

Corporate Acquisitions: Method of Payment Effects, Capital Structure Effects, and Bidding Firms' Stock Returns

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Abstract

This study examines the effects of both the method of payment and the capital structure rearrangements on the common stock returns of bidding firms at the initial announcement of takeover bids. The evidence suggests that cash offers generate consistently higher abnormal returns than do stock exchanges. In both cash offers and stock exchanges, abnormal returns are not affected by the market's perception of changes in the firm's capital structure.

Introduction

Recent studies on corporate takeovers show that bidders' returns depend on the method of payment employed to finance the acquisition (Asquith, Bruner, and Mullins, 1987; Franks, Harris, and Mayer, 1988; Travlos, 1987; Wansley, Lane, and Yang, 1987). The method of payment also has a direct effect on the acquiring firm's capital structure. Cash offers, unlike stock exchanges, usually are financed with additional borrowing and hence add to the indebtedness of the acquiring firms. The postacquisition capital structure also may be affected by financial synergistic effects and the incentive to offset wealth transfers to the bondholders of the merging firms. (See Kim and McConnell, 1977; Asquith and Kim, 1982; Shrieves and Pashley, 1984.) Thus, unanticipated financial structure changes may affect stock returns upon announcement of corporate acquisitions independently from the method of payment (Masulis, 1980; Roll, 1986). Bruner (1988) examines the valuation effects of merger-related changes in financial leverage (measured as net debt ratio and traditional debt ratio) and finds a positive relationship between financial leverage changes and bidders' abnormal returns.

If financial leverage changes following acquisitions are related systematically to the medium of exchange, then Bruner's evidence implies that method of

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payment and capital structure effects should be examined jointly. Along these lines, the previously noted method of payment effects may be capital structure effects instead, and vice versa.

The purpose of this study is to examine the joint effects of the method of payment and capital structure rearrangements on the common stock returns of bidding firms at the initial announcement of acquisition bids.

Predictable Hypotheses

The signalling models of Leland and Pyle (1977) and Myers and Majluf (1984) predict that under asymmetric information, managers prefer a cash offer if they believe that their bidding firm is undervalued, while a common stock exchange is preferred in the opposite case. (See also DeAngelo, DeAngelo, and Rice, 1984.) Accordingly, market participants interpret a cash offer as good news and a stock exchange as bad news about the bidding firm's prospects, independent of the acquisition. Consequently, a cash offer is expected to have a positive impact on the price of the bidding firm's stock, whereas a stock exchange offer is expected to have a negative impact (Jensen and Ruback, 1983). Also, in Hansen (1987), cash offers reveal higher value for the bidder's assets. In Fishman (1986), they have a lower cost of signalling relative to securities offers when the initial bidding firm has a high value estimate about the target's assets under its control. Both models predict higher expected gains for bidders under cash offers than stock exchange offers.

Stock exchanges are, in general, tax-deferred acquisitions—any capital gains realized by the target firm's stockholders are not taxed until the stock is sold. Cash offers instead generate immediate tax obligations for the shareholders of the target firm. Due to this differential tax treatment, the acquiring firm must offer a higher price in the case of a cash offer to compensate the selling stockholders for their tax liability (Wansley, Lane, and Yang, 1983). In addition, cash offers allow the acquiring firms to raise the depreciation basis of acquired assets to their assessed fair market value, but this is not allowed for stock exchanges.¹ The

¹For details on the tax effects of mergers, see Smirlock, Beatty, and Majd (1985). The method of payment also is related to the accounting treatment of the acquisition. Cash offers are treated typically as a purchase, while stock exchanges often are treated as pooling of interests. (Accounting Principles Board Opinion 16 specifies the use of pooling accounting procedures only if, among other things, the acquiring firm issues only common stock with rights identical to its outstanding voting common stock in exchange for substantially more than, i.e., 90 percent, of all the voting common stock of the acquired firm.)

Although there is a mapping between methods of payment, tax effects, and accounting methods, this mapping is not perfect. For details on the accounting effects of mergers, see Hong, Kaplan, and Mandelker (1978).

higher acquisition price in a cash offer relative to a stock exchange reflects, in part, the additional tax credits due to additional depreciation tax shields. Therefore, it is unclear whether acquiring firms in cash offers enjoy net benefits from the additional tax credits once the higher acquisition price is considered.

