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ALFRED P. SLOAN SCHOOL OF MANAGEMENT

Targeted Repurchases and Common Stock Returns
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COMMENTS WELCOME

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1. **Introduction**

Targeted share repurchases, popularly called greenmail, have come under strong criticism. Critics of targeted repurchases argue that these transactions thwart desirable takeovers and reduce the wealth of shareholders excluded from the repurchase. It is also argued that evidence of negative stock price responses to the announcement of a targeted repurchase supports the position of opponents of these transactions. As a result of the objections raised and the initial empirical evidence, federal legislation has been proposed that requires stockholder approval of targeted repurchases under certain circumstances.  

The purpose of this paper is to provide new evidence and a different interpretation of stock price effects for firms that buy back shares in a targeted repurchase. Existing evidence consists primarily of average stock price effects for the repurchasing firms at the announcement of a targeted share repurchase. This study expands the measurement of stock price effects to include the period in which the eventual seller's investment position was first publicly disclosed as well as the dates of potentially important subsequent events that are related to investment position. We estimate the total stock price effect of all events related to the investment and the eventual repurchase.

The principal finding of this study is that stockholders of repurchasing firms benefit from investments that conclude with targeted repurchases. The average total abnormal return for our sample of repurchasing firms is 6.8%.

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1. Articles by Kirkland (1984) and Boland (1984) are examples of discussions of the greenmail debate in the financial press. In the 99th congress, the pending targeted repurchase legislation includes S286, S420, S476, and HR1003. Dees (1985) discusses the ethical issues associated with targeted repurchases.
Consistent with the results of previous studies, we find a statistically significant decline in the stock prices of repurchasing firms of -3.8% at the targeted repurchase announcement. But this decline is more than offset by stock price increases that are associated with the disclosure of the initial investment and with other related intervening announcements.

Even for targeted repurchases that follow a control contest, the negative stock price effect of the targeted repurchase is offset by the positive effects of preceding events that are related to the investment. The average stock price decline for repurchasing firms is -6.3% when the targeted repurchase is preceded by a control contest and -2.8% when no control contest precedes the targeted repurchase. However, the stock price increases prior to the targeted repurchase announcement are substantially larger for investments that involve control contests. The total abnormal returns, measured from the beginning of the investment through the targeted repurchase, are similar for the two sub-samples: 7.1% for targeted repurchases preceded by control contests and 6.8% for other targeted repurchases. Therefore, these two types of investments are equally beneficial to shareholders of the repurchasing firms - even though the stock price decline associated with the targeted repurchase announcement is larger when it follows a control contest.

One third of the targeted repurchases are accompanied by standstill agreements, which limit additional investments in the repurchasing firm by the seller for a specified time period. For these repurchases, the average abnormal stock return associated with the targeted repurchase announcement is -9.2%. This negative announcement effect completely reverses the favorable effects of preceding announcements. The average total abnormal return from the initial investment through the repurchase for the repurchases that are accompanied by standstill agreements is 1.3%, which is not statistically different from zero. In contrast, the average total abnormal return for
targeted repurchases that are not accompanied by standstill agreements is 9.9%, which is statistically significant.

We investigate two explanations of the stock price declines associated with targeted repurchase announcements. The information reversal effect relates the stock price declines to the reversal of favorable expectations formed prior to the targeted repurchase announcement, such as the anticipation of a takeover bid. The effect predicts that the stock prices changes at the time of targeted repurchase announcement are inversely related to the preceding stock price changes and are due to the decreased likelihood of a more favorable outcome. Therefore, the negative stock price effects of the targeted repurchase do not necessarily reflect a decision which is contrary to the stockholders' interest. The premium effect relates the stock price declines at the targeted repurchase to the premium paid to the selling stockholder. The information reversal and premium effects are not mutually exclusive. Our results suggest that the information reversal effect is useful in explaining the cross-sectional variations in the abnormal returns at the targeted repurchase announcement. However, the premium effect does not appear to be important in explaining the targeted repurchase abnormal returns for repurchasing firms.

Overall, our evidence raises the burden of proof for those who argue that targeted repurchases harm the repurchasing firm's shareholders. The argument that a targeted repurchase harms shareholders requires evidence that the targeted repurchase was dominated by an alternative course of action. Evidence of only price effects cannot determine whether repurchases are in stockholders' interests.

2. Sample Characteristics

2.1 Sample Design

Our final sample of 112 targeted repurchases is derived primarily from
three sources. First, we use the sample of targeted repurchases examined in Mikkelson and Ruback (1985). Second, citations of stock repurchases are examined in the "reacquired shares" subject entry of The Wall Street Journal Index for the years 1980 through 1983. Third, we use listings of targeted repurchases compiled by two underwriting firms.

The final sample of repurchases satisfies three requirements. First, the repurchasing firm was listed on the New York and American Stock Exchange at the time of the targeted repurchase announcement. Second, a published report of the initial public announcement of the targeted repurchase appeared in The Wall Street Journal or The New York Times. Third, we could determine a date of the initial public disclosure that the investment position reached 5% or more of the repurchasing firm's outstanding shares. This requirement is included so that the stock price effect can be measured from the initial disclosure of the investment position to the targeted repurchase announcement. The 5% level is used because the Williams Act requires stockholders to report this level of ownership in a schedule 13d filing within 10 days of its attainment. The Wall Street Journal Index was examined back through the 1975 volume for an initial public disclosure of the investment position that was eventually repurchased. The SEC New Digest was searched around the time of an initial public disclosure in the The Wall Street Journal for the date of a filing of Schedule 13d. We also searched issues of the Insiders Chronicle for the date on which a 5% or greater ownership position was first attained.

2. We excluded 7 targeted repurchases included in the Mikkelson and Ruback (1985) sample because the target firm was not listed on the American or New York Stock Exchange.

3. In May 1982 the SEC News Digest ceased reporting the filing date of Schedule 13d and began reporting the date on which a 5% ownership position was reached.

4. The final sample does not include repurchases from a current or former officer of the repurchasing firm. Our requirement of identifying an "initial date" for the investment eliminated targeted repurchases from these individuals. Bradley and Wakeman (1983) report the price effects of targeted repurchases from insiders of the repurchasing firm.
2.2 **Descriptive Statistics**

The distributions by calendar years of the initial disclosures of the investment position and the targeted repurchase announcements are reported in columns 2 and 3 of Table 1. Our sample selection restricts the announcements of targeted repurchases to the years 1978 through 1983. More than two thirds of the 112 targeted repurchase announcements occurred after 1980, the last year of the sample periods of the Dann and DeAngelo (1983) and Bradley and Wakeman (1983) studies. The average number of trading days between the initial investment announcement and the repurchase announcement is 299 days, or approximately 15 months. There is substantial variation in the length of the intervening interval. The interval is less than 100 trading days in 34 cases, the shortest being 2 calendar days; the interval is more than 500 trading days (approximately two years) in 20 cases.

