MERGER RETURNS AND THE FORM OF FINANCING

Paul Asquith*
Robert F. Bruner**
David W. Mullins, Jr.*

*Harvard University
**University of Virginia

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ABSTRACT

Merger Returns and the Form of Financing

This study investigates the effect of merger bids on stock returns. The results demonstrate that the form of merger payment affects the markets reaction to an announcement. The bidding firm's returns are positive for cash bids and negative and significantly smaller for equity payment bids. This is consistent with recent findings that equity financings have a negative announcement effect on stock prices. Furthermore, the merger's size is important in expaining stock returns and the size effect is also related to the form of payment. Finally, differences between mergers initiated with a tender offer and those without a tender offer disappear once the form of payment is considered. The findings strongly suggest that two pieces of valuable information are simultaneously released during a merger bid; the value of the merger as an investment and the decision by the bidder on how to finance this investment.

Merger Returns and the Form of Financing

1. Introduction

Empirical research on the division of stock market gains from mergers have been a mainstay of the financial economics literature for over a decade [see Jensen and Ruback (1983) for a review]. While these studies have consistently documented that the target firms' shareholders realize large gains in successful merger bids, the results for bidding firms returns have been mixed. While most studies document small, statistically insignificant positive returns to bidding firms at least one, Dodd (1980), finds the bidding firms have a small, statistically significant negative return at the announcement of a merger bid. Jensen and Ruback (1983) summarize these findings on bidding firms by stating "The evidence suggests, however, that returns to successful bidding firms in mergers are zero."[1]

This result is not without challenge. Asquith, Bruner, and Mullins (1983) and Schipper and Thompson (1983) argue that returns to bidding firms may not be accurately measured in earlier studies and both present evidence supporting their arguments. Measurement problems may arise because of the relative sizes of bidders and target firms or because the stock market has already capitalized expectations about future merger bids into the bidding firm's stock price prior to any announced merger.

Asquith, Bruner and Mullins (1983) argue that the relative sizes of bidding and target firms may mask the gains to the bidding firm. The absolute gain associated with the acquisition of a small target firm by a large bidder may only produce a small abnormal return. For example,

if the gain accruing to the bidding firm is 5% of the target firm's equity value and if the bidder's equity value is ten times that of the target, only a 0.5% abnormal return will be observed. Testing for this over the first four mergers in a merger program, they find that the shareholders of bidding firms do benefit from a merger announcement.[2] Merger benefits, as measured by excess returns, are more observable when targets are large relative to bidders. Regression analysis finds that the size of the bidding firm's abnormal return is positively and statistically significantly related to the relative size of the target firm.

Moreover, returns to the bidding firm's shareholders may not be measured properly if the net present value of future mergers has already been capitalized into the bidding firm's stock price before the mergers are announced. Schipper and Thompson found evidence consistent with this hypothesis. They report significantly positive abnormal returns at the announcement of acquisitions programs which are unrelated to specific merger bids. This evidence is also consistent with the hypothesis that bidding firms' shareholders gain from merger.[3]

Other factors may prevent the returns to the bidding firms in a merger from accurately reflecting the value of the merger. One such factor is how the bidding firm finances the merger. Recent research shows that external financing affects firm values, and the impact differs according to the type of security issued (see Smith (1986) for a review). Consequently, the form of merger financing may have an impact on the bidding firm's share price independent of the investment value of the merger. Most event studies attempt to correct for other announcements and contemporaneous information to isolate the effects of a common event, such as a merger. All merger announcements simultaneously release information concerning an investment

decision (i.e. the firm to be acquired and the price to be paid) and a financing decision (i.e. where the acquisition price is to come from). If information on two decisions is released simultaneously, it is difficult to determine their separate impact. This is true of any investment decision when the market must analyze the source of financing and any financing decision where the market must interpret how the funds will be used.[4]

The objective of this paper is to investigate the impact of the form of merger financing on merger returns.[5] The findings confirm that the returns to both bidders and targets are affected by form of merger financing. Compared with cash financing, equity financing is associated with significantly smaller returns for both bidders and targets. The finding for bidders is consistent with the negative impact of equity issues and the findings for targets are consistent with investor tax advantages associated with stock mergers. Regression analysis documents a significant negative relationship between the bidders' returns and the size of equity financed mergers. A positive size effect is found for cash financed mergers. The results also are consistent with a positive investment value for mergers, and a negative financing effect associated with issuing equity.

Finally, the sample of merger bids is divided into those initiated with a tender offer and those initiated other ways, e.g. negotiations, open market purchases, etc. Previous empirical evidence on successful tender offers (again see Jensen and Ruback (1983)) shows that while target firm shareholders receive large statistically significant gains regardless of the form of acquisition, bidding firm shareholders do not. Unlike studies of merger bids where the measured returns to bidding firms have been small and either insignificantly positive or significantly negative, the returns

to bidding firms in successful tender offers have been small but significantly positive. The reason for this difference in bidder returns between tender offers and merger bids has never been fully explored. The findings here show that these differences disappear once the method of payment is considered and suggest that they are explained by the form of financing.

All of these results, listed above, have important implications for how merger gains are measured. If a merger announcement provides information on both the investment value of the merger and the proper valuation of the bidder's stock, then both pieces must be considered when evaluating a merger's value, its motivation, and its desirability.

2. Hypotheses

Consistent with the recent literature on financing effects, the financing decision component of a merger announcement may effect the returns to bidding firms.[6] Recent studies have consistently reported the finding that equity issues reduce firm value while other security issues have little or no effect, (see Asquith and Mullins (1986), Eckbo (1986), Masulis and Kowar (1986), and Mikkelson and Partch (1986)). Mergers financed with common stock are both equity issues as well as investments. If the market responds to equity merger financings in a manner similiar to its response to equity issues, stock financed mergers should produce smaller bidder returns compared with bids financed with other means.

Hypothesis 1: Bidding firm equity financing effect - If a stock merger is announced, (i.e. a merger in which the bidding firm issues equity to the target firm shareholders), the bidding firm will have a smaller return on the announcement day than if another form of financing is used.