Independent of the method of payment, bidding firms can pursue capital structure rearrangements motivated by financial synergies resulting from the coinsurance effect and/or latent debt capacity (Lewellen, 1971). Bidding firms' shareholders benefit from postacquisition leverage increases because they minimize wealth transfers to bondholders (Higgins and Schall, 1975; Galai and Masulis, 1976; Kim and McConnell, 1977; Asquith and Kim, 1982) and increase interest tax shields. Greater indebtedness also contributes to greater bonding between managers and shareholders, thus reducing the potential for wasteful allocation of free cash flow (Jensen, 1986). Assuming that upon the announcement of an acquisition bid investors form unbiased estimates of the firm's postacquisition debt ratio, this information should be reflected in the market price of the bidding firm's stock.

Accordingly, the predictable hypotheses can be stated as follows:

Hypothesis 1—Method of payment effect. When capital structure changes are controlled, the bidders' abnormal returns are higher in cash offers than in stock exchanges.

Hypothesis 2—Capital structure effect. When the method of payment is controlled, the bidding firms' common stock abnormal returns are higher when postacquisition financial leverage increases than when it decreases.

Data and Methodology

The data analyzed in this study were drawn from public announcements of proposals to acquire a target firm by means of tender offer or merger. The sample contains acquiring firms that financed the acquisition by means of either pure common stock exchange or cash. This study considers completed transactions only and covers the period 1972-1981. The firms included in the sample are listed on the New York Stock Exchange or on the American Stock Exchange, and they are contained in the Center for Research in Securities Prices (CRSP) and in the COMPUSTAT annual industrial and research data tapes.

The sample was obtained by searching the July 1981 *Statistical Report on Mergers and Acquisitions* of the Federal Trade Commission (FTC) and the *Wall Street Journal Index*. The event date of each acquisition is the date of the offer's initial announcement in the *Wall Street Journal*. Firms with concurrent major corporate events (i.e., exchange offers, new security offerings, or other takeover activities) for the fifteen day period prior to the announcement date are not

included in the final sample. The method of payment was identified from the *Wall Street Journal* and forms 13D and 14D filed with the Securities and Exchange Commission (SEC).² Accordingly, bidding firms were divided into stock exchanges if the entire transaction was financed through an exchange of common stock and into cash offers if the entire amount was paid in cash.³ Furthermore, firms were grouped into financial leverage increase and financial leverage decrease groups according to changes in their financial leverage. Financial leverage changes are based on a comparison of the acquiring firm's postacquisition debt ratio to the debt ratio of the portfolio of the firms before the merger (i.e., the debt ratio of the consolidated premerger pair of bidding-target firms).⁴ The debt ratio is measured as the ratio of total debt to total assets and is based on data obtained from the COMPUSTAT tapes for one year prior and one year after the announcement year of the proposal.⁵ The basic premise is that at

²These forms have a special section, entitled "Source and Amount of Funds or Other Consideration," that provides information on estimated fund requirements to finance the acquisition and on the sources to meet those requirements. With the exception of one firm, proposed and actual methods of payment were identical.

³According to the 13D and 14D reports, the necessary funds for the firms making cash offers were provided through open credit lines available to them.

⁴Differences in the accounting treatment of acquisitions may introduce a measurement problem with respect to leverage. The write-up of assets and the recognition of goodwill, according to the purchase method applied in cash offers, would lead to a lower postacquisition debt ratio even without changing the amount of debt.

The purchase method, therefore, causes the postacquisition observed debt ratio to underestimate (overestimate) the increase (decrease) of the firm's financial leverage. It is possible, therefore, that firms with minor actual increases of their postacquisition debt may be misclassified as leverage decrease firms when the *ex post* debt ratio is used as classification criterion.

Consequently, it may be difficult to interpret the results on the differential abnormal returns in cash offers between leverage increase and leverage decrease firms. To minimize the possibility of such bias, firms with small changes in their debt ratio were excluded, and new results were obtained. These results are similar to those reported in Table 3. In contrast, the pooling of interest method, applied in general to stock exchange acquisitions, is free of this bias.

The choice of such a debt ratio (based on the portfolio of the premerger firms) is motivated by the desire to obtain a measure of leverage change that is not contaminated by differences in the premerger leverage ratios of the acquiring and acquired firms. See also footnote 8.