In addition to the initial investment and targeted repurchase announcements, we also collected the dates of *Wall Street Journal* reports of related events that occurred between the initial investment and targeted repurchase announcements. Seventy-nine observations have such related intervening announcements. The related events include the purchase of additional shares, a change in investment plans by the acquiring party, a takeover attempt or proxy contest, any opposition to the investment by the target company, developments in a lawsuit and a third party attempt to acquire control. There is at least one intervening report that additional shares were acquired for 56 observations. There was an intervening announcement of a tender offer or merger proposal by the acquiring firm in only 3 cases. In another 12 instances, the acquiring firm or individual(s) announced plans to seek representation on the target firm's board of directors.

Table 2 presents selected summary statistics for the investments in common stock that culminated in a targeted repurchase. Based on average sample
Table 1

Distribution by Calendar Years of Initial Announcement of Targeted Repurchase

<table>
<thead>
<tr>
<th>Year (1)</th>
<th>Number of Initial Investment Announcements&lt;sup&gt;a/&lt;/sup&gt; (2)</th>
<th>Number of Targeted Repurchase Announcements&lt;sup&gt;b/&lt;/sup&gt; (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1976</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>1977</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>1978</td>
<td>16</td>
<td>5</td>
</tr>
<tr>
<td>1979</td>
<td>20</td>
<td>8</td>
</tr>
<tr>
<td>1980</td>
<td>27</td>
<td>21</td>
</tr>
<tr>
<td>1981</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>1982</td>
<td>17</td>
<td>26</td>
</tr>
<tr>
<td>1983</td>
<td>5</td>
<td>28</td>
</tr>
<tr>
<td>1976-83</td>
<td>112</td>
<td>112</td>
</tr>
</tbody>
</table>

<sup>a/</sup> The initial investment announcements include a *Wall Street Journal* article if available or a report of a Schedule 13D filing in either the *SEC News Digest* or the *Insiders Chronicle*.

<sup>b/</sup> The announcements were reported in *The Wall Street Journal* or *The New York Times*. 
Repurchase Firms' Two Days Prior to the Targeted Repurchase Announcement

Premiums are calculated as the difference between the repurchase price and the stock price of the

<table>
<thead>
<tr>
<th>Premium</th>
<th>Total Repurchase</th>
<th>Per Share Repurchase</th>
<th>Initial Investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premium</td>
<td>2.8 1.5 3.7</td>
<td>19.0 16.1 18.2</td>
<td>12.8 9.9 7.6</td>
</tr>
<tr>
<td>Not Applicable</td>
<td>30.9 9.8 25.9</td>
<td>112 28.7 III</td>
<td>7.6 6.1 4.6</td>
</tr>
<tr>
<td>110</td>
<td>4.7 1.3 9.2</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td>110</td>
<td>5.5 9.6 6.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>110</td>
<td>5.6 2.5 7.3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dollar Value in Millions

<table>
<thead>
<tr>
<th>Mean Size</th>
<th>Standard Sample Deviation Size</th>
<th>Mean Size</th>
<th>Standard Sample Deviation Size</th>
<th>Mean Size</th>
<th>Standard Sample Deviation Size</th>
<th>Mean Size</th>
<th>Standard Sample Deviation Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>110</td>
<td>4.7 1.3 9.2</td>
<td>110</td>
<td>4.7 1.3 9.2</td>
<td>110</td>
<td>4.7 1.3 9.2</td>
<td>110</td>
<td>4.7 1.3 9.2</td>
</tr>
<tr>
<td>110</td>
<td>5.5 9.6 25.9</td>
<td>110</td>
<td>5.5 9.6 25.9</td>
<td>110</td>
<td>5.5 9.6 25.9</td>
<td>110</td>
<td>5.5 9.6 25.9</td>
</tr>
<tr>
<td>110</td>
<td>5.6 2.5 7.3</td>
<td>110</td>
<td>5.6 2.5 7.3</td>
<td>110</td>
<td>5.6 2.5 7.3</td>
<td>110</td>
<td>5.6 2.5 7.3</td>
</tr>
</tbody>
</table>

Table 2

Summary Statistics for Targeted Repurchases
values, the size of the investment position in common stock increases substantially from the initial investment announcement to the targeted repurchase announcement. The average percentage of ownership stake increases from 7.6% to 12.8%. The average dollar value of the initial investment position is $14.5 million and the average value of the repurchase transaction is $30.9 million. The average premium paid over market value at the time of the targeted repurchases is 19% or $4.7 million. On average the premium paid in the targeted repurchase is 2.8% of the value of the repurchasing firm's common stock measured two days before the targeted repurchase announcement. Thus, the premiums paid in targeted repurchases are economically significant.

Each targeted repurchase is classified by whether it is associated with a control contest at any time prior to the repurchase announcement and whether it is accompanied by a standstill agreement. The first row of Table 3 indicates that 33 repurchases, or 30% of the sample, are associated with a prior control contest. We include an observation in the prior control contest category when was an indication that the acquiring firm or investor sought board representation or control, or considered seeking board representation or control. Only 5 of the targeted repurchases were preceded by a tender offer for control or a merger proposal. It was reported prior to another 10 repurchases that the investor was considering a takeover attempt. In 14 cases plans to seek board representation were announced. In 10 of these cases, a proxy contest ensued. Consideration of plans to seek representation on the target firm's board was announced prior to another 5 repurchases. This summary of actions that precede a targeted repurchase agreement does not support the popular view that targeted repurchases generally thwart an outstanding takeover attempt. Also, a standstill agreement, in addition to the targeted repurchase, was reported in 39 cases. Fifteen targeted repurchases are associated with both prior control contests and standstill agreements.
### Table 3

**Number of Targeted Repurchases With Prior Control Contests and Standstill Agreements**

The sample period for targeted repurchase announcements is 1978-83.

<table>
<thead>
<tr>
<th>Type of Targeted Repurchase</th>
<th>Number of Observations</th>
<th>Proportion of Total Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior Control Contests</td>
<td>33</td>
<td>.295</td>
</tr>
<tr>
<td>Takeover Attempt</td>
<td>5</td>
<td>.045</td>
</tr>
<tr>
<td>Consideration of a Takeover Attempt</td>
<td>10</td>
<td>.089</td>
</tr>
<tr>
<td>Plans to Seek Board Representation</td>
<td>14</td>
<td>.125</td>
</tr>
<tr>
<td>Consideration of Plans to Seek Board Representation</td>
<td>4</td>
<td>.036</td>
</tr>
<tr>
<td>Standstill Agreements</td>
<td>39</td>
<td>.348</td>
</tr>
<tr>
<td>Control Contests and Standstill Agreements</td>
<td>15</td>
<td>.134</td>
</tr>
<tr>
<td>Total Number of Repurchases</td>
<td>112</td>
<td>1.00</td>
</tr>
</tbody>
</table>
Only one repurchasing firm (Zapata Corp.) appears more than once in the sample of targeted repurchases. However, there are several firms that appear more than once in the sample as the seller in a targeted repurchase transaction. The most frequently represented nationally listed selling firms are Gulf and Western (9 purchases), Crane Corp. (4 purchases) and Walco National (4 repurchases). In addition, firms controlled by Victor Posner are associated with 8 targeted repurchases in the sample. Carl Icahn and the Belzburgs are each associated with 3 repurchases.

