the (-63,+126) window where day 0 is the initial announcement date and the market index is the CRSP value-weighted index. The p-value in Panel A and Panel B is for a t-test of the null that the mean return equals zero. Panel C presents paired t-tests that test that null that the mean of the two samples are equal. (p-values are in parentheses.)

Sample	Target Return [N=400]	Target Return [N=308]
Panel A. Full Sample: Mean Return (p-value)		
Full Sample	26.2% (0.000)	25.1% (0.000)
Panel B. Analysis by Sales Procedure: Mean Return (p-value)		
Negotiation	21.8% (0.000)	20.9% (0.000)
Auction	30.6% (0.000)	29.9% (0.000)
Panel C. Paired t-tests: t-statistic (p-value)		
Negotiation v. Auction	2.81 (0.005)	2.67 (0.008)

**Table 13. Multiple Regression Analysis: (-63,+126) Window**

This table reports regression analysis of target returns on variables for the sales procedure, relative deal size, the payment method and the acquisition form. *Auction* is a dummy variable equal to 1 when the sales procedure is an auction. *Relative Size* is the natural log of the equity value of the target divided by the equity value of the bidder 64 days prior to the initial announcement date. *Cash* is a dummy variable equal to 1 for acquisitions in which the payment is entirely in cash. *Tender* is a dummy variable equal to 1 when the form of the acquisition is a tender offer. *Unsolicited* is a dummy variable equal to one for deals that were initiated by the bidder or a third party. The regressions use the 308 acquisitions with available bidder equity data. The dependent variable in each regression is net-of-market returns for the (-63,+126) window where day 0 is the initial announcement date and the market index is the CRSP value-weighted index. The p-values of the regression coefficients are reported in parentheses.

Variable	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	0.209 (0.000)	0.130 (0.000)	0.195 (0.000)	0.197 (0.000)	0.193 (0.000)	0.113 (0.000)
Auction	0.090 (0.008)	0.070 (0.032)	0.069 (0.047)	0.070 (0.040)	0.051 (0.126)	0.029 (0.385)
Relative Size	--	-0.062 (0.000)	--	--	--	-0.061 (0.000)
Cash	--	--	0.095 (0.016)	--	--	-0.013 (0.822)
Tender	--	--	--	0.114 (0.009)	--	0.050 (0.445)
Unsolicited	--	--	--	--	0.222 (0.000)	0.209 (0.000)
Adj R <sup>2</sup>	0.020	0.091	0.035	0.038	0.087	0.154
Model p-value	0.008	0.000	0.002	0.001	0.000	0.000

**Table 14. Two-Stage Regression Analysis: (-63,+126) Window**

This table reports simultaneous equations analysis for target returns and for the choice of sales procedure. Returns are measured using net-of-market returns for the (-63,+126) window where day 0 is the initial announcement date and the market index is the CRSP value-weighted index. *Procedure\** is the predicted value of the choice of sales procedure. *Returns\** is the predicted value of returns. The analysis uses the 308 takeovers with available bidder equity data. (p-values are in parentheses.)

Variable	Target Returns		Sales Procedure	
	1st Stage	2nd Stage	1st Stage	2nd Stage
Intercept	0.037 (0.840)	0.051 (0.363)	2.351 (0.010)	2.362 (0.012)
Procedure*		-0.006 (0.930)		
Returns*				-0.288 (0.819)
Relative Size	-0.052 (0.000)	-0.051 (0.000)	0.015 (0.819)	
Target Size	0.001 (0.930)		-0.182 (0.002)	-0.182 (0.002)
Cash	-0.001 (0.977)	0.001 (0.987)	0.502 (0.081)	0.501 (0.082)
Tender	0.040 (0.547)	0.040 (0.549)	-0.020 (0.953)	-0.008 (0.981)
Unsolicited	0.218 (0.000)	0.222 (0.001)	0.676 (0.003)	0.739 (0.038)
Regulated	-0.010 (0.780)	-0.011 (0.775)	-0.082 (0.641)	-0.086 (0.634)
Affiliated	-0.052 (0.447)	-0.055 (0.476)	-0.464 (0.185)	-0.479 (0.180)
Return Std Dev	4.100 (0.020)	4.074 (0.014)	-4.598 (0.589)	-3.418 (0.741)
Adj R <sup>2</sup>	0.166	0.166	0.112	0.112
Model p-value	0.000	0.000	0.000	0.000