Merger Proposals, Managerial Discretion, and Magnitude of Shareholders' Wealth Gains

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Recently, the market for corporate control has attracted much attention. Scholars have attempted to ascertain whether managerial resistance is in the interests of shareholders. This study compares the average actual changes in wealth of accepted merger proposals with those of rejected merger proposals. It also compares the realized changes in shareholder wealth of the rejected proposals with the realizable shareholder wealth changes. In either case, managerial resistance leads to smaller gains in wealth. Based on these results, we cannot reject the view that managerial resistance is detrimental to the interests of shareholders.

I. Introduction

A. Issue and Objective

The market for corporate control has attracted much attention. In particular, is managerial resistance in the interest of shareholders? Walking and Long (1984) summarize the two opposing views, the shareholder welfare hypothesis and the managerial welfare hypothesis. According to the shareholder welfare hypothesis, "Target managements that oppose tender bids frequently defend their actions by claiming that the bid price is inadequate." In contrast,
under the managerial welfare hypothesis, "Target managements will base their response to a
55)).

Unfortunately, the evidence is contradictory. On the one hand, Smiley (1976) and Kummer
and Hoffmeister (1978) found that managers who perform poorly, realizing the consequences
of renegotiating (and/or seeking employment elsewhere), are more likely to resist takeover
attempts. Similarly, Walkling and Long (p. 62) found that "Managers with smaller personal
wealth changes tend to oppose offers, while those with larger personal gains do not." These
findings support the managerial welfare hypothesis. In contrast, Dodd (1980) and Bradley
(1980) conclude that target managements do not act to the detriment of shareholders' best
interests when they reject an outstanding merger bid.

Before trying to reconcile these contradictory studies, we need to discuss both Dodd’s and
Bradley’s research. They examine the impact of managerial resistance on shareholder wealth,
and ask whether managerial resistance is in the best interests of shareholders. Walkling and
Long (and others), on the other hand, examine the endogeneity of managerial decisions. They
ask whether managerial decisions are tied more closely to managerial utility than to
shareholder wealth. From this perspective, these two types of studies are complementary. The
present paper examines whether Dodd and Bradley’s conclusion holds when the realized
changes in shareholder wealth are compared with the realizable shareholders wealth changes.

B. A Brief Review of the Studies by Dodd and Bradley

Dodd (1980) proposed that rejected merger proposals can be used to test whether or not
managerial resistance is in the best interests of shareholders. He claimed (p. 125) that
managerial resistance can be viewed as maximizing shareholder wealth if cancelled merger
proposals—vetoed by management—attract a more favorable market response than cancelled
merger proposals that were not vetoed by management. 3 Dodd stated (p. 137):

...when the sample of cancelled merger proposals is classified on the basis of whether or not the
target firm’s management terminate the negotiations, the market reaction is different. Where the
merger proposal is vetoed by incumbent management, target stockholders earn, on average,
10.95% over the duration of the proposal and this represents a permanent revaluation of the
targeted shares. In the remaining cancelled proposals it is not clear from the termination
announcement that the incumbent managements have used their veto power—either bidder firm
managements retract their offers or no reason for the terminations are given. Stockholders of
target firms in these cases earn only 0.18% over the duration of the proposal...

Bradley argued that managerial resistance is consistent with maximization of shareholders’
wealth if the shareholders’ gain in wealth associated with rejection of tender offers is greater
than the premium offered by the bidding firm. In his examination, Bradley (1980) found:

In a sample of 97 unsuccessful tender offers, target stockholders realized an average capital gain

2 Nevertheless, note that the contradictory evidence we observed may be caused by the differences in
methodology in the previous studies.

3 Putting aside the issues of the inclusion of inappropriate merger proposals and heterogeneity in vetoed vs.
non-vetoed merger proposals, Dodd’s test is akin to our intergroup comparison. His results show that
shareholder wealth gain associated with the non-vetoed merger proposals exceeds its counterpart associated
with the vetoed merger proposals. Accordingly, his results indicate that managerial opposition harms
shareholders.
of 45%. This average post-offer return exceeds the average premium of these rejected offers, which is 29%. (In other words, stockholders were 16% better off in these rejected cases.)