3. Method of Measuring Abnormal Returns

The event study method pioneered by Fama, Fisher, Jensen, and Roll (1969) is used to measure the price effects of the initial investment, intermediate and outcome announcements. Since most stocks tend to move up or down with the market, the realized stock returns are adjusted for market-wide movements to isolate the component of the returns due to events related to the investment. This adjustment is accomplished using linear regression to estimate the following market model: 5

\[ R_{jt} = \alpha_j + \beta_j R_{mt} + \epsilon_{jt} \]  

(1)

The parameter \( \beta_j \) measures the sensitivity of the jth firm's return \( R_{jt} \) to movements in the market index \( R_{mt} \). The term \( \beta_j R_{mt} \) in equation (1) is the portion of the return to security j that is due to market-wide factors. The parameter \( \alpha_j \) measures that part of the average return of the stock which is not due to market movements. Lastly, \( \epsilon_{jt} \) measures that part of the return to the firm which is not due to movements in the market or the firm's average return.

Two sets of coefficients are estimated for each firm to incorporate potential changes in the market model parameters. Coefficients before the

5. Fama (1976) describes the market model in detail.
initial announcement, $\alpha_B$ and $\beta_B$, are estimated using daily returns beginning 260 trading days before the initial announcement and ending 61 days before the initial announcement. Similarly, coefficients after the targeted repurchase announcement are estimated over the period beginning 61 days after the announcement (if returns are available) thorough 260 days after the announcement. In those cases in which 100 days of data are not available to estimate either the before or after coefficient, returns before the initial announcement and after the outcome announcement are combined to estimate the coefficients. In all cases, returns for the 60 days before the initial announcement through 60 days following the outcome announcement are excluded from the estimation period.

Prediction errors are calculated for each firm for 60 days prior to the initial announcement through 60 days after the targeted repurchase announcement according to the following expression:

$$PE_{jt} = \begin{cases} R_{jt} - (\alpha_j + \beta_j R_{mt}) & \text{for } t < \text{initial announcement} \\ R_{jt} - (\alpha_j + \beta_j R_{mt}) & \text{for } t \geq \text{initial announcement} \end{cases}$$

The prediction errors equal the deviation of the daily returns from their estimated normal relation with the market and represent abnormal returns. The average abnormal return over an interval of days defined relative to an event date for a sample of firms is calculated by summing the prediction errors over the holding period for each firm and then averaging across firms.\(^6\)

To test the statistical significance of the abnormal returns, we compute the following $t$-statistic:

\[-------\]

6. When there are missing stock returns within a holding period, the normal return is cumulated over the days in which there are missing stock returns. This cumulative normal return is subtracted from the next observed stock return.
where $\tau_1$ and $\tau_2$ are the first and last days of the interval; $J$ is the number of observations and $\text{Var}(PE_{j,t})$ is the variance of the prediction error of firm $j$ on day $t$. The variance of the prediction errors is:

$$\text{Var}(PE_{j,t}) = S_j^2 \left[ 1 + \frac{1}{N} + \frac{(R_{m,t} - \tilde{R}_{mj})^2}{(N - 1)(N - 2)\text{Var}(R_m)} \right]$$

In (4), $S_j^2$ is the residual variance from the market model regression, $\tilde{R}_{mj}$ is the average market return over the estimation interval, and $N$ is the number of days used to estimate the market model. The $t$-statistic adjusts for heteroskedasticity in the prediction errors by standardizing the cumulative prediction error for each firm by its standard deviation. This standardization gives less weight to the prediction errors with more volatility, which are measured less precisely.

4. Common Stock Returns

4.1 Abnormal Returns Prior to and at the Initial Investment Announcement

Table 4 presents the average prediction errors for repurchasing and selling firms for selected holding periods prior to and including the initial investment announcement. These announcements appear to increase the stock to calculate the abnormal return.

7. The formula for the variance of $PE_{j,t}$ assumes that prediction errors are independent across firms. We calculate the variance of the cumulative prediction errors over event time as the sum of the individual variances. This is only an approximation since it ignores the covariances between prediction errors.

8. The average abnormal return and the $t$-statistic can differ in sign because the former assigns uniform weights to each observation whereas the latter assigns non-uniform weights (equal to the inverse standard deviation) to each observation. A difference in sign is most likely to occur when the
Table 4

Average Prediction Errors Before and At the Initial Investment Announcement. The sample period for targeted repurchase announcements is 1978-1983; t-statistic, percent positive, and sample size are in parentheses.

<table>
<thead>
<tr>
<th>Holding Period a/</th>
<th>Repurchasing Firms</th>
<th>Selling Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID-60 to ID-41</td>
<td>0.74% (1.27, 53, 111)</td>
<td>1.11% (0.95, 48, 52)</td>
</tr>
<tr>
<td>ID-40 to ID-21</td>
<td>3.51 (3.43, 57, 111)</td>
<td>-2.72 (-1.76, 38, 52)</td>
</tr>
<tr>
<td>ID-20 to PD-1</td>
<td>2.57 (3.84, 53, 111)</td>
<td>-1.03 (-0.95, 38, 52)</td>
</tr>
<tr>
<td>PD to ID-2</td>
<td>5.25 (8.63, 70, 101)</td>
<td>0.51 (0.85, 45, 47)</td>
</tr>
<tr>
<td>ID-1 to ID</td>
<td>3.68 (13.02, 72, 111)</td>
<td>0.71 (2.02, 54, 52)</td>
</tr>
</tbody>
</table>

**a/** ID is the initial investment announcement date, which is the date of a Wall Street Journal report or the date of a Schedule 13d filing with the SEC. PD is the purchase date, which is the date a five percent position in the target firm was attained. When the purchase date cannot be determined, PD is defined to be 10 days prior to the date of the 13D filing.
prices of both repurchasing and selling firms. The average prediction error for the day before and day of the initial investment announcement is 3.68% for repurchasing firms. This is statistically significant with a t-statistic of 13.02 and 72% of the individual two-day prediction errors are positive. For selling firms, the average prediction error over the two-day initial investment period is 0.71% with a t-statistic of 2.02. These significant positive prediction errors at the initial disclosure of a 13d filing are similar to those reported in Mikkelson and Ruback (1985) for all filings by listed firms that occurred during 1978 through 1980 and are not associated with an outstanding takeover proposal. Therefore, the positive abnormal returns associated with the initial investment announcements are not peculiar to investments that terminate in targeted repurchases.

Table 4 also indicates that repurchasing firms realize positive abnormal returns in each holding period prior to the initial investment announcement. Only the average prediction error in the period ID-60 to ID-41 is not statistically significant. The largest average prediction error for repurchasing firms is 5.25% with a t-statistic of 8.63 which occurs over the period from the purchase date (PD) to two days prior to the initial investment (ID-2). The purchase date is the day that the selling firm first obtained a 5% position in the purchasing firm. In contrast, there are no significant average abnormal returns are close to zero.

9. For 13d filings that are not associated with outstanding takeover proposals, Mikkelson and Ruback (1985) report average prediction errors of 2.88% for target firms and 1.17% for firms that acquired 5% or more of the target firm.