⁵In all cases, the takeover was completed within one year of the acquisition announcement date. This measurement of the debt ratio potentially could underestimate leverage changes for firms that issued debt more than a year earlier on anticipation of the takeover transaction. Bruner (1988), however, presents evidence that successful bidders have lower debt ratios one and two years prior to

the time of the acquisition announcement, investors assess jointly how the method of payment and the potential for financial synergism may affect the capital structure of the acquiring firm. Investors establish unbiased estimates about the actual postacquisition debt ratio of the new entity. These expectations are assumed to be part of the information set that determines the bidding firms' stock prices at the announcement time.⁶

The sample contains 132 acquiring firms. Due to missing COMPUSTAT data on many target firms, there are only 61 matching pairs of bidder-targets on which leverage data are available. Bidders are divided into 32 leverage increase and 25 leverage decrease firms.⁷ The former set contains 22 cash offers and ten stock exchanges, and the latter contains 11 cash offers and 14 stock exchanges.⁸

the takeover announcement relative to a group of control firms. Therefore, the possibility for such a bias is limited.

⁶The present debt ratio differs from those used in other studies in the following ways. First, the traditional debt ratio is used here, while some recent studies (Asquith and Mullins, 1983; Bruner, 1988) use the net debt ratio (where debt is measured net of cash, cash equivalents, and marketable securities). In cases where bidders finance the acquisition through available cash and other liquid assets, the net debt ratio may be a more accurate measure of financial leverage changes than the traditional debt ratio. Because the necessary funds for cash offers were provided by open credit lines (see footnote 3), the present debt variable is unlikely to introduce measurement problems.

Second, the present debt ratio uses book value of equity, while Bruner (1988) uses both book and market values. Similar to Shrieves and Pashley (1984), the current research uses book values because this paper focuses on the nominal leverage changes associated with mergers, where such changes are obscured when market value debt ratios are used. At any rate, Bruner (1988) reports that those tests in which book value of equity replaced market value of equity had no material effects on the results.

Third, Bruner (1988) considers industry effects by comparing the firms' debt ratios to control groups and by using (in the regressions) the change in debt ratio relative to industry change. This debt ratio, which controls for extraneous factors, is appropriate for studies where the primary focus is to examine the leverage changes of merging firms. Such a debt ratio, however, obscures financial leverage decisions motivated by firm-specific characteristics. Consequently, and in line with recent studies on new equity issues that examine capital structure effects (see Smith, 1986), this research does not control for industry wide changes.

Fourth, in Bruner (1988) changes of debt ratios are obtained by comparing the debt ratios prior to and after the merger. Instead, this paper compares the acquiring firm's postacquisition debt ratio to the debt ratio of the portfolio of the premerger firms. As noted in footnote 8, the results do not appear to be sensitive to this definition of financial leverage change.

⁷This classification omits four bidders that did not experience any leverage change.

⁸In an earlier version of this paper, the financial leverage changes were based on a comparison of the acquiring firms' postacquisition and preacquisition debt

Table 1 shows the annual distribution of announcement dates of the sample takeover bids classified according to capital structure change and method of payment. The numbers indicate that the relative frequency of cash offers is slightly higher in the 1977-1981 subperiod relative to the 1972-1976 subperiod, but this pattern is similar for both groups of leverage increase and leverage decrease firms.

Table 2 (Panel A) presents summary statistics (mean and standard deviation) of debt ratios of bidding and target firms and relative size in cash offers and stock exchanges. PDA_{t-1} is the debt ratio of the portfolio of the pair of the premerger firms one year prior to the announcement of the proposal. D/A_{t-1} and D/A_{t+1} are the debt-asset ratios for one year prior and one year after the announcement year of the proposal. The summary statistics indicate that bidding and target firms have higher debt ratios in cash offers than in stock exchanges.⁹ CHLEV, the change in financial leverage, is defined as $(D/A_{t+1} - PDA_{t-1})$ divided by PDA_{t-1} . Although the mean values of CHLEV appear to be insignificantly different from zero in both cash offers and stock exchanges (the associated t-statistics are 1.44 and 0.28, respectively), the bidding firms experience wide variations in financial leverage changes, as suggested by the large standard deviations and range values of CHLEV.

In Table 2 (Panel B), chi-square tests of the association between the medium of exchange and financial leverage changes indicate a significant association between cash offers and leverage increases. Common stock exchanges most frequently lead to financial leverage decreases, but the association is not significant at conventional levels. This evidence suggests that the valuation effects of method of payment must be controlled for capital structure changes, especially in cash offers.

The relative size of the acquisition, RELSIZE, is defined as the market value of equity of the target firm divided by the market value of equity of the acquiring firm at the end of the year before the announcement date. It is evident from Table

ratios. Such a criterion, making no use of the target firms' financial data, yielded significantly larger groups of bidders. In particular, there were 76 leverage increase firms (53 cash offers, 23 stock exchanges) and 59 leverage decrease firms (32 cash offers, 27 stock exchanges). The results obtained in the earlier version are qualitatively similar to those reported here and these early results are available from the authors.