On the other hand, the market reaction to cash financed mergers should be free of the negative impact of equity financing and, therefore cash mergers may provide a clearer view of the investment value of mergers to bidding firms.[7]

Bidders' returns are examined for all merger bids, including merger bids initiated with tender offers, and for merger bids when there is a bid outstanding for the target. The rationale for examining first bids concerns investor anticipation of merger bids. When there is a prior bid outstanding for a target, investors speculate on plausible potential bidders and may anticipate a subsequent bidder entering the takeover bidding. In this case, a portion of the returns to subsequent bidders may already be incorporated in the bidders' stock price at the announcement of a subsequent bid. Examining returns to offers where there are no prior bids outstanding should minimize the potential difficulties associated with investor anticipation of bids and provide a clearer view of returns to bidders.

Another factor which provides insight into bidders' excess returns is the relative size of the target and bidding firm. Asquith, Bruner, and Mullins (1983) find that the larger the merger (i.e. the larger the target relative to the bidder), ceteris paribus, the larger and more positive the bidder's excess return. They argue that this suggests mergers are positive net present value investment decisions but that it is difficult for the excess returns methodology to measure the value of small targets to large bidders. In contrast, the literature on equity financing documents a negative size effect for equity issues. Asquith and Mullins (1986) find that larger equity financings result in larger negative excess returns for issuing firms, due presumably to a stronger negative information signal. Of course, large mergers financed with common stocks are also large equity

issues. Thus, just as there is a problem separating the investment and financing components of a merger bid, there is a similar problem in determining the effect of size on bidder's returns.

Two of the most plausible hypotheses concerning the size effect are:

Hypothesis 2a: Positive size effect independent of form of financing - Larger mergers are associated with larger positive excess returns to bidders irrespective of the form of financing.

Hypothesis 2b: Interaction of size effect and form of financing - Larger cash bids are associated with larger positive excess returns for bidders and larger common stock bids are associated with larger negative bidder returns.

Support for Hypothesis 2a, a positive size effect independent of the form of financing, suggests that mergers are positive net present value investments, and that this value is more easily observed using the excess returns methodology when the target is large relative to the bidder. In this case, the investment value of mergers dominates any negative size effect associated with equity financing. Support for the alternative, a negative size effect regardless of the form of financing, suggests that mergers are poor investment decisions. With the excess returns methodology the loss of value would be more visible for large mergers, even with cash mergers where the possible negative effect of equity financing is absent.

Hypothesis 2b suggests an interaction of form of financing and merger size with a positive size effect with cash financing and a negative size effect for common stock. Findings consistent with this hypothesis would

suggest that mergers are positive net present value investment decisions. However, the investment value to bidders is more visible in the excess returns of large cash mergers where there are no negative financing effects. In the case of mergers financed with common stock, the negative size effect associated with an equity financing decision counteracts the investment value size effect visible in cash mergers.[8]

Form of financing may also affect the return to target firms.[9] The most common explanation concerns investor taxes. When target investors sell their shares for cash, they immediately realize any applicable capital gains and must pay a capital gains tax. If selling shareholders receive the bidder's common stock in exchange for their target shares, no capital gains are realized and no taxes are due. Capital gains are realized and taxes due only if and when the target shareholder sells the bidder's shares received in the merger transaction.

Thus, common stock financing allows target shareholders to postpone capital gains taxes, while a cash merger immediately imposes on target shareholders any capital gains taxes. The implication often made is that a cash merger requires a higher merger price and thus higher returns (before investor taxes) to the target because it is an immediately taxable transaction. Because of the savings associated with postponing these taxes, target shareholders are willing to accept a lower price and lower target returns for common stock financed mergers.[10]

The third hypothesis formalizes this rationale.

Hypothesis 3: Target firm equity financing effect - If a stock merger is announced, the target firm will have a smaller positive return on announcement day than if another (taxable) form of financing is used.

It is worth noting that there is an opposing hypothesis that suggests higher returns to targets in stock mergers. Risk arbitrageurs, investment specialists in the business of speculating on merger bids, experience no differential tax treatment on cash versus stock mergers. For reasons related to liquidity, transaction costs, and speed with which payment is received, they prefer cash mergers to those financed with common stock and other securities. As investors in the target firm, arbitrageurs require higher prices and thus, higher target returns for equity financed mergers to offset the cost and price risk implicit in the delay in receiving bidders' stock and to compensate them for the transactions cost and possible liquidity effects when they sell the shares received in the merger. If arbitrageurs are dominant among target shareholders, we should observe higher target returns for mergers financed with common stock and other securities and lower target returns for cash financed mergers.

Tests of Hypothesis 3 should provide insight into the validity of the investor tax rationale and the opposing argument based upon the preferences of risk arbitrageurs.

Finally, this study briefly explores the alternative techniques employed to initiate merger bids - tender offers and merger offers. A merger offer is a proposal by the bidder to merge with the target which is voted on by target shareholders. Merger offers are negotiated directly with target management and approved by the target's board of directors before going to a vote of target shareholders for approval. In a tender offer, the bidding firm makes an offer directly to target shareholders to purchase their shares. To affect a merger, the tender is followed by a merger offer which is voted on by target shareholders. Of course, when this vote is taken, the bidder already owns a significant fraction (often a

majority) of target shares purchased in the tender offer.

Previous studies, summarized in Jensen and Ruback (1983), have found differences in the excess returns associated with successful tender offers and merger offers. Compared with merger offers, tender offers produce larger average excess returns for both bidding and target firms. However, consistent with Hypotheses 1 and 3, this would be expected if tender offers are most often financed with cash and if merger offers are more often financed with common stock. Since this is generally thought to be the case, this study will explore the hypothesis that form of financing accounts for the differences in excess returns observed by tender offers and merger offers.

Hypothesis 4: Form of merger financing and technique used to initiate merger bids - For similar forms of financing, there is no difference in the excess returns associated with tender offers and merger offers.

This hypothesis suggests that the differences observed in excess returns for tender offers and merger offers can be explained by the form of merger financing, and the hypothesis applied to both bidder and target returns.