10. In many cases we identified the filing date of Schedule 13d, but not the date the 5% ownership position was attained. Since regulations require a filing of Schedule 13d within ten days after reaching the 5% level, we chose to define the purchase date as ten days before the filing date. In a few cases there is no purchase date in advance of the earliest public disclosure, because The Wall Street Journal reported plans to purchase shares more than ten days in advance of a filing with the Securities and Exchange Commission.
abnormal returns for selling firms prior to the initial disclosure.

The 13d filing date can occur up to ten days following the attainment of the five percent block and the filing firm can add to its ownership stake over this period. Therefore, the difference between the abnormal returns during the period PD to ID-2 for repurchasing and selling firms suggests that the market reacts to the increased trading activity in the repurchasing firm's shares prior to the disclosure of the filing firm's identity. The positive abnormal returns for repurchasing firms that precede the purchase date may also reflect the increased trading activity in the repurchasing firm's shares since the filing firm may have spread its purchases over several weeks prior to obtaining a five percent position.

4.2 Abnormal Returns At and After The Targeted Repurchase Announcement

Table 5 presents the average abnormal returns for repurchasing and selling firms associated with targeted repurchase announcements and during selected holding periods following the announcements. The average prediction error for the day before and day of the announcement is -3.22% for repurchasing firms with a t-statistic of -9.64 and 65% of the individual two-day prediction errors are negative. In contrast, the average prediction error over the same two-day period is 1.82% for selling firms with a t-statistic of 5.96 and 66% of the individual two-day prediction errors are positive. These results, which are consistent with the findings of Bradley and Wakeman (1983), Dann and DeAngelo (1983), Holderness and Sheehan (1985), and Mikkelson and Ruback (1985), indicate that targeted repurchase announcements decrease the stock prices of repurchasing firms and increase the stock prices of selling firms.

There are no significant abnormal returns for selling firms in any of the holding periods following the repurchase announcement. There are significant abnormal returns following the repurchase announcement for repurchasing firms, but the data are difficult to interpret. The average prediction error over the
Table 5

Average Prediction Errors At And After
The Announcement Of A Targeted Repurchase

The sample period for the targeted repurchase announcements
is 1978-1983; t-statistics, percent positive
and sample size are in parentheses.

<table>
<thead>
<tr>
<th>Holding Period a/</th>
<th>Repurchasing Firms</th>
<th>Selling Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>TR-1 to TR</td>
<td>-3.22%</td>
<td>1.82%</td>
</tr>
<tr>
<td></td>
<td>(-9.64, 35, 112)</td>
<td>(5.96, 66, 112)</td>
</tr>
<tr>
<td>TR+1 to TR+10</td>
<td>-0.31</td>
<td>-1.00</td>
</tr>
<tr>
<td></td>
<td>(3.02, 45, 112)</td>
<td>(-0.94, 38, 53)</td>
</tr>
<tr>
<td>TR+11 to TR+20</td>
<td>-1.24</td>
<td>0.19</td>
</tr>
<tr>
<td></td>
<td>(-1.74, 34, 112)</td>
<td>(0.45, 51, 53)</td>
</tr>
<tr>
<td>TR+21 to TR+40</td>
<td>2.33</td>
<td>1.66</td>
</tr>
<tr>
<td></td>
<td>(3.43, 54, 112)</td>
<td>(1.58, 51, 53)</td>
</tr>
<tr>
<td>TR+41 to TR+60</td>
<td>-0.34</td>
<td>-0.55</td>
</tr>
<tr>
<td></td>
<td>(-0.86, 46, 107)</td>
<td>(-0.37, 51, 53)</td>
</tr>
</tbody>
</table>

a/ TR is the date of the targeted repurchase announcement.
period beginning on the day after and ending ten days after the repurchase announcement (TR+1 to TR+10), which is an equally weighted average of the sum of the adjusted prediction errors for the 112 observations during this period, is \(-0.31\%\). But the t-statistic, which weights the adjusted prediction error by their standard deviation, is 3.02. Thus, the assessment of the abnormal returns in this holding period depends on the weighting of individual observations. In the period TR+11 to TR+20 there are negative abnormal returns of \(-1.24\%\) with a t-statistic of \(-1.74\). The average prediction error over the next twenty days, TR+21 to TR+40, is positive with a t-statistic of 3.43. Finally, the average prediction error over the period TR+41 to TR+60 is \(-0.34\), which is not statistically significant. The differences in the signs of the average prediction errors in various intervals following the repurchase announcement suggest that the two-day average prediction error at the repurchase announcement is an unbiased estimate of the valuation effects of the announcement.

4.3 Total Stock Price Effects

To measure the valuation consequences of the investments that terminate in targeted repurchases, we aggregate the abnormal returns from the beginning of the investment through its conclusion. We define the beginning of the investment as the day the selling firm attained a five percent position in the repurchasing firm, which is the purchase date. The beginning of the investment could alternately be defined as either the initial investment announcement.

11. Bradley and Wakeman (1983) report negative abnormal returns of for repurchasing firms about \(-5.8\%\) over the interval TR+1 to TR+18 which they argue is consistent with resolution of uncertainty that the targeted repurchase will occur. In our data the average prediction errors in the twenty days following the targeted repurchase announcement is ambiguous since the average prediction error and t-statistic differs in sign in the period TR+1 to TR+10. Also, the period TR+1 to TR+20 is arbitrary since we have no evidence that uncertainty is in fact resolved during this time period. The choice of the time period appears to be critical since the abnormal return during the next twenty days, TR+21 to TR+40, is 2.33\% with a t-statistic of 3.43.
which follows the purchase date, or a day prior to the purchase date. While
the initial investment date is the first public announcement of the 13d filing,
the significant abnormal return for repurchasing firms over the interval from
the purchase date through two days before the initial investment indicates that
the market reacts to the increased trading activity in the shares of the
repurchasing firm prior to the initial disclosure. Since the increased trading
activity is associated with the investment, these abnormal returns should be
included in the measure of the valuation consequences of the investment. The
positive abnormal returns for repurchasing firms prior to the purchase date may
also be due to the increased trading in the repurchasing firm, which suggests
that the beginning of the investment occurs prior to purchase date. We chose
the purchase date instead of a prior date because it is the first date that we
can identify that the selling firm obtained shares of the repurchasing firm;
the dates of purchases prior to the attainment of a five percent block are
unavailable. The conclusion of the investment is the date on which the
targeted repurchase is announced.

In addition to the abnormal returns at the beginning and end of the
investment, the total valuation consequences of the investment should include
the abnormal returns that occur between the 13d filing and the targeted
repurchases announcement. One possible estimate of the abnormal returns for
the period between the two announcement is the cumulative average prediction
error over the interval. An important difficulty with such a measure is that
the time interval between the initial investment and the targeted repurchase is
sufficiently long that the power of the tests of significance is low; the
average number of trading days between the two announcement is about 300
trading days. Consequently, we employ an alternative procedure in which we
aggregate the abnormal returns on the day before and day of relevant Wall
Street Journal announcements that occurred between the initial investment and
the targeted repurchase. The advantage of this method is that we exclude extraneous events and their effects on stock price. This approach increases the power of our tests by substantially reducing the variance of the total abnormal returns.