⁹For bidders, the t-statistics of the differences in the three debt ratios between cash offers and stock exchanges are, respectively, 1.89 (significant at the 0.10 level), 2.13 (significant at the 0.05 level), and 2.27 (significant at the 0.05 level). For target firms, the associated t-statistic for the reported debt ratio is 1.97, significant at the 0.10 level. The t-statistic for the differences between $(D/A)_{t+1}$ and $(D/A)_{t-1}$ for cash offers and stock exchanges is 0.75 and 0.37, respectively, insignificant at any conventional level.

2 that target firms are, in general, smaller than bidders and that the relative size of acquisitions is larger in cash offers than in stock exchanges. (The associated *t*-statistic is 2.21, significant at the 0.05 level.)

The stock market's reaction to acquisition announcements is measured by employing a standard event type methodology (using the equally weighted CRSP index), as explained in Travlos (1987). The parameters of the market model are estimated over a period of 121 days prior to day $t = -15$. Daily abnormal returns are computed in the test period from day $t = -15$ to day $t = +15$ relative to the initial announcement date in the *Wall Street Journal*, event day 0.¹⁰ Average abnormal returns and cumulative abnormal returns are tested for significant differences from zero by means of a *Z*-test following the Dodd and Warner (1983) methodology.

Empirical Evidence

Method of Payment Effect

Table 3 presents the average daily abnormal returns (AR) and the average cumulative abnormal returns (CAR), over selected intervals, of bidding firms' common stocks around the initial announcement of cash offers and stock exchanges in cases of increases in financial leverage and decreases in financial leverage, respectively.

In leverage increases, the average abnormal return for stock exchanges on event day -1 is -1.38 percent which is significant at the 0.05 level ($Z = -1.99$). The corresponding abnormal return for cash offers is -0.22 percent which is insignificant at conventional levels ($Z = -0.36$). The announcement day AR_0 for

¹⁰To control for the possibility of a change in the firm's beta due to changes in the firm's financial leverage, results also were obtained by estimating the market model's parameters over the postacquisition period ($t = +16$ to $t = +136$) and by using a market-adjusted model (i.e., $a = 0$, $b = 1$). Furthermore, to reduce any bias caused from possible leakage of merger information into the market prior to the first public announcement, abnormal returns were obtained from a market model whose estimation period ended 30 trading days prior to the announcement day. The two day abnormal returns $CAR_{-1,0}$ and the associated *Z*-values (in parentheses) for these alternative models are as follows: (a) postacquisition betas -2.15 percent (-4.07) and 0.33 percent (0.32) for leverage increase and stock exchanges and leverage increase and cash offers, respectively; -2.33 percent (-5.26) and -0.45 percent (-1.10) for leverage decrease and stock exchanges and leverage decrease and cash offers, respectively; (b) for the market-adjusted model (i.e., $a = 0$, $b = 1$), the associated numbers are -2.12 percent (-4.16), 0.22 percent (0.61); -2.44 percent (-5.26), -0.38 percent (-0.09); (c) for the shorter estimation period, the associated numbers are -2.10 percent (-4.12), 0.17 percent (0.49); -2.36 percent (-5.17), -0.23 percent (-0.02).

stock exchanges is -1.25 percent which is significant at the 0.01 level ($Z = -2.72$), whereas the corresponding AR for cash offers is -0.29 percent which is insignificant ($Z = -0.98$) at conventional levels. In addition, the two day $CAR_{-1,0}$ for stock exchanges is -2.63 percent which is significant at the 0.01 level ($Z = -3.34$), while the two day $CAR_{-1,0}$ for cash offers is -0.51 percent which is insignificant ($Z = -0.95$). Based on the results obtained from the sample of 32 bidding firms with an increase in financial leverage, it is evident that stockholders of acquiring firms experience significant losses in stock-for-stock acquisitions, but they realize normal returns in cash offers.