3. Data

This study analyzes a sample of 343 completed mergers where both the target and bidding firms were listed on either the NYSE or ASE at the time of the merger, and where the merger announcement was reported in the Wall Street Journal. The set of mergers was chosen by examining the CRSP daily master file for all delistings during the period 1975-1983. Each delisting was checked in the Wall Street Journal Index for its cause, e.g. merger, bankruptcy, liquidation, etc. The successful bidding firms for all

acquired firms were then found, and mergers with bidding firms not listed on either the NYSE or ASE were eliminated from the sample. The announcement date of the bidding firms' merger attempt and the announced method of financing the merger were collected from the Wall Street Journal Index. If any other event (e.g. dividend increase, stock split, etc.) was simultaneously announced or if the target firm was more than 50% owned by the bidder prior to the merger announcement, the merger was eliminated from the sample. Finally, because of data requirements, mergers where the bidding firm did not trade on the NYSE or ASE for at least 100 days prior to the merger bid were also dropped from the sample.[11]

A measure of merger size is required to test the effect of the relative size of the merger on the bidding firm's returns. The measure used here is the ratio of market value of the target's equity to the market value of the bidders' equity. The market values were calculated one day after the announcement day.[12]

Table 1 gives the distribution of merger announcement dates for the sample of 343 completed mergers by year and announced form of financing. Table 2 reports the percentage frequency of each form of financing over the same period.[13] The total number and average percentage of merger announcements for each type of announced financing are given at the bottom of Tables 1 and 2 respectively. Cash is the most frequently announced form of payment with 30% of the bids and common stock is the second most frequent form of known payment with 19%.[14] These percentages vary somewhat but remain fairly stable in both percentage terms and ranking during the period 1975-1983. Other categories of announced financing include: common stock and cash, common stock and other (common stock and some other security and possibly cash), convertible preferred or convertible preferred

and cash, straight preferred or straight preferred and cash, straight debt or straight debt and cash, other (uncategorized combination of the above, e.g. convertible preferred and debt, as well as different securities, e.g. convertible debt), and unknown (the form of financing is not announced at the first mention of a merger bid in the Wall Street Journal). All of these latter categories, except unknown, represent small (10% or less) percentages of the total mergers.

4. Methodology

The stock market's reaction to merger bid announcements is measured using daily excess stock returns. These excess stock returns are taken from the Excess Returns file provided by the Center for Research in Security Prices (CRSP). CRSP estimates the daily excess return for any security by

$$XR_{it} = R_{it} - E(R_{it}) \qquad (1)$$

where

t = day measured relative to the event,

XR_{it} = excess return to security i for day t,

R_{it} = return on security i during day t,

$E(\tilde{R}_{it})$ = expected rate of return on security i for day t.

$E(\tilde{R}_{it})$ is estimated by grouping annually all securities listed on the NYSE and the AMEX into ten equal control portfolios ranked according to their Scholes and Williams (1977) beta estimates. Each security is

therefore assigned to one of ten portfolios. The observed return to the control portfolio to which security i is assigned is then used as the estimate of $E(\tilde{R}_{it})$. The CRSP Daily Returns file provides the observed returns for each security R_{it}. The excess return for each security, XR_{it}, is then calculated as the difference between the actual return to a security and the return to its control portfolio.

Average excess returns for each relative day are calculated by

$$XR_t = \frac{1}{N} \sum_{i=1}^{N} XR_{it}, \qquad (2)$$

where N is the number of securities with excess returns during day t. The cumulative excess returns for each security i, CER_i, are formed by summing average excess returns over event time as follows:

$$CER_{i,K,L} = \sum_{t=K}^{L} XR_{it}, \qquad (3)$$

where the $CER_{i,K,L}$ is for the period from t=day K until t=day L.

Average cumulative excess returns over the event time from day K until day L are calculated by

$$CER_{K,L} = \frac{1}{N} \sum_{i=1}^{N} CER_{i,K,L} \qquad (4)$$

In particular, a two-day average excess return is generated for each merger bid announcement examined. A two-day excess return is necessary to capture the effect of an announcement due to its timing relative to the market's trading hours. Day t=0 is the day the news of an announcement is published in the Wall Street Journal. In most cases, the news is announced on the previous day, t= -1, and reported the next day. If a merger bid is announced before the market closes, then the market's response to the news actually predates the publication by one day. If the news is announced

after the market closes, the market will respond on day 0. Thus in reality there is a two-day announcement "day", t= -1 and t=0. This two-day return for firm i is $CER_{i,-1,0}$ where

$$CER_{i,-1,0} = XR_{i,-1} + XR_{i,0}, \tag{5}$$

and $XR_{i,0}$ is the excess return to security i on the day an announcement is published in the Wall Street Journal.

Finally t-statistics are calculated for $CER_{K,L}$ by

$$t(CER_{K,L}) = CER_{K,L}/S(CER_{K,L}), \tag{6}$$

where $S(CER_{K,L})$ is the portfolio standard deviation of $CER_{K,L}$. This standard deviation is calculated using several methods including an estimation period variance and the cross-sectional variance.[15]

5.1 Results for Bidders

Table 3 provides support for Hypothesis 1. The announced form of financing affects the market's reaction to a merger bid, and bidders' returns are lower for equity financed mergers. Announcement day excess returns are presented there for 343 mergers. The market's reaction is measured over two days; the day the announcement is reported in the Wall Street Journal (t=0) and the day before (t=-1) in case the news was released before the stock market closed that day. The two-day announcement day return for all mergers is -0.85%, which is statistically significant with a t-statistic of -8.42. This result is comparable to Dodd's (1980) finding that the announcement day abnormal returns to bidding firms is -1.16%. This result, however, fails to consider the possible impact of form of financing.

For the 102 bidders where the announced form of financing is all cash, the average two-day announcement excess return is + 0.2%, although this result is insignificantly different from zero (t=+1.05). Bidders financing merger bids with common stock have negative average excess returns of -2.4% which are statistically significant (t=-11.60). The 2.6% difference in excess returns between cash mergers and common stock mergers is significant with a t-statistic of 9.25.

Interestingly, bids financed with a combination of common stock and cash result in a market reaction of -1.47% which is between common stock alone and cash alone and which is significantly different from both. The difference in excess returns between cash alone and cash and stock is 1.67% which is significant with a t-statistic of 3.60. The -0.93% difference between stock alone and cash and stock has a t-statistic of 1.98%.

While we report results for all combinations of securities in the tables,[16] we focus the discussion primarily on the comparison of cash only and common stock only merger financings. Interpretation of results for other categories is complicated by the small sample sizes. Moreover, for financings involving a combination of securities, the proportions of the securities are not usually known at announcement date. Finally, analysis of pure cash offers and pure common stock offers provides the most direct evidence on the hypotheses outlined in Section 2 of this paper.