To compute the total valuation consequences of the investment, we do not simply sum the series of two-day prediction errors. Instead, we first compute the abnormal price changes over the four stages of the investment: (1) the interval from the purchase date to two days before the initial investment, (2) the initial investment, (3) the intermediate events and (4) the targeted repurchase announcement. These abnormal price changes are divided by the firm's share price on the day before the purchase date to obtain a measure in return form, which we define as the adjusted prediction errors. The total abnormal return for the investment, or total adjusted prediction error, is calculated by summing the adjusted prediction errors for each of the four stages of the investment.\(^{12}\)

Table 6 presents the average adjusted prediction errors for repurchasing and selling firms over the four stages of the investment and for the entire investment. For repurchasing firms, the average average adjusted prediction

\[ \tau^{-1} \]

\[ P = \Pi (1 + R_{jt}) \]

\[ \tau^{-1} \]

\[ t = -1 \]

where \( P_{\tau^{-1}} \) is the price index on day \( \tau \) and \( R_{jt} \) is the stock return of firm \( j \) on day \( t \). The adjusted prediction error, \( APE_{jt} \), each day is calculated as:

\[ APE_{jt} = \frac{PE_{jt}}{P_{jt \tau^{-1}}} \]

where \( PE_{jt} \) is the prediction error on day \( \tau \).
errors are positive and statistically significant in the purchase, initial investment, and intermediate holding periods. On the day before and day of the targeted repurchase announcement, the average adjusted prediction error for repurchasing firms is negative and statistically significant. The average total adjusted prediction error, which is the average sum of the adjusted prediction errors in each stage of the investment, measures the valuation consequences of the entire investment. The average total adjusted prediction error for repurchasing firms is 6.88% with a t-statistic of 8.06 and 69% of the individual total adjusted prediction errors are positive.

Our measure of the total valuation consequences indicates that on average stockholders of repurchasing firms benefit from investments that result in a targeted repurchase. The data are consistent with the hypothesis that the stock price of target firms rises at the time of the initial announcement of the investment position in anticipation of a favorable outcome, such as a takeover. There are two possible components of the negative abnormal returns at the repurchase announcement: the reversal of expectations formed at the initial announcement and the premium paid to repurchasing stockholders. Since the total abnormal return is positive and statistically significant, the increase in stock price associated with expectations formed at the initial announcement of the investment more than offsets the stock price effects of the targeted repurchase.

The average adjusted prediction errors for selling firms are positive during the four stages of the investment process. The average total adjusted
Table 6

Average Total and Holding Period Adjusted Prediction Errors
The sample period for targeted repurchase announcements is 1978-1983; t-statistics, percent positive and sample size are in parentheses.

<table>
<thead>
<tr>
<th>Holding Period</th>
<th>Repurchasing Firms</th>
<th>Selling Firms</th>
<th>Matched Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase Interval a/</td>
<td>5.35 (8.08,69,101)</td>
<td>0.49 (0.63,43,47)</td>
<td>1.68 (2.83,69,45)</td>
</tr>
<tr>
<td>Initial Investment b/</td>
<td>3.68 (12.61,72,111)</td>
<td>0.74 (1.94,52,52)</td>
<td>2.08 (6.62,69,49)</td>
</tr>
<tr>
<td>Intermediate b/</td>
<td>2.86 (4.35,65,79)</td>
<td>-0.06 (-0.43,57,37)</td>
<td>0.84 (0.40,55,33)</td>
</tr>
<tr>
<td>Targeted Repurchase b/</td>
<td>-3.82 (-10.15,32,112)</td>
<td>2.10 (5.88,66,53)</td>
<td>-0.41 (-0.48,49,49)</td>
</tr>
<tr>
<td>Total c/</td>
<td>6.88 (8.06,69,111)</td>
<td>3.62% (3.70,69,52)</td>
<td>3.77% (4.53,63,49)</td>
</tr>
</tbody>
</table>

a/ The purchase interval is from the purchase date through two days before the initial investment announcement.

b/ Includes the day before and day of the announcement.

c/ The total average adjusted prediction error is the average sum of the adjusted prediction errors over the purchase interval, the initial investment announcement, the intermediate announcements, and the targeted repurchase announcement. Observations without initial investment or targeted repurchase prediction errors are excluded from these calculations.

d/ Statistics in this column are for a sample of 49 observations in which data are available for both repurchasing and selling firms. Adjusted prediction errors for each matched observation are calculated as the value-weighted average of the prediction errors for the repurchasing and selling firms, where the value weights equal the equity value of the firms. The variance of the matched observations is the sum of the squared equity value times the variance of the adjusted prediction errors for repurchasing and selling firms divided by the squared sum of the values.
abnormal return is 3.62% with a t-statistic of 3.70 and 69% of the individual adjusted prediction errors are positive. These data, therefore, indicate that the stockholders of selling firms benefit from these investments.

Table 6 also presents the average adjusted prediction errors for 49 observations in which data are available for both repurchasing and selling firms. The adjusted prediction errors for each of these matched observations is calculated as the value weighted average of the adjusted prediction errors for the repurchasing and selling firms. The value weight for the selling firm is its equity value on the day before the purchase date. To avoid double counting, the value weight for the repurchasing firm is the value of common stock that is not held by the selling firm on the day before the purchase date. 13

The combined average adjusted prediction error on the day before and day of the targeted repurchase announcement is -0.41%, which is insignificant. This suggests that the significant average adjusted prediction errors of -3.81% for repurchasing firms and 2.06% for selling firms are due to a wealth transfer from the shareholders of the repurchasing firm to the shareholders of the selling firm. However, the combined average total adjusted prediction error is 3.77% with a t-statistic of 4.53 and 63% of the combined observations are positive. This result, together with the statistically significant average total adjusted prediction errors for repurchasing and selling firms, indicate that these investments on average increase the value of both types of firms.

5. Cross-Sectional Analysis of Abnormal Returns for Repurchasing Firms
5.1 The Effects of Control Contests and Standstill Agreements.

13. The number of shares not held by the selling firm is calculated as the number of shares outstanding on the day before the purchase date minus the number of shares repurchased.
Table 7 reports the average adjusted prediction errors for repurchasing firms for the 32 targeted repurchases that are preceded by a control contest and for the 80 targeted repurchases that are not preceded by such a contest. The abnormal returns for the two types of targeted repurchases are virtually identical in the purchase interval and at the initial investment. The abnormal returns associated with the intermediate announcements, however, are 5.01% for repurchases that are preceded by control contests and 1.68% for other repurchases. These higher abnormal returns for targeted repurchases preceded by control contests reflect the announcements of the attempts to acquire control or board representation that occur during the interval between the initial investment and the targeted repurchase.