Regarding the bidders with a decrease in their financial leverage, Table 3 indicates that the ARs on event day -1 for stock exchanges and cash offers are -1.30 percent and -0.80 percent, respectively, with corresponding Z-values of -3.37 (significant at the 0.01 level) and -1.60 (insignificant at conventional levels), respectively. Similarly, on event day 0 the ARs for stock exchanges and cash offers are -1.25 percent (statistically significant at the 0.05 level; $Z = -2.55$) and 1.70 percent (statistically insignificant at conventional levels; $Z = 1.39$ percent), respectively. Moreover, the two day $CAR_{-1,0}$ for stock exchanges is -2.55 percent which is statistically significant at the 0.01 level ($Z = -4.18$), while the $CAR_{-1,0}$ for cash offers is 0.90 percent which is statistically insignificant at any conventional level ($Z = -0.15$). Similar to the findings from the firms with an increase in their financial leverage, the evidence from the sample of 25 bidders with a decrease in financial leverage also suggests that stock exchanges are associated with significant losses to the bidders' shareholders, while cash offers are associated with normal returns.¹¹

To facilitate the comparison of the abnormal returns between various portfolios of bidders, the mean differences are derived by subtracting the associated average abnormal returns. With respect to the leverage increase group, on event day 0 the daily difference of ARs between cash offers and stock exchanges is 0.96 percent which is statistically significant at the 0.10 level ($Z = 1.71$).¹² Also, the mean difference in the two day CARs between cash offers and

¹¹ Given the documented evidence of a secular decline in the abnormal returns to bidders in successful tender offers (which most likely are cash offers) during the 1960s, 1970s, and 1980s (Jensen and Ruback, 1983; Jarrell, Brickley, and Netter 1988), it may be argued that the higher abnormal returns in cash offers relative to stock exchanges (reported herein) is driven by a possible time concentration of the cash offers in the early years of the sample period. On the contrary, as shown in Table 1, the frequency of cash offers tends to be greater in the latter years. The possibility of this type of bias was suggested by an anonymous referee.

¹² The Z-value for the differences in abnormal returns between groups 1 and 2 is calculated as:

stock exchanges is 2.12 percent, significant at the 0.05 level ($Z = 2.22$). Regarding the bidders in the leverage decrease group, the daily mean difference in ARs between cash offers and stock exchanges on event day 0 is 2.95 ($Z = 2.73$) which is statistically significant at the 0.01 level. Also, the mean difference in the two day CARs is 3.45 percent which is significant at the 0.01 level ($Z = 2.66$). These findings, consistent with hypothesis 1, corroborate the existence of method of payment effects in corporate takeovers that also has been found in Asquith, Bruner, and Mullins (1987), Franks, Harris, and Mayer (1988), Travlos (1987), and Wansley, Lane, and Yang (1983). The new evidence from this study is that the association between financial leverage changes and method of payment does not explain the differential market reaction between cash offers and stock exchanges. That is, cash offers produce higher abnormal returns regardless of the direction of financial leverage changes subsequent to the acquisition.

Capital Structure Effect

The capital structure effect is examined by analyzing the differences in mean daily and cumulative abnormal returns between bidders in leverage increase and leverage decrease groups in cash offers and stock exchanges, respectively. The Z -values (not reported here) indicate that these differences are not in general statistically significant at conventional levels on event days -1, 0, +1, (-1, 0), (-1, +1) in either cash offers or stock exchanges. The only exception is event day 0, when for cash offers the mean difference in ARs between leverage increase and leverage decrease firms is -1.99, statistically significant at the 0.10 level (Z -value = -1.70). These findings do not support hypothesis 2 and imply that the abnormal returns associated with each method of payment do not display the impact of capital structure effects.¹³ Thus, the Masulis (1980) and Roll (1986)

$$Z = \frac{ASAR_1 - ASAR_2}{\sqrt{\frac{1}{N_1} + \frac{1}{N_2}}}$$

where:

$ASAR_1$ and $ASAR_2$ = the average standardized abnormal returns for firms in groups 1 and 2; and

N_1, N_2 = the number of firms in the two groups, respectively.
(See Travlos, 1987, footnote 13.)

¹³To the extent that the market considers open lines of credit equivalent to issued debt, the preacquisition debt ratio used in this study underestimates the bidder's debt ratio and, thus, overestimates leverage changes. This problem does not affect the stock exchange cases, though, for which no evidence of capital structure effect is found.

conjecture that valuation effects from acquisition announcements may be due to capital structure changes is not supported by the present findings.

Cross-Sectional Analysis

In order to gain additional insights into the price effects from takeover bids, the following cross-sectional regression is run for individual announcement period stock returns:

$$(1) \text{ SCAR}_{j(-1,0)} = a_0 + a_1 \text{ FIN}_j + a_2 \text{ CHLEV}_j + a_3 \text{ FIN} * \text{ CHLEV}_j$$

where:

$\text{SCAR}_{(-1,0)}$ = the two day standardized cumulative abnormal return at the first announcement of a takeover bid;¹⁴

FIN = a dummy variable for the method of payment ($\text{FIN} = 0$ for cash offers, 1 for stock exchanges); and

CHLEV = the change in financial leverage as defined earlier.