Table 4 gives the cross-sectional distribution of two day announcement returns across forms of financing and confirms the results in Table 3. Almost 59% of all bidding firms have negative two day excess returns. However, bidders' returns for cash mergers are almost evenly split with 52% of the bidders experiencing negative excess returns. In contrast, bidders' returns to common stock offers are predominantly negative. Bidding firms

in common stock acquisitions experience negative two day excess returns 77% of the time. Thus, common stock financed mergers are more negative both in average return and percentage than cash mergers.

Table 5 presents bidders' announcement day returns for first bids only. As noted in Section 2 of this paper, examining first bids (i.e. bids with no prior bid outstanding) should minimize the potential difficulties associated with investor anticipation of subsequent bids. The results are similar, but somewhat stronger than those reported in Table 3 for all bids. Common stock merger returns are significantly negative and significantly different from the returns to cash mergers. Merger bids financed with a combination of stock and cash again produce returns to bidders which are in between the returns to bids financed with cash alone and common stock alone.

However, for cash bids with no prior bids outstanding, the bidders' average excess return is +1.03% which is significant with a t-statistic of 3.27. The mean return for first cash bids is larger than the cash bidders' average return with prior bids, and this difference is significant (the difference is +1.48% with a t-statistic of 3.58)[15] The conclusion is that cash first bids produce positive significant excess returns for bidders. These positive returns to merger bids are visible when the negative impact of equity financing is absent, and when the potential for investor anticipation of the bid is minimized.

Thus, the results in Tables 3, 4, and 5 support Hypothesis 1. The form of merger financing affects the returns to bidders, and common stock financed bids produce significantly smaller excess returns. Bidders' returns for common stock financed bids are negative and significant, while returns to cash financed bids are positive, and for first bids, significant.

There is additional evidence on the effect of form of merger financing. For 71 bids in Table 1 the form of financing is unknown at the initial announcement date. Following these bids forward in time, it is possible to identify the first mention of the form of financing to be used in the merger and to calculate the market's reaction to the financing announcement. Table 6 presents these returns for 63 bidders where there was no other simultaneous information released with the financing announcement. The results show that the excess returns for both stock only and stock and other are large, negative, (-1.50% and -2.84%) and statistically significant. No other form of financing has significant results at the 5% level. This market reaction should primarily reflect only the new financing information since the merger parties, or investment decision, was previously announced.[18]

Another factor which provides insight into bidders returns is the relative size of the target and bidder. Hypothesis 2b, postulates a positive size effect for cash mergers and a negative size effect for common stock. This finding for cash mergers would suggest that mergers are good investments and that this is measurable absent the negative financing effect associated with issuing common stock. In the case for stock financed mergers, this finding would suggest that the negative impact of equity financing dominates any investment size effect.[19]

Regression analysis is used to provide insight into the effects of merger size and form of financing. The two day excess returns of the bidding firms are cross-sectionally regressed against the relative size of the merger by

$$XRET_i = a + b_1 \, SIZE_i \qquad (7)$$

where

$XRET_i$ = the two day announcement return to bidding firm i

$SIZE_i$ = the relative size of the target firm, i.e. the equity value of the target firm divided by the equity value of the bidding firm.

The regression coefficients and t-statistics for all mergers and for cash, common stock, common stock and cash, common stock and other, mergers are presented in Table 7.[20] Note that no size effect is apparent in the regression on the full sample. Specifying the form of financing is necessary to uncover the size effect in this sample. Relative size has a positive coefficient for cash mergers (b_1=1.71, t=1.60%), and size has a statistically significant negative coefficient at the 1% level in explaining excess returns in common stock mergers (b_1=-9.32, t=-3.09). The intercept is significant and negative for common stock mergers (a=-1.15, t=-1.98), and the intercept is not significant for cash mergers. Concerning the other categories, mergers financed with common stock and cash exhibit a negative size effect.[21]

To explore the structural differences in the regressions, t-statistics for the differences between the intercepts, a, and the b_1 coefficients are calculated. The difference in the intercepts of the cash and the common stock regressions is not significant. However, the difference in the size coefficients b_1, is statistically significant (t=3.45) for cash vs common stock regressions. The size coefficient for the combination cash and stock is significantly different than cash alone (t=2.33) and is not significantly different from common stock alone.

Consistent with Hypothesis 2b, that there is an interaction of the financing form and size, these results suggest that the relationship

between bidder excess returns and size is different for cash mergers and those financed with equity. Chow tests, which test the null hypothesis that the two regression structures are identical, confirm this. The F-statistics from the Chow test between the cash and the common stock regression is $F(2,162) = 14.11$ which is significant at the 1% level.[22]

Regressions with dummy coefficients provide additional insight into the effects of merger size and form of financing on bidders' returns.[23] The two day excess return of the bidding firms are cross-sectionally regressed against size and form of financing by

$$XRET_i = a + b_1 \text{ SIZE} \cdot D_c + b_2 \text{ SIZE} \cdot D_s + b_3 \cdot D_s \qquad (8)$$

where D_c = a dummy variable that takes the value 1 if cash is the only announced financing and 0 otherwise.

D_s = a dummy variable that takes the value 1 if a particular security is included in the announced form of financing and 0 otherwise.

This second dummy, for example, can be for common stock alone or for mergers financed with a combination of common stock and cash. Using cash only and common stock as the two forms of financing in equation (8), b_1 measures the relationship between the firm's relative size and the two day announcement return to the bidding firm for cash only mergers. When the merger is to be financed with common stock, the term b_2 measures the relationship between relative size and excess returns. The coefficient b_3 estimates, independent of any size effect, the difference in the bidder's announcement day excess return when the announced form of financing is common stock. The regression results for cash vs common stock are presented in Table 8.

The results demonstrate that both form of financing and relative size are important explanatory variables in the market's reaction to merger bids. The results are consistent with those reported in Table 7. For cash acquisitions the size coefficient is positive and marginally significant. For stock mergers the size coefficient is negative and highly significant.