The higher positive abnormal return for targeted repurchases preceded by control contests during the intermediate interval is offset by a larger negative abnormal return at the announcement of the targeted repurchase. The abnormal return associated with the targeted repurchase announcements that are preceded by control contests is -6.42% with a t-statistic of -7.29 and 73% of the individual two-day adjusted prediction errors are negative. In contrast, the two-day average adjusted prediction errors for the other targeted repurchases is -2.73% with a t-statistic of -7.38. Consistent with these results, Bradley and Wakeman (1983) find a negative price effect at the announcement of targeted repurchases that are classified as terminating a merger attempt that is several times greater than the price effects of other repurchases.

The average total prediction errors, which measure the valuation consequences of the entire investment, are virtually identical for the two types of targeted repurchases: 7.10% for repurchases preceded by control contests and 6.78% for other targeted repurchases. These results indicate that the stock price changes at the time of the targeted repurchase announcement are
Table 7

Average Total and Holding Period Adjusted Prediction Errors Of Repurchasing Firms Classified By The Presence of Control Contests and Standstill Agreements

The sample period for targeted repurchase announcements is 1978-1983; t-statistics, percent positive and sample size are in parentheses.

<table>
<thead>
<tr>
<th>Holding Period</th>
<th>Control Contests</th>
<th>Non-Control Contests</th>
<th>Standstill Agreement</th>
<th>No Standstill Agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase Interval a/</td>
<td>5.05%</td>
<td>5.48%</td>
<td>3.48%</td>
<td>6.31%</td>
</tr>
<tr>
<td></td>
<td>(3.57,70,30)</td>
<td>(7.32,69,71)</td>
<td>(3.29,65,34)</td>
<td>(7.58,72,67)</td>
</tr>
<tr>
<td>Initial Investment b/</td>
<td>4.69</td>
<td>3.25</td>
<td>4.10</td>
<td>3.45</td>
</tr>
<tr>
<td></td>
<td>(7.94,73,33)</td>
<td>(9.88,72,78)</td>
<td>(7.71,82,39)</td>
<td>(9.89,67,72)</td>
</tr>
<tr>
<td>Intermediate b/</td>
<td>5.01</td>
<td>1.68</td>
<td>4.14</td>
<td>2.02</td>
</tr>
<tr>
<td></td>
<td>(2.74,71,28)</td>
<td>(3.38,61,51)</td>
<td>(4.71,74,31)</td>
<td>(1.79,58,48)</td>
</tr>
<tr>
<td>Targeted Repurchase b/</td>
<td>-6.42</td>
<td>-2.73</td>
<td>-9.15</td>
<td>-0.97</td>
</tr>
<tr>
<td></td>
<td>(-7.29,27,33)</td>
<td>(-7.38,34,79)</td>
<td>(-14.89,15,39)</td>
<td>(-1.69,41,73)</td>
</tr>
<tr>
<td>Total c/</td>
<td>7.10%</td>
<td>6.78%</td>
<td>1.28%</td>
<td>9.91%</td>
</tr>
<tr>
<td></td>
<td>(3.49,84,33)</td>
<td>(7.35,72,78)</td>
<td>(1.09,51,39)</td>
<td>(9.21,79,72)</td>
</tr>
</tbody>
</table>

a/ The purchase interval is from the purchase date through two days before the initial investment announcement.

b/ Includes the day before and day of the announcement.

c/ The total average adjusted prediction error is the average sum of the adjusted prediction errors over the purchase interval, the initial investment, the intermediate announcement, and the targeted repurchase announcement. Observations without initial investment or targeted repurchase prediction errors are excluded from these calculations.
incomplete measures of the economic effects of these investments. The similar total abnormal returns for repurchasing firms in targeted repurchases that are preceded by a control contest and those that are not, indicates that these two types of investments are equally beneficial to the shareholder of repurchasing firms - even though stock price decline associated with the targeted repurchase announcement is larger when it follows the announcement of a control contest.

Table 7 also presents the average adjusted prediction errors for the 39 targeted repurchases that are accompanied by standstill agreements and for the 73 targeted repurchases without such agreements. The abnormal returns for the two subsamples are similar during the first three stages of the investment. But at the targeted repurchase announcement the losses are larger for repurchases that are accompanied by a standstill agreement. For repurchases with standstill agreement, the average adjusted prediction errors at the targeted repurchase announcement are -9.15% with a t-statistic of -14.89 and 75% of the individual adjusted prediction errors are negative. In contrast, the average prediction error at the targeted repurchase announcement is -0.97 for repurchases not accompanied by a standstill agreement which is insignificant with a t-statistic of -1.69.

Unlike the subsample of targeted repurchases that are preceded by a control contest, the larger losses at the targeted repurchase announcement for repurchases accompanied by standstill agreements are not offset by larger gains during the intermediate holding period. Thus, the average total adjusted prediction error for repurchases accompanied by a standstill agreement is 1.28%, which is insignificant. In contrast, the average total prediction errors for repurchases that are not accompanied by a standstill agreement is 9.91% with a t-statistic of 9.21 and 79% of the individual adjusted prediction errors are positive.

The average adjusted returns for repurchasing firms appear to depend on
whether the targeted repurchase is preceded by a control contest and whether it is accompanied by a standstill agreement. The average adjusted prediction errors in Table 7 cannot, however, be used to separate these effects because 15 targeted repurchases are preceded by control contests and are accompanied by standstill agreements.

To isolate the effect of control contests and standstill agreements, we regress the adjusted prediction errors on two binary variables:

$$APE_j = \alpha_0 + \alpha_1 D_{1j} + \alpha_2 D_{2j} + \varepsilon_j$$

where $D_{1j}$ equals 1.0 of the targeted repurchase is preceded by a control contest and zero otherwise; $D_{2j}$ equals 1.0 of the targeted repurchase is accompanied by a standstill agreement and zero otherwise. Table 8 presents the estimated regression equations. The coefficients on the two binary variables are insignificant for the purchase interval, initial investment, and intermediate holding periods. For the targeted repurchase announcement and total holding periods, the coefficient on the standstill binary variable, $\alpha_2$, are negative and statistically significant. The coefficients for the control contest binary variable are smaller than the coefficients for $D_{2j}$ and are statistically insignificant. These regressions indicate that differences in the average abnormal returns for repurchasing firms at the targeted repurchase announcement, and the total throughout the investment, are explained by the presence of a standstill agreement and not the termination of a control contest.