$\text{FIN} * \text{CHLEV}$ controls for any interactive effects between method of payment and financial leverage changes. Consistent with hypotheses 1 and 2, a_1 is expected to be negative and a_2 is expected to be positive.

Table 4 reports results of different versions of the general regression model described in equation (1). Regressions (1) through (3) pertain to the bidding firms. Regressions (4) through (6) utilize as dependent variable the value-weighted standardized abnormal return on the portfolio of the two firms, bidder-target, each weighted by the market value of its equity.¹⁵ The two firm portfolio returns are utilized to capture any possible financial synergistic effects that are shared by the firms.

The findings indicate that the regression coefficient for the method of payment is statistically significant at least at the 0.05 level in all regressions. To the contrary, the regression coefficients for the change in financial leverage

¹⁴The $\text{SCAR}_{j(-1,0)}$ is derived by summing ARs for event days -1 and 0 and dividing the sum by the estimated standard deviation (over the preannouncement period) of the two day abnormal return. SCARs are used to control possible effects of heteroscedasticity caused by the cross-sectional differences in estimates of residual variances obtained from the market model regressions.

¹⁵In this case the number of observations is reduced to 53 due to missing CRSP returns for several targets and/or to prior outstanding bids for the same target, in which case the target firm was excluded.

and the interaction variable are not significant at any conventional level.¹⁶ Focusing on changes in financial slack as a motive for mergers, Bruner (1988) presents evidence of a positive relationship between bidders' abnormal returns and financial leverage changes. Given the methodological differences of the two studies, these findings invite further research on capital structure effects in acquisitions.¹⁷ The regression results obtained from the bidder-target portfolio returns provide evidence of a significant method of payment effect, but no evidence of capital structure effects.

The present findings are comparable with recent studies on new equity issues (see Smith, 1986 for a detailed review) that report significant declines in stock prices at the announcement of issues of new equity. Asquith and Mullins (1986) examine whether this negative market reaction is explained by associated changes in financial leverage. Their regression findings indicate that the financial leverage change, measured by two alternative proxies, is at best marginally significant (i.e., at the .10 level using a one tail test), but the significance disappears when size is included as an explanatory variable in the regressions. Based on these findings, they conclude that their evidence is against a pure capital structure explanation of the announcement effects of stock issues, but it is consistent with

¹⁶The Pearson correlation coefficients for the pairs of variables (FIN, CHLEV), (FIN, FIN*CHLEV), and (CHLEV, FIN*CHLEV) are -0.09, 0.05, and 0.68, respectively. The first two coefficients are statistically insignificant at any conventional level, while the third one is significant at the 0.01 level. To ensure that the reported regression results are not affected by multicollinearity problems, simple regression of SCARs on CHLEV were run separately for cash offers and stock exchanges. The coefficient of CHLEV is not significant in either regression.

It has been argued that the smaller the size of the target firm relative to the bidder (i.e., the smaller the RELSIZE), the more difficult it is to detect econometrically the valuation effect of the acquisition on the bidder's common stock (Asquith, Bruner, and Mullins, 1983; Jensen and Ruback, 1983; Roll, 1986). It could be suggested, therefore, that the higher abnormal returns in cash offers relative to stock exchanges reflect this size effect, as the RELSIZE is larger in the former group. To account for such a bias, the relative size of the acquisition was added in the regression, but the results were similar to those reported here. In addition, qualitatively similar results were obtained from separate regressions for the two types of takeovers; that is, mergers and tender offers. Moreover, simple regressions employing the variables CHLEV and relative size, respectively, did not reveal any explanatory power for these variables. Finally, similar results were obtained in an earlier version of this paper where CHLEV was defined as bidder's debt-asset ratio one year after the acquisition divided by debt-asset ratio one year prior to acquisition.

¹⁷See footnote 6. In addition, Bruner (1988) does not address method of payment effects.

the information effects predicted by Miller and Rock (1985) and Myers and Majluf (1984).

Masulis and Korwar (1986) address the same issue and find that the regression coefficient of the change in financial leverage is statistically significant ($t = 1.87$), but its significance disappears when the percentage change in the shares of common stock outstanding is included in the regression. The lack of evidence of a capital structure effect in the context of acquisitions also corroborates a similar conclusion reached by Eckbo (1986) in his study on corporate debt offerings.