In summary, the examination of size effects presented in Tables 7 and 8 support Hypothesis 2b, the interaction of size effect and form of financing. Large cash mergers produce positive returns for bidders. A positive investment value of mergers is observable in the bidders' excess returns for cash mergers when the target is large relative to the bidder. In such cases, the investment value of the acquisition is not obscured by the negative impact associated with a financing decision to issue equity.

In contrast, the market responds to large mergers financed with common stock in a manner similar to the market response to a large equity issue. The negative impact of the financing decision to issue equity dominates any positive investment value, and a negative size effect is observed for equity financed merger bids.

5.2 Results for Targets

This study also examines the relationship between the form of merger financing and announcement day excess returns for target firms. Hypothesis 3 postulates that stock financed mergers are associated with smaller observed target returns. One rationale for this result is that stock financing allows target investors to postpone capital gains taxes. Cash mergers immediately impose such taxes on target shareholders, and therefore cash bids require higher target returns to offset this tax disadvantage.

The opposite effect would be consistent with the argument that risk arbitrageurs prefer cash as a form of payment and are willing to accept lower returns as target shareholders in cash mergers.

Table 9 presents the two-day announcement excess returns for 157 target firms by form of announced financing. There are only 157 observations because first, target firms with missing returns on the announcement day are excluded from this sample. There were 79 target firms which did not trade on the day the merger bid was announced. Second, target firms are included in the sample only when the announcement was the first bid for the target. If prior bids are outstanding, the target firm's stock price already reflects a portion of the merger returns at the time of a subsequent bid. Focusing on first bids provides a clearer view of the impact of the merger announcement and the form of financing on the target firms.[24]

The results in Table 9 demonstrate that targets' excess returns are positive and statistically significant for all forms of merger financing. However, consistent with Hypothesis 3, the average return associated with mergers financed with common stock (XRET=13.85%) is substantially smaller than the average return for cash mergers (XRET=27.47%). Pairwise t-tests show that his difference is significant (t=20.86). These results are similar to those reported by Huang and Walkling (1986) and Wansley, Lane, and Yang (1983).[25]

5.3 Results for Tenders vs. Merger Offers

Finally, this study presents an analysis of tender offers compared with merger bids. The objective is to determine if the observed difference in excess returns reported in earlier studies between tenders and merger offers can be explained by the form of financing effects documented above.

Compared with merger offers, tender offers are associated with larger excess returns for both bidders and targets. The results presented in Table 10 are consistent with Hypothesis 4, that form of financing explains this difference in returns for tender offers and merger bids. The difference appears to be explained by the use of cash to finance tender offers and equity financing for merger bids

Ignoring the form of financing, tender offers are associated with larger returns for both bidders and target firms. This is consistent with the findings of earlier studies. However, the differences in returns for tender offers versus merger bids disappear once the form of financing is considered. The reason is that a majority of the tender offers are financed with cash and, as documented earlier, cash financing is associated with larger returns for both bidders and targets. While none of the tender offers were financed with common stock, roughly twice as many merger offers were financed with stock as with cash. Again, stock financing is associated with smaller returns to bidders and targets.

With cash financing, bidding firms' returns are positive in both tender offers (XRET=+1.21, t=+1.94) and merger offers (XRET=+0.91, t=+3.08), and the difference in these mean returns is not statistically significant. Thus the larger bidder returns for tender offers in the sample of all bids is due to the negative impact of stock financed merger offers.

With cash financing, target returns are actually larger for merger offers (XRET=+28.77) than for tender offers (XRET=+24.58). The larger target returns for tender offers in the sample of all offers is explained by the smaller target returns associated with stock financing (and other securities financing) in merger offers.[26]

Although these results are often drawn from small subsample sizes, they support the hypotheses that the differences in returns observed for tenders and merger offers can be explained by the form of financing.[27] It is the prevalence of a particular form of financing that accounts for these differences rather than any more fundamental aspect of tender offers versus merger offers.

6. Conclusions

This study finds that the market's reaction to the announcement of a merger bid is affected by the form of merger financing. The returns to bidding firms are smaller for equity financed bids than for cash merger bids. This is consistent with the finding of earlier studies that equity financing has a negative announcement effect on stock prices.

The negative impact associated with an equity financing decision is absent in cash merger bids. Thus, cash bids may provide a clearer measure of the investment value of a merger. For the full sample employed in this study, cash bids are associated with positive, though not significant, returns to bidders. For the subsample of merger bids when no prior bid has been made, bidding firms experience positive, significant returns in cash financed mergers.

The relative size of the target and bidding firm is also important in explaining bidders' merger returns, and the size effect is related to the form of financing. The investment value of mergers should be more clearly observable in the excess returns of bidders to the extent that the target is large relative to the bidder and the obfuscating effects of equity financing are absent. There is a positive size effect for cash mergers. Large cash mergers produce positive significant excess returns to bidders.

If large cash mergers provide an accurate measure of the investment value of mergers, these findings suggest that mergers are positive net present value investments.

Consistent with the findings of studies of equity issues, a negative size effect is observed in equity financed mergers. The market responds to equity financed mergers in a manner similar to its response to equity offerings. Larger equity mergers are associated with larger negative returns to bidding firms. While the investment value of the merger may still be positive, it is not large enough to offset the negative impact of the financing decision to issue equity. Regressions confirm the significance of these size effects.

The form of merger financing is also important in explaining returns to target firms. While the market's average response to a merger bid is always positive for target firms, it is significantly more positive when the offer is financed with cash rather than equity. This result is consistent with the investor tax disadvantage associated with cash mergers.

Furthermore, the choice of whether a merger bid is initated with a tender offer or a merger offer does not appear important in explaining either bidding or target returns after adjusting for the form of merger financing. Although the results are preliminary, the larger returns observed for both bidders and targets in tender offers are explained by the prevalence of cash tender offers. Consistent with the financing effects described above, the more common use of stock financing in merger offers results in smaller returns for both bidders and targets.

These results suggest strongly that the announcement of a merger bid releases two simultaneous pieces of information to the market; the value of the merger as an investment and the decision by the bidding firm concerning

how to finance the merger. Measuring the market's reaction to a merger bid for a bidder firm not only measures the estimated present value of the merger investment decision but also the market's reaction to a financing decision. This is not surprising in light of recent work, but it complicates our ability to evaluate whether mergers are good for shareholders or not. This complication and the corresponding necessity to consider both the form of financing and the use of funds should probably be extended to the analysis of all investment and financing decisions.