5.2 *Premium and Information Reversal Effects*

In this section, we examine two explanations for the negative abnormal returns for repurchasing firms at the targeted repurchase announcement: the **premium effect** and the **information reversal effect**. The premium effect is the reduction in the stock prices of the repurchasing firm that is associated with
The Relationship Between the Percentage Adjusted Prediction Errors and Characteristics of the Targeted Repurchase

The sample period for targeted repurchase announcements is 1978-1983; t-statistics are in parentheses.

\[ \text{APE}_j = \alpha_0 + \alpha_1 D_{1j} + \alpha_2 D_{2j} + \epsilon_j \]

<table>
<thead>
<tr>
<th>Holding Period for APE(_j)</th>
<th>(\hat{\alpha}_0)</th>
<th>(\hat{\alpha}_1)</th>
<th>(\hat{\alpha}_2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase Interval(^b/)</td>
<td>3.72</td>
<td>0.03</td>
<td>-2.88</td>
</tr>
<tr>
<td></td>
<td>(4.15)</td>
<td>(0.01)</td>
<td>(-0.49)</td>
</tr>
<tr>
<td>Initial Investment(^c/)</td>
<td>3.66</td>
<td>1.04</td>
<td>-0.13</td>
</tr>
<tr>
<td></td>
<td>(3.84)</td>
<td>(0.63)</td>
<td>(-0.08)</td>
</tr>
<tr>
<td>Intermediate (^c/)</td>
<td>0.39</td>
<td>1.04</td>
<td>1.29</td>
</tr>
<tr>
<td></td>
<td>(0.41)</td>
<td>(0.77)</td>
<td>(1.13)</td>
</tr>
<tr>
<td>Targeted Repurchase(^c/)</td>
<td>-0.31</td>
<td>-1.83</td>
<td>-4.97</td>
</tr>
<tr>
<td></td>
<td>(-0.33)</td>
<td>(-1.14)</td>
<td>(-3.97)</td>
</tr>
<tr>
<td>Total(^d/)</td>
<td>8.27</td>
<td>-0.89</td>
<td>-6.27</td>
</tr>
<tr>
<td></td>
<td>(5.84)</td>
<td>(-0.34)</td>
<td>(-2.77)</td>
</tr>
</tbody>
</table>

\(^a/\) APE\(_j\) is the adjusted prediction error in percent for each holding period.

\(^b/\) D\(_{1j}\) is a binary variable which equals 1.0 if a control contest preceded the targeted repurchase and 0.0 otherwise. D\(_{2j}\) is a binary variable which equals 1.0 if the targeted repurchase is accompanied by a standstill agreement and 0.0 otherwise. The regressions are estimated using weighted least squares where the weights equal the inverse of the standard deviation adjusted prediction errors.

\(^b/\) The purchase interval is from the purchase date through two days before initial investment announcement.

\(^c/\) Includes the day before and day of the announcement.

\(^d/\) The total average adjusted prediction error is the average sum of the adjusted prediction errors over the purchase interval, the initial investment, the intermediate announcement, and the targeted repurchase announcement. Observations without initial investment or targeted repurchase prediction errors are excluded from these calculations.
repurchasing its equity at a premium above its market price. The information
reversal effect is the reduction in stock prices that is associated with the
reversal of favorable expectations formed prior to the targeted repurchase
announcement. Mikkelson and Ruback (1985) reports that the stock price rise at
the initial investment announcement appears to be due to the expectation of a
favorable outcome, such as a takeover bid. When investments terminate in
targeted repurchases, these favorable expectations are, at least in part,
reversed. This reversal occurs because the likelihood that the initial
purchaser will make a takeover bid is reduced. The reversal should be largest
when the targeted repurchases are preceded by control contests. Also, the
targeted repurchase may reduce the likelihood of a completed takeover by
another potential bidder because of the repurchase demonstrates that the target
firm will oppose hostile takeover attempts.

To calculate the premium effect we assume that the targeted repurchase is
simply a wealth transfer between the non-participating shareholders of the
repurchasing firm and the shareholders of selling firm. This implies equity
value of the repurchasing firm prior to the targeted repurchase announcement,
\( N_0P_0 \), equals the equity value of the firm after the targeted repurchase,
\( (N_0 - N_b)P_e + N_bP_b \):

\[
N_0P_0 = (N_0 - N_b)P_e + N_bP_b \tag{5}
\]

where \( P_0 \) is the stock price immediately prior to the targeted repurchase
announcement; \( P_b \) is the repurchase price; \( P_e \) is the stock price after the
targeted repurchase announcement; \( N_0 \) is the number of shares outstanding prior
to the repurchase and \( N_b \) is the number of shares repurchased. Rearranging (5)
provides an expression for the change in equity value associated with the
targeted repurchase:
\[(N_0 - N_b) (P_e - P_0) = -N_b (P_b - P_0) \quad (6)\]

We divide both sides of (6) by the equity value of the non-participating shares on the day before the purchase date:

\[\frac{P_0 - P_e}{P_{bd}} = -\frac{N_b (P_b - P_0)}{(N_0 - N_b) P_{bd}} \quad (7)\]

The left-hand side of (7) is the relative price change due to the targeted repurchase announcement which is comparable to the adjusted prediction errors at the targeted repurchase announcement.

Panel A of Table 9 presents the average targeted repurchase adjusted prediction error for the 99 targeted repurchases with reliable information on the per share price of the repurchased shares. The premium as a percent of the equity value of non-participating shares on the day before the purchase date is also presented. The sum of the targeted repurchase abnormal return and the premium as a percent of the initial equity value of non-participating shares is defined as the residual component of the announcement.

For all observations, the average targeted repurchase adjusted prediction error equals -3.60% and the premium as a percent of the initial equity value of non-participating shares is 4.70%. The sum is 1.11% which indicates that stock prices fall less than the amount predicted by the premium effect. Nevertheless, for all observations, and the subsamples of 29 repurchases that are preceded by control contests and the 70 repurchases that are not preceded by control contests, the residual component is, on average, small relative to
Table 9
The Cross-Sectional Relation Firms Between the Targeted Repurchase Equity Value Change the Premium, and the Equity Value Change Prior to the Targeted Repurchase Announcement for Repurchasing Firms

<table>
<thead>
<tr>
<th>Sample</th>
<th>All Observations</th>
<th>Control Contests</th>
<th>No Control Contests</th>
<th>Standstill Agreements</th>
<th>No Standstill Agreements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Observations</td>
<td>99</td>
<td>29</td>
<td>70</td>
<td>31</td>
<td>68</td>
</tr>
</tbody>
</table>

Panel A: Sample Averages

- Targeted Repurchase Adjusted Prediction Error
  - $-3.60\%$  
  - $-6.28\%$  
  - $-2.48\%$  
  - $-8.99\%$  
  - $-1.14\%$

- Premium as a Percent Initial Equity Value $\text{a/}$
  - 4.70  
  - 7.83  
  - 3.41  
  - 4.68  
  - 4.71

- Residual Component $\text{b/}$
  - 1.11  
  - 1.55  
  - 0.92  
  - 4.31  
  - 3.57

Panel B: Regression estimates: $\text{c/}$

\[ \Delta S_{tr,j} = \alpha_0 + \alpha_1 \text{PREMIUM}_j + \zeta_j \]

\[ \alpha_0 \]

\[ (201.21) \]

\[ (213.89) \]

\[ (220.02) \]

\[ (180.02) \]

\[ \alpha_1 \]

\[ (-0.24) \]

\[ (-0.128) \]

\[ (-0.286) \]

\[ (-0.587) \]

\[ (-0.049) \]

\[ (0.17) \]

\[ (0.307) \]

\[ (0.214) \]

\[ (0.354) \]

\[ (0.161) \]

Panel C: Regression estimates: $\text{c/}$

\[ \Delta S_{tr,j} = \gamma_0 + \gamma_1 \text{PREMIUM}_j + \gamma_2 \Delta S_{pretr,j} + \zeta_j \]

\[ \gamma_0 \]

\[ (191.21) \]

\[ (167.97) \]

\[ (202.62) \]

\[ (216.72) \]

\[ (171.76) \]

\[ \gamma_1 \]

\[ (-0.036) \]

\[ (-0.028) \]

\[ (0.009) \]

\[ (-0.378) \]

\[ (0.097) \]

\[ (0.170) \]

\[ (0.335) \]

\[ (0.201) \]

\[ (0.373) \]

\[ (0.159) \]

\[ \gamma_2 \]

\[ (-0.170) \]

\[ (-0.073) \]

\[ (0.228) \]

\[ (-0.124) \]

\[ (-0.146) \]

\[ (0.046) \]

\[ (0.095) \]

\[ (0.051) \]

\[ (0.082) \]

\[ (0.049) \]

$\text{a/}$ Premium as a percent of initial equity value is calculated by dividing the dollar premium by the equity value of non-participating shares of the repurchasing firm on the day before the purchase date, which is the day the seller attained 5% or more of the repurchasing firm's equity.