Summary and Conclusions

This study considers the association between method of payment and capital structure rearrangements following corporate acquisitions and their impact on bidding firms' stock returns. The evidence suggests that there is a significant association between method of payment and financial leverage changes in cash offers (i.e., cash offers most often are associated with financial leverage increases) and a weak association in common stock exchanges. When capital structure changes are held constant, cash offers generate consistently higher abnormal returns than stock exchanges. It also is found that in both cash offers and stock exchanges abnormal returns are not affected by the market's perception of changes in the firm's capital structure. This evidence is consistent with the hypothesis that the medium of exchange in acquisitions conveys valuable information to the market. Therefore, the relative gains (losses) associated with cash offers (stock exchanges) derive from the information effects associated with the method of payment, independent of merger-induced financial rearrangements.¹⁸

¹⁸Negative abnormal returns to bidders are also consistent with the "winner's curse" (Capen, Clapp, and Campbell, 1971) and "hubris" (Roll, 1986) hypotheses that suggest that successful bidders overpay for the target firm. The lack of evidence of losses to bidders in cash offers, however, implies that the positive information effects offset possible negative price reaction caused by overpayment.

An anonymous referee has pointed out the following alternative reasons for higher abnormal returns in cash offers relative to stock exchanges: (a) anticipation effect—because most cash offers utilize open lines of credit, the market may anticipate that these firms are going to be acquirers, but not anticipate acquisitions by those that issue securities; (b) regulatory effects—even if the market did anticipate acquisitions by those firms that issue stock, cash offers may be associated with higher abnormal returns because cash deals can be completed faster than those that must go through SEC registration (Wansley, Lane, and Yang, 1983); (c) firm quality effect—the presence of large open lines also may indicate to the market a higher quality firm than one without such borrowing capacity.

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Table 1
Annual Distribution of Announcement Dates of Corporate Takeover Bids
Classified According to Capital Structure Change and Method of Payment
Year 1972 through 1981

Year	Leverage Increase		Leverage Decrease	
	Stock Exchanges	Cash Offers	Stock Exchanges	Cash Offers
1972	1	1	1	0
1973	2	3	0	0
1974	0	1	1	1
1975	1	1	1	3
1976	1	2	2	1
1977	2	2	3	0
1978	2	6	1	2
1979	0	3	2	1
1980	1	0	3	1
1981	0	3	0	2
Total	10	22	14	11
Period				
1972-1976	5 (50%)	8 (36%)	5 (36%)	5 (45%)
1977-1981	<u>5 (50%)</u>	<u>14 (64%)</u>	<u>9 (64%)</u>	<u>6 (55%)</u>
Total	10	22	14	11

Table 2
Summary Statistics and Sample Characteristics of Corporate Acquisitions
Years 1972 through 1981

Panel A Debt Ratios and Relative Size				
	Cash Offers		Common Stock Exchanges	
	Mean (%)	Standard Deviation (%)	Mean (%)	Standard Deviation (%)
Bidding Firms				
(PDA) _{t-1}	48.72	11.80	43.20	10.50
(D/A) _{t-1}	49.53	14.30	42.36	10.70
(D/A) _{t+1}	50.50	14.70	42.92	9.40
CHLEV ^a	3.48	14.12	0.92	16.20
Target Firms				
(D/A) _{t-1}	49.16	14.10	42.62	10.50
RELSIZE	23.80	28.90	11.50	11.10

Panel B Sample Composition of Bidders According to Method of Payment and Financial Leverage Changes				
	Cash Offers	Common Stock Exchanges	Total	χ^2
Leverage Increase	22	10	32	4.50 ^d
Leverage Decrease	11	14	25	0.36
Total	33	24	57 ^b	
χ^2	3.67 ^c	0.67		

^aThe range of CHLEV is -34.8 percent to 28.6 percent for cash offers and -19.6 percent to 50.0 percent for stock exchanges

^bThis table omits four acquiring firms where there are no changes in the financial leverage subsequent to the acquisition

^cSignificant at 0.056 level

^dSignificant at the 0.034 level

Table 3
 Daily Average Abnormal Returns (AR) and Cumulative Abnormal Returns (CAR) for 57 Bidding Firms
 Classified According to Change in Financial Leverage and Method of Payment
 From Five Days Before to Five Days After the Initial Announcement (Day Zero) of Takeover Bids
 1972 through 1981