FOOTNOTES

1. Jensen and Ruback (1983) p.22

2. Their sample consists of the first four merger bids by a firm after a period of no merger bids for at least eight years. Asquith, Bruner, and Mullins (1983) provide more detail on the data selection in that study.

3. Shipper and Thompson also find significantly negative abnormal returns to acquiring firms associated with certain regulatory changes which make future acquisition activity more difficult. Asquith, Bruner and Mullins also find that bidding firms' shareholders do worse after 1969 and the passage of the Williams Act and that target firm shareholders do better after that date.

4. With external financings the firm states in the prospectus what the proceeds are to be used for. This section is usually non-specific, e.g. for general corporate purposes, for working capital, to retire short term debt, etc.

5. You et al (1986), includes form of payment as one of several factors in explaining the returns to bidder and target firms in mergers. They find that a dummy variable for cash merger is positive and the only consistently statistically significant explanatory variable. Huang and Walkling (1986) provide evidence on this question for 204 target firms and find that the average return to target firm stockholders are "significantly and substantially higher for cash offers than for stock offers" (p.26). They attribute this result to (1) tax effects, (2) regulation effects and (3) valuation effects. There is of course no "financing effect" for the target firm.

6. The announced method of financing a merger is not necessarily the method finally used, although the announced method was usually the actual method. When it wasn't, it was still the predominant source of funds.

7. There is the possibility that using cash may be interpreted as a positive signal of the firm's cash flow (see Miller and Rock (1986) for an example of this argument). In that case the positive information effect from using cash may cause the measured effect to overstate the value of the merger as an investment.

8. Of course, these hypotheses ignore the possibility of a systematic relationship between investment value and form of financing; for example, the possibility that firms choose to finance good mergers with cash and poor ones with stock.

9. See Fishman (1987) and Hansen (1985) for models of how target firms react to merger bid financing and Huang and Walkling (1987) and Wansley, Lane and Yang (1983) for empirical investigations. None of these papers consider how bidding firms react to merger bid financing.

10. Capital gains taxes are not eliminated only postponed. The true savings to shareholders is the ability to earn additional returns on the postponed tax payment.

11. There was a small sample of 19 bidding firms, in addition to the 343 above, which met the above requirements but which didn't trade on the announcement day.

12. Market values one day after the announcement day were used to make the size measure comparable across merger bids. For some target firms the merger bid is not the first bid, for others it is. This means that using a pre-bid measure of target size will already include a merger premium for those targets previously bid on and not for those with a first bid. Using a post-bid market value of target firms includes a merger premium for all targets. This difference between first and later bids is explored later in the paper.

13. The time period reported for merger announcements is 1973-1983, while the data base was developed from the list of NYSE and ASE delistings for the period 1975-1983. The announcement dates cover a longer time period since the announcement date takes place before the delisting date. This means that the distribution of mergers reported in Tables 1 and 2 is not necessarily a complete sample of announcement dates for 1973-1983 but do represent a complete set of delistments (which meet the criteria discussed above) for the period 1975-1983.

14. Huang and Walking report form of financing offered to target firms in 204 acquisition announcements for the period April 1977-September 1982. Their results find cash to be the most frequent form of financing offered (49.5%) and equity second (15.7%).

15. Differences in the choice of a test statistic do not make any important difference in the results presented here. The estimation period variance was estimated over the period from 69 days before the announcement day until 21 days before the announcement day. It was estimated both with and without a covariance term for consecutive daily excess returns to test for possible first-order autocorrelation. None was found. The t-statistics were generally higher when the variance was calculated from the estimation period t-69 to t-21 then when it was calculated from the cross sectional period. This is the expected result if the event period involves an increase in variance. The t-statistics reported in the tables and text are all calculated using the estimation period variance. Any differences in significance levels between these and the cross-sectional t-statistics will be noted.

16. There is one other category of common stock financing with four observations and it is included under "Other" in the classification scheme above. This is when two companies combine to form a third company and both current companies exchange their stock for the stock of the new firm. The average excess return is -0.63% with a t-statistic of -0.82. The bidding firm in these cases was defined as the firm whose shareholders received a majority of the voting stock in

the new combined firm. The average announcement day excess return of the four firms defined as targets was +4.71% (t=+4.49).

17. The bidder announcement day excess returns are more positive when there is no prior bid for all forms of financing except one (common stock) and significantly greater for all bids (t=3.68), cash bids (t=3.58), convertible preferred bids (t=2.69) and unknown bids (t=4.11).

18. Even this may be understated since these are all public firms and the market evaluates if the firm has the necessary cash or debt capacity to finance the acquisition or if the firm must issue equity instead.

19. It can be argued that cash mergers may also be financed externally previous to the merger bid. This should pose no problem however, since the two dates separates the market's reactions to the financing and investment decisions.

20. There is a potential problem with size and form of financing if small targets are all acquired with one form of financing (e.g. cash) and large mergers are all financed with another form of financing (e.g. common stock), or if absolute size matters. Analyzing the data by absolute size does not indicate that any such problems exist however. While cash mergers have the smallest average absolute size, common stock mergers are next and both samples have mergers distributed through all size categories. The market's reaction to mergers increases with absolute size in all categories of financing just as it increases with relative size in Table 7, below. Results are not presented for mergers financed by convertible preferred, by straight preferred, by debt, by other, or when the form of financing is unknown. None of these categories had a significant relationship between the two-day announcement day excess returns and the merger size.

21. Also, there are 14 mergers in the regression for common stock and other acquisitions versus 15 mergers in this category in Table 1. One merger is left out of the Table 7 because the target firm is 3.60 times larger than the bidding firm. The next largest target (in relative size) is 1.6 times the bidder and the average size of the 14 remaining targets is .62% of the bidders size. The regression results for the entire sample are: (t-statistics in parenthesis)

α	β	N	R^2	F
-5.37	+2.20	15	.163	2.53
(-3.31)	(+1.59)			

Size has a positive coefficient which is statistically insignificant, while the intercept term is still negative and statistically significant.

22. Based on Chow tests the regression for mergers financed with a combination of cash and common stock is significantly different at the 1% level from the cash only regression ($F(2,118)=6.17$) and is significantly different from the common stock only regression at the 5% level ($F(2,80)=4.03$).