$\text{b/}$ The residual component is the sum of the target repurchase adjusted prediction error and the premium as a fraction of the initial equity value.

$\text{c/}$ $\Delta S_{tr,j}$ is the equity value change (adjusted for market-wide effects) for non-participating shareholders at the time of the targeted repurchase announcement; $\text{PREMIUM}_j$ is the dollar premium paid to the selling firm; $\Delta S_{pretr,j}$ is the equity value change prior to the targeted repurchase announcement. The regressions are estimated using weighted least squares, where the weights equal the inverse of the standard deviation of the dependent variable.
the adjusted prediction error. But the residual component for the repurchases with standstills is -4.3%, whereas the residual component for other repurchases is 3.57%.

To test the premium effect, we estimate the following regression:

\[ \Delta S_{tr,j} = \alpha_0 + \alpha_1 \text{PREMIUM}_j + \varepsilon_j \tag{8} \]

where \( \Delta S_{tr,j} \) is the change in equity value for the non-participating shares associated with the repurchase and \( \text{PREMIUM}_j \) is the dollar value of the premium paid to the seller. The constant term, \( \alpha_0 \), is included in the regression to capture the average information effect. The premium effect implies that the slope coefficient, \( \alpha_1 \), should equal -1.0. Since the dollar equity value changes are hetroskedastic, we estimate to the regressions using weighted least squares, where the weights equal the inverse of the standard deviation of the dollar equity value change associated with the targeted repurchase.

Panel B of Table 9 presents the estimated regression results for the whole sample and for each subsample. Each of the estimated coefficients on the \( \text{PREMIUM}, \alpha_1 \), is negative. However, the hypothesis that these slope coefficients equals -1.0 as predicted by the premium effect is reject for the sample as a whole and for each subsample except the subsample of targeted repurchases accompanied by standstill agreements. Furthermore, each of the slope coefficients is not statistically different from zero. These results are inconsistent with the premium effect and suggest that the targeted repurchase

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14. \( \Delta S_{tr,j} \) is calculated for each observation by multiplying the adjusted prediction error for the targeted repurchase announcement by the equity value of the non-participating shares on the day prior to the purchase date. \( \text{PREMIUM}_j \) is calculated by multiplying the number of shares repurchased by the difference between the offer price and the market price two days prior to the repurchase.
is not a wealth transfer between the non-participating shareholders of the repurchasing firm and the shareholders of the selling firm.

The two previous studies of targeted repurchases, Dann and DeAngelo (1983) and Bradley and Wakeman (1983), present conflicting evidence on the premium effect. Dann and DeAngelo report in a footnote (page 297) that no significant relationship exists between the equity value change at the targeted repurchase announcement and the premium, a result which is consistent with our findings. Bradley and Wakeman present regression results for a model which is similar to (8). They report (Table 6, page 320) a coefficient on the premium of -1.013, which is consistent with the premium effect. The differences in the results appear to be related to the specification of the regression equations. Dann and DeAngelo estimate their equations in return form; that is they divide both sides of (8) by the equity value of the repurchasing firm prior to the targeted repurchase announcement. In contrast, Bradley and Wakeman estimate their equation in dollar values. Our analysis indicates that such unweighted dollar value regressions are sensitive to outliers and have hetroskedastic errors. Return form regressions appear to be less effected by these difficulties.

To test the information reversal hypothesis, we estimate the following regression equation:

$$\Delta S_{tr,j} = \gamma_0 + \gamma_1 \text{PREMIUM}_j + \gamma_2 \Delta S_{pretr,j} + \epsilon_j$$

where $\Delta S_{pretr,j}$ is the change in equity value from the purchase date through the intermediate events. This calculated by summing the adjusted prediction errors during the purchase interval, initial investment, and intermediate announcement holding periods and multiplying the sum by the equity value of the repurchasing firm on the day before the purchase date. The information
reversal effect implies that \( Y_2 \) should be less than zero.

Panel C of Table 9 presents the regression tests of the information reversal effect. Each of the estimated coefficients on the equity value change prior to the targeted repurchase, \( \hat{Y}_2 \), is negative. The coefficients \( \hat{Y}_2 \) equals -0.17 for the sample as a whole, which is statistically significant with a t-statistic of -3.70. Similarly, the \( \hat{Y}_2 \) coefficients are statistically significant for the subsample without control contests and the subsample without standstill agreements. The coefficients for the smaller control contest and standstill subsamples are not statistically significant with t-statistics of -0.77 and -1.51, respectively. These results suggest that the information reversed effect is an important factor in the cross-sectional variation of the equity value declines associated with targeted repurchase announcements. Each of the \( \hat{Y} \) coefficients on the equity value change is closer to zero than -1.0. The hypothesis that the coefficient equal -1.0 can be rejected for the sample as a whole and for each subsample. This implies that the information reversal is not complete and is consistent with the positive and statistically significant average total prediction error for repurchasing firms.

6. Conclusions

This study presents new evidence about investments in common stock that result in a targeted repurchase. First, for most investments, the total stock price effect on the repurchasing firm is positive. The holder of shares from the initial investment through the targeted repurchase typically benefits. Second, the stock price declines at the targeted repurchase are explained more by the positive stock return prior to the repurchase than by the premium paid in repurchase. Thus, the fall in stock price at the targeted repurchase does not simply reflect a wealth transfer to the selling stockholder. Third, the targeted repurchases typically do not thwart outstanding takeover attempts.
Only 5 of 112 repurchases were from an investor who had announced a merger proposal or tender offer for control.

Our evidence implies that it is misleading to interpret the stock price effects of targeted repurchases in isolation of the price effects of preceding events that are related to the investments. The price drop at the targeted repurchase appears to be a partial reversal of the positive stock price effects of prior events. This casts doubt on the view that the targeted repurchase harms the repurchasing firm's shareholders.

The evidence presented in this paper does resolve the debate about whether targeted repurchases harm the shareholders of the repurchasing firm. This issue cannot be resolved without identifying whether a more favorable course of action, such as takeover, was available to the managers of the repurchasing firm.
REFERENCES