He concluded:

This finding lends support to an implication of the theory that target managers may be acting in their stockholders' interests by opposing an outstanding offer.

There are two problems in Dodd's comparison of cancelled merger proposals according to whether they are vetoed by the target firm's management. First, his treatment of non-vetoed cancelled merger proposals is improper for several reasons. On the one hand, non-vetoed cancelled merger proposals should be grouped with vetoed cancelled merger proposals if they are caused by managerial resistance in the targeted firm. (Under such circumstances, the targeted management resist both vetoed and non-vetoed cancelled merger proposals.) On the other hand, non-vetoed cancelled merger proposals should be excluded from his sample if they are terminated by the raiding firm or enjoined from completion by the court, because the targeted management does not cause the termination. But more importantly, the observed positive CAR (Cumulative Average Residuals) of vetoed merger proposals indicates only that shareholders gain from such proposals. The sign of the CAR cannot tell us whether top managers are maximizing shareholder wealth unless we also know the magnitude of the would-be wealth gain, had the vetoed proposals been accepted.

These two criticisms do not apply to Bradley's study. To judge whether or not managerial resistance is in the interest of shareholders, Bradley compared the average market returns of the rejected tender offers with the average premium offered by the raiding firm. Nevertheless, the Bradley's sample is a source of concern. First, offers withdrawn because of target management opposition are omitted from his data (Bradley (1980, p. 349)). Second, since shareholders make the final decision to accept or reject tender offers, Bradley's results may be attributed to the shareholders' decision (Dodd (1980, p. 106, fn 5)).

C. Scope and Structure of this Study

To correct these limitations, our research has the following three features. First, we follow Dodd and use merger proposals instead of interfirm tender offers, because targeted managers can more directly exert their discretion there. Second, we classify merger proposals on the basis of managerial decisions (acceptance or rejection) after removing cases which were terminated by the raiding firm or enjoined from completion by the court. Finally, we compare the average actual wealth gain associated with the rejected merger proposals with the would-be average wealth gain (as Bradley did) to see whether the realizable wealth gain would be greater, had the rejected merger proposals been accepted.

Thus, the current study examines whether a refined test provides evidence inconsistent with the postulate of shareholder wealth maximization. Given the assumption of maximization of shareholders' wealth, Section II derives testable implications from two perspectives. We compare the average actual wealth change of accepted merger proposals with that of rejected merger proposals. For rejected merger proposals, we compare the actual wealth change under

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4 There are only two cases in this category. In one case, the raiding firm (TWR) withdrew its merger proposal after the proposal had been approved by directors and shareholders in the target (General Battery). In the other, Amax and Copper Range were enjoined from completion by the court.
managerial resistance with the would-be wealth change that would have occurred in the absence of managerial resistance. Section III discusses the collection and classification of data, describes event days, and provides empirical evidence. Section IV contains the conclusion.

II. Testable Implications

There are two reasons why managers may be acting in the interest of shareholders when they reject merger proposals. First, in the absence of new merger bids, the targeted management should reject a merger proposal if rejection will increase its stock price by more than the premium offered by the raiding firm. Second, they may reject a merger proposal in order to strike a better deal. ⁵

Accordingly, managerial resistance is consistent with the postulate of shareholder wealth maximization if the rejected cases fare as well as, or better than, accepted cases; or, alternatively, if the actual wealth gain of the rejected cases is greater than its matching would-be wealth gain, had the rejected cases been accepted. ⁶

A. The One-Factor Market Model

Our "event" model follows Dodd's application of Fama, Fisher, Jensen, and Roll (1969) (FFJR).