Mergers financed with a combination of stock and cash mergers are typically much larger than either cash or stock only mergers. An analysis of how much of the merger is to be financed by cash and how much is to be financed by equity would be useful in analyzing these results. Unfortunately, in most Wall Street Journal announcements the percentage of cash used in multi-form financings is not announced.

23. This test assumes that the variance of the error terms is the same for acquisitions financed by cash and securities. The Chow tests allow the error variance to differ for cash mergers and securities mergers.

24. The two day announcement returns for the sample of 106 target firms who had a prior bid was also examined. The announcement day used was the day the successful bidder in the sample was first identified. The excess return for this sample of follow up bids was a positive 13.81% and statistically significant but lower than the 18.04% for the sample of first bids. This difference in announcement day excess return was also significant with a t-statistic equal to 11.61. Furthermore, the excess return for prior bids using most forms of financing was significantly positive but smaller than the corresponding sub-sample of first bids. The two exceptions were for "Other" and "stock and other". These two were also positive and significant but not smaller.

    These results are to be expected for the sample of targets that includes announcements of second bids and the identification of unknown bidders. The market would have already reacted to the first bid and subsequent bids would merely reevaluate the merger's probability, the expected form of financing, and the expected price. Thus, there is no reason to believe that the results in Table 9 represent a biased view of the market's reaction to target firm's first bids.

25. Huang and Walkling classified all payment methods into three categories; cash, stock and mixed payment. Wansley, Lane and Yang classified all payments into cash, securities, and combination. Both of these studies only examined returns to target firms and did not investigate bidder returns.

26. Huang and Walkling find similar results for their sample of target firms. A majority of all tender offers are for cash, target firms receive higher returns in cash bids, and the returns for non-tender offer cash bids are higher than the returns for tender offer cash bids. They do not examine bidders' returns.

27. The results when prior bids are included are consistent and in some ways stronger. With cash financing both bidders and targets have higher returns for merger offers than for tender offers. This is of course opposite to the results usually reported in the literature when form of financing is not considered.

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TABLE 1

Number of Merger Announcements by Year and Announced Form of Payment during the period 1973-1983.[a]

Year	Cash	Common Stock	Common Stock & Cash	Common Stock & Other	Conv.Pfd; Conv. Pfd.& Cash	Preferred; Pfd. & Cash	Debt; Debt & Cash	Other	Unknown	Total
1973	0	1	0	0	0	0	0	0	0	1
1974	2	2	0	0	1	0	1	0	5	11
1975	4	9	0	0	0	0	1	1	7	22
1976	12	10	0	0	2	1	1	0	5	31
1977	9	12	3	2	4	1	1	4	7	43
1978	17	7	2	1	6	1	4	2	11	51
1979	17	6	7	2	8	0	3	4	10	57
1980	15	7	3	3	5	0	1	2	4	40
1981	11	4	2	2	3	1	2	4	8	37
1982	10	3	2	4	0	0	0	3	9	31
1983	5	3	1	1	1	0	1	2	5	19
Total	102	64	20	15	30	4	15	22	71	343

[a] This Table was compiled by investigating all delistings from the NYSE and ASE during the period 1975-1983. These delistings were traced backward in the Wall Street Journal to determine merger announcement dates. Therefore, this is not necessarily a complete list of merger announcements occurring in any given year.

Table 2

Frequency Distribution by Year of Announced Form of Payment for a Merger Bid for the Period 1973-1983.

Year	Cash	Common Stock	Common Stock & Cash	Common Stock & Other	Conv.Pfd; Conv.Pfd. & cash	Preferred; Pfd. & Cash	Debt; Debt & Cash	Other	Unknown	Total
1973	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
1974	18.2	18.2	0.0	0.0	9.1	0.0	9.1	0.0	45.5	100.0
1975	18.2	40.9	0.0	0.0	0.0	0.0	4.5	4.5	31.8	100.0
1976	38.7	32.3	0.0	0.0	6.5	3.2	3.2	0.0	16.1	100.0
1977	20.9	27.9	7.0	4.7	9.3	2.3	2.3	9.3	16.3	100.0
1978	33.3	13.7	3.9	2.0	11.8	2.0	7.8	3.9	21.6	100.0
1979	29.8	10.5	12.3	3.5	14.0	0.0	5.3	7.0	17.5	100.0
1980	37.5	17.5	7.5	7.5	12.5	0.0	2.5	5.0	10.0	100.0
1981	29.7	10.8	5.4	5.4	8.1	2.7	5.4	10.8	21.6	100.0
1982	32.3	9.7	6.5	12.9	0.0	0.0	0.0	9.7	29.0	100.0
1983	26.3	15.8	5.3	5.3	5.3	0.0	5.3	10.5	26.3	100.0
	29.7	18.7	5.8	4.4	8.7	1.2	4.4	6.4	20.7	100.0

TABLE 3

Two day announcement day excess returns for bidding firms by announced form of financing in the period 1973-1983.

Form of Financing	Mean Excess Return %	t-statistic	N	Form of Financing	Mean Excess Return %	t-statistic	N
All	-0.85	-8.42	343	Conv.Pfd. or Conv. Pfd. & Cash	+0.18	+0.58	30
Cash	+0.20	+1.05	102	Pfd.or Pfd.& Cash	-1.17	-2.22	4
Common Stock	-2.40	-11.60	64	Debt or Debt & Cash	-2.61	-3.56	15
Common Stock & Cash	-1.47	-3.48	20	Other	-1.00	-1.94	22
Common Stock & Other	-3.57	-5.97	15	Unknown	-0.22	-0.93	71

TABLE 4

Cross-Sectional Distribution of Two-Day Excess Returns by Announced Form of Financing for Bidding Firms in 343 Mergers during the period 1973-1983