(1) Event Day	Leverage Increase N=32				Leverage Decrease N=25			
	Stock Exchanges N=10		Cash Offers N=22		Stock Exchanges N=14		Cash Offers N=11	
	(2) AR (%)	(3) Z-Values	(4) AR (%)	(5) Z-Values	(6) AR (%)	(7) Z-Values	(8) AR (%)	(9) Z-Values
-5	0.53	1.60	0.19	0.16	-0.18	-0.68	-0.61	-0.45
-4	0.12	0.28	0.03	0.09	-0.55	-0.88	-0.25	-0.63
-3	-0.47	-0.90	-0.56	-1.43	-0.28	-0.69	0.12	0.23
-2	0.13	0.17	0.21	0.91	-0.29	-0.50	-1.07	-1.41
-1	-1.38*	-1.99**	-0.22	-0.36	-1.30 ^c	-3.37***	-0.80	-1.60
0	-1.25 ^b	-2.72***	-0.29	-0.98	-1.25 ^a	-2.55**	1.70	1.39
1	-1.45 ^c	-3.56***	-0.11	-0.39	0.10	0.07	-0.64	-1.51
2	1.29 ^d	2.55***	-0.30	-0.45	0.25	0.39	-1.43	-1.57
3	-0.18	-0.01	0.49	1.42	0.26	0.76	0.80	1.60
4	-0.39	-1.39	0.07	-0.21	-0.18	-0.27	-0.71	-1.60
5	-0.44	-0.63	-0.12	-0.05	-0.19	-0.52	-0.11	0.25

Table 3 (continued)
 Daily Average Abnormal Returns (AR) and Cumulative Abnormal Returns (CAR) for 57 Bidding Firms
 Classified According to Change in Financial Leverage and Method of Payment
 From Five Days Before to Five Days After the Initial Announcement (Day Zero) of Takeover Bids
 1972 through 1981

(1) Event Day	Leverage Increase N=32				Leverage Decrease N=25			
	Stock Exchanges N=10		Cash Offers N=22		Stock Exchanges N=14		Cash Offers N=11	
	(2) CAR (%)	(3) Z-Values	(4) CAR (%)	(5) Z-Values	(6) CAR (%)	(7) Z-Values	(8) CAR (%)	(9) Z-Values
-5, 5	-3.49	-1.98**	-0.60	-0.39	-3.61	-2.49**	-3.00	-1.59
-2, 2	-2.67	-2.48**	-0.70	-0.57	-2.49	-2.67***	-2.24	-2.10**
-1, 1	4.08	-4.77***	-0.62	-1.00	-2.45	-3.38***	0.26	-0.99
-1, 0	-2.63	-3.34***	-0.51	-0.95	-2.55	-4.18***	0.90	-0.15

*70 percent of the abnormal returns are negative

*80 percent of the abnormal returns are negative

*This significant negative abnormal return is driven by the abnormal returns of three firms that show negative abnormal returns for both event dates 0 and +1. A review of the *Wall Street Journal* did not reveal any other information, except the announcement of the bid one or two days prior to event date +1

*This significant positive abnormal return is due to the abnormal returns of two firms that show negative abnormal returns on event date -1, but positive abnormal returns on event date +2. A review of the *Wall Street Journal* revealed no information on event date +1 or +2 for the one firm and the announcement of the annual earnings (negative) for the other

* Significant at the 0.10 level

** Significant at the 0.05 level

*** Significant at the 0.01 level

Table 4
 Estimated Coefficients and t-statistics (in parentheses) from Regressions of the
 Two Day Standardized Cumulative Abnormal Returns (SCAR-1,0) on the Method of Payment (FIN),
 the Change in Financial Leverage (CHLEV), and the Interaction Variable (FIN*CHLEV)
 1972-1981

Regression	a0	a1	a2	a3	N	R ² (%)	F	Significance of F
	SCAR _j (-1,0) = a0 + a1FIN _j + a2CHLEV _j + a3(FIN*CHLEV) _j							
(1)	-0.10 (-0.25)	-1.34 (-2.15)*		Bidders	61	6.92	4.61	0.04
(2)	-0.72 (-0.33)	-1.33 (-2.11)*	0.60 (0.29)		61	7.05	2.32	0.10
(3)	-0.07 (-0.18)	-1.36 (-2.27)*	-0.51 (-0.19)		61	10.51	2.23	0.09
(4)	0.79 (1.89)	-1.86 (-2.92)**		Portfolio of Bidders-Targets	53	14.30	8.51	0.01
(5)	0.03 (0.01)	-1.83 (-2.83)*	0.73 (0.31)		53	14.50	4.23	0.02
(6)	0.94 (1.99)*	-1.99 (-2.95)**	-1.85 (-0.46)		53	16.80	3.22	0.03

* Significant at the 0.05 level

** Significant at the 0.01 level