This methodology uses an equation to determine the equilibrium return, and attributes deviation from this equilibrium return to some specific event. The FFJR model posits that the underlying return is generated as

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

where

- \( Y_{jt} \) = continuous rate of return for firm \( j \) over day \( t \),
- \( Y_{mt} \) = continuous rate of return on a value weighted market portfolio over day \( t \),
- \( \alpha_j \) = \( E(Y_{jt}) - \beta_j E(Y_{mt}) \),
- \( \beta_j \) = \( \text{cov}(Y_{jt}, Y_{mt})/\text{var}(Y_{mt}) \), and
- \( \epsilon_{jt} \) = residual return of firm \( j \) over day \( t \) reflecting firm-specific or industry-specific events or random price fluctuation; by assumption, \( E(\epsilon_{jt}) = 0 \), \( \text{var}(\epsilon_{jt}) = \sigma_j^2 \), and \( \text{cov}(\epsilon_{jt}, Y_{mt}) = 0 \).

⁵ Managerial resistance takes various forms including (1) the sale of valuable assets or a subsidiary, (2) a "lock-up"—in a lockup, the target agrees to sell either stock or an attractive part of the company to an acquirer of its choice, and (3) by adopting supplement stock plans (Source: Newsweek, May 11, 1981). In the present study, managerial resistance is defined operationally to occur where the board of directors of the targeted company rejects the merger proposal at the time of the first bid. Moreover, it is hypothesized that a shareholder-wealth-maximizing resistance can be carried out in two ways. The targeted management can induce the original bidder to agree to more favorable terms by successful negotiation with the bidder. Alternatively, the targeted management can send out the valuable information that the target is worth more than it currently quoted in the corporate control market to other potential, more generous, bidders. A referee noted that David P. Baron (1983, p. 322) discussed optimal resistance strategy for a target whose management has a preference for control and hence has interests that diverge from those of target shareholders.

⁶ Theoretically, there is a third possibility. We can compare the would-be wealth change, had the accepted cases been rejected, with the actual wealth change associated with such accepted cases. However, I have failed to figure out way(s) to measure the would-be wealth changes. Hence, I will limit my comparisons to the two tests stated in the text.
The measure of abnormal performance for \( N \) securities over \( E \) event period days is the cumulative average excess returns, \( \text{CAR}_{\text{NE}} \), which can be calculated as

\[
\text{CAR}_{\text{NE}} = \frac{1}{N} \sum_{\tau = r_1}^{\tau_2} \sum_{j=1}^{N} R_{j\tau},
\]

where

\[
R_{j\tau} = Y_{j\tau} - (\alpha_j + \beta_j Y_{m\tau}), \quad \text{excess return},
\]

\[
E = \tau_2 - \tau_1 + 1, \quad \text{number of trading days}.
\]

**List of Variables.**

- \( n \): number of interested merger proposals;
- \( n_A \): number of merger proposals accepted at first bid;
- \( n_R \): number of merger proposals rejected at first bid;
- \( n_k^e \): number of target firms which reject the first bid and accept a later bid within the next 12 months;\(^7\)
- \( n_k^f \): number of target firms which reject the first bid and do not accept a successive bid in the next 12 months;
- \( p_f \): bidding price contained in the first merger proposal;
- \( p_l \): bidding price contained in the last accepted revised or new merger offer;
- \( p_o \): base price, the arithmetic mean of stock prices before the arrival of the original merger proposal.

**B. Test I, Relative Market Performance: An Intergroup Comparison of Rejected and Accepted Merger Proposals**

The cumulative average excess returns of the rejected group is

\[
\text{CAR}_{\text{R,E}} = \frac{1}{n_R} \sum_{\tau = r_1}^{\tau_2} \sum_{j \in R}^{n_R} R_{j\tau},
\]

The cumulative average excess returns of the accepted group is

\[
\text{CAR}_{\text{A,E}} = \frac{1}{n_A} \sum_{\tau = r_1}^{\tau_2} \sum_{j \in A}^{n_A} R_{j\tau}.
\]

The null hypothesis is that the CAR of the rejected group is no less than the CAR of the accepted group. The alternative hypothesis drawn from the managerial utility maximization can be stated as follows: the CAR of the accepted group is greater than the CAR of the rejected group.