	Cumulative Percentage of Firms by Form of Financing									
INTERVAL	All	Cash	Common Stock	Common Stock & Cash	Common Stock & Other	Conv.Pfd. & Conv.Pfd. & Cash	Pfd. & Pfd. & Cash	Debt & Debt & Cash	Other	Unknown
XRET ≤ -.12	1.2	-	-	5.0	-	-	-	6.7	9.1	-
XRET ≤ -.08	3.8	-	6.3	15.0	6.7	-	-	13.3	9.1	1.4
XRET ≤ -.06	10.8	2.9	14.1	25.0	40.0	10.0	-	20.0	18.2	5.6
XRET ≤ -.04	19.5	10.8	29.7	30.0	60.0	13.3	-	26.7	22.7	12.7
XRET ≤ -.02	32.9	26.5	43.8	40.0	73.3	16.7	25.0	46.7	36.4	25.4
XRET ≤ -.00	58.9	52.0	76.6	50.0	80.0	46.7	75.0	73.3	54.5	53.5
XRET ≤ .02	78.7	73.5	92.2	80.0	80.0	66.7	100.0	86.7	72.7	77.5
XRET ≤ .04	89.5	86.3	96.9	90.0	80.0	90.0	100.0	93.3	86.4	88.7
XRET ≤ .06	95.6	96.1	100.0	90.0	100.0	96.7	100.0	100.0	86.4	93.0
XRET ≤ .08	97.4	97.1	100.0	95.0	100.0	100.0	100.0	100.0	90.9	95.8
XRET ≤ .12	99.1	99.0	100.0	95.0	100.0	100.0	100.0	100.0	100.0	98.6
XRET ≤ .16	99.7	99.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
XRET ≤ .18	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
N	343	102	64	20	15	30	4	15	22	71

TABLE 5

Two day announcement day excess returns for bidder firms by announced form of financing in the period 1973-1983 where the target firm has no prior bids and the first bidder is the eventual successful bidder.

Form of Financing	Mean Excess Return %	t-statistic	N	Form of Financing	Mean Excess Return %	t-statistic	N
All	-0.50	-3.66	197	Convertible Preferred	+0.89	+1.81	18
Cash	+1.03	+3.27	46	Preferred	-0.61	-0.92	2
Common Stock	-2.58	-11.97	48	Debt	-2.25	-2.47	9
Common Stock & Cash	-1.31	-2.34	12	Other	-0.76	-1.29	14
Common Stock & Other	-2.23	-2.26	6	Unknown	+0.57	+1.71	42

TABLE 6

Two day announcement day excess returns for bidder firms who announce the form of financing after the initial merger announcement in the period 1973-1983.

Form of Financing	Mean Excess Return %	t-statistic	N	Form of Financing	Mean Excess Return %	t-statistic	N
All	-0.40	-1.96	63	Conv.Pfd.or Conv. Pfd. & Cash	-	-	0
Cash	-0.27	-0.48	16	Pfd.or Pfd.& Cash	+0.93	+0.80	2
Common Stock	-1.50	-3.13	13	Debt or Debt & Cash	+3.10	+2.88	4
Common Stock & Cash	-0.76	-1.02	8	Other	+0.16	+0.38	13
Common Stock & Other	-2.84	-4.83	5	Unknown*	+1.41	+2.00	2

* For two bidders the form of financing was never reported in the Wall Street Journal but it was reported that the form of payment was unknown. The market reaction to that announcement is reported here.

Table 7

Estimated coefficients and t-statistics from regressing the two-day announcement excess return for bidding firms on the relative size of the merger.

$$XRET_i = a + b_1 SIZE_i$$

Form of Financing	a	b_1	N	R^2	F
All	-.85 (-2.86)	0.00 (0.00)	343	.000	0.00
Cash	-.33 (-.66)	+1.71 (1.60)	102	.025	2.55
Common Stock	-1.15 (-1.98)	-9.32 (-3.09)	64	.133	9.54
Common Stock & Cash	+1.64 (+0.81)	-6.78 (-1.95)	20	.174	3.80
Common Stock & Other	-3.81 (-1.81)	-0.59 (-0.21)	14	.004	0.04

TABLE 8

Estimated coefficients and t-statistics from regressing the two day announcement excess return for bidding firms on the relative size of the merger using a dummy coefficient for form of financing.

$$XRET_i = a + b_1 \cdot SIZE_i \, D_c + b_2 \, SIZE \cdot D_s + b_3 \cdot D_s$$

Forms of Financing	a	b_1	b_2	b_3	N	R^2	F
Cash & Stock	-0.32 (-0.69)	+1.71 (+1.65)	-9.32 (-2.92)	-0.83 (-1.06)	166	.165	10.68

D_c = Cash $\qquad$ D_s = Stock Only

TABLE 9

Two day announcement day excess returns for target firms
by announced form of financing in the period 1973-1983
when the first bidder was also the eventual successful bidder.

Form of Financing	Mean Excess Return %	t-statistic	N	Form of Financing	Mean Excess Return %	t-statistic	N
All	+18.04	+81.11	157	Conv.Pfd.or Conv. Pfd. & Cash	+22.90	+40.57	15
Cash	+27.47	+61.42	29	Pfd.or Pfd.& Cash	+31.17	+27.43	2
Common Stock	+13.85	+29.11	40	Debt or Debt & Cash	+14.51	+11.15	5
Common Stock & Cash	+32.18	+49.71	11	Other	+7.32	+9.09	14
Common Stock & Other	+7.98	+6.61	6	Unknown	+14.23	+32.35	35

TABLE 10

Two day announcement day excess returns for bidding firms and target firms in tender offers and merger offers by announced form of financing in the period 1973-1983 where the target firm has no prior bids and the first bidder is the eventual successful bidder.

Form of Financing	Bidders Returns in Tender Offers: Mean Excess Return %	t-statistic	N	Bidders Returns in Merger Offers: Mean Excess Return %	t-statistic	N
All	+0.20	+0.43	34	-0.64	+4.13	163
Cash	+1.21	+1.94	19	+0.91	+3.08	27
Common Stock	-	-	0	-2.58	-11.97	48
Common Stock & Cash	-2.35	-2.74	6	-0.26	-0.31	6
Common Stock & Other	-	-	0	-2.23	2.26	6

Form of Financing	Targets Returns in Tender Offers: Mean Excess Return %	t-statistic	N	Targets Returns in Merger Offers: Mean Excess Return %	t-statistic	N
All	+27.36	+44.73	18	+16.83	+70.39	139
Cash	+24.58	+23.72	9	+28.77	+60.74	20
Common Stock	-	-	0	+13.85	+29.11	40
Common Stock & Cash	+37.57	+36.33	5	+27.69	+31.62	6
Common Stock & Other	-	-	0	+ 7.98	+ 6.61	6