\(^7\) Asquith (1980) arbitrarily chose one calendar year as the critical period to make such judgment.
C. Test II, Actual Wealth Change versus Would-be Wealth Change: An Intragroup Comparison in the Rejected Group

The would-be average excess return without managerial resistance is

\[ AR_w(R) = \frac{1}{n_R} \sum_{j \in R} \frac{p_j f - p_j o}{p_j o} . \]

The actual average excess return with managerial resistance is

\[ AR_a(R) = \frac{1}{n_R} \left[ \sum_{j \in R} \frac{p_j f - p_j o}{p_j o} + \sum_{j \in R^d} \sum_{r=1}^{r_2} R_{jr} \right] . \]

The null hypothesis is that the actual average excess return is no less than the would-be average excess return. The alternative hypothesis drawn from the managerial utility maximization is: the average would-be excess return is greater than the average actual excess return.

III. Empirical Analysis

A. Collection and Classification of the Merger Proposals

The Wall Street Journal Index, the source of the merger data, is composed of two parts—General News Index and Corporate News Index. The sample of merger proposals include all those appearing under the heading Mergers and Acquisitions in the General News Index, in which the date of announcement falls within the period starting January 1, 1971, and ending December 31, 1980. Seven screening rules exclude irrelevant cases or cases with inadequate data. 8 After these screens, 303 cases remained. Applying the screening rules once again to Corporate News Index and/or microfilms of the Wall Street Journal, a preliminary sample 60 cases was obtained. 9 (See Appendix A for a breakdown of the unusable cases.)

8 Specifically, we exclude: i) cases in which the means of acquisition is a tender offer; ii) cases in which the merging units are non-business concerns, e.g., unions; iii) cases in which the merging firms are privately held firms, or those which include a privately held or foreign-owned targeted firm; iv) cases in which the merging firms form a new corporation by eliminating both existing firms; v) cases in which the merging firms belonging to the following three regulated industries—(a) airlines, (b) railroads, and (c) financial institutions; vi) cases in which the target is the raiding firm’s own subsidiary; vii) cases in which the merger proposal was withdrawn by the bidding firm or was enjoined from completion by the court. (See Appendix A.)

9 Although I follow the criteria and procedure adopted in Dodd and Asquith, additional criteria are inevitable since additional information is needed concerning managerial decisions toward merger bids, outcomes of managerial resistance, and would-be wealth changes.

Asquith (1980) applied screens to decide which merger proposals are to be included. He has written, “first, the target firm must be independent of the bidding firm, i.e., merger bids for partially owned subsidiaries were not included; second, the target firm must be listed on the NYSE for the seven preceding years; and third, the merger must not have to undergo a lengthy approval process by a regulatory agency.” (pp. 6–7) His first and third criteria are observed. Instead of requiring that the targeted firm be listed on the NYSE, the targeted firm must not be privately held. In the later estimation, I follow the common practice to require that the targeted firm be listed on the CRSP (Center for Research in Security Prices) tape.

Although I follow Dodd, footnote 5, by not including “defensive merger” where a targeted firm finds a merger partner in response to a tender offer by a third firm, my sample differs from his in three aspects. First, my sample includes merger proposals that were preceded by a tender offer, since we see in some cases that the targeted management can successfully resist a merger proposal of this nature (for instance, Marcor (1976) and Amax (1978)). Second, I arbitrarily choose not to include a consolidation where two or more firms combine via the merger to form a new firm because of the difficulty of ascertaining who is taking over whom. Third, my sample does not include cases in which the merger proposal is withdrawn by the bidding firm or is enjoined by a court. See Appendix A.
elimination of cases in which stock prices and/or event days are not available, the final sample contained 16 accepted cases and 14 rejected cases. Four out of the 14 rejected cases were defined to be "retargeted" since they received either a bid revision or a new offer. Among these four retargeted cases, managerial resistance generated improved bids in three cases. (See Appendix B for a classification of the merger proposals.)

B. Event Dates

Among accepted merger proposals, there are at least two event days—the date of announcement and the date of shareholders’ approval. There are also two event days for the rejected merger proposals: the date of announcement and the date of termination. All event dates are the dates reported in the Wall Street Journal.

The date of announcement is the date that a merger proposal (or a letter of intent) has been made to the target.10 Unfortunately, for some cases, the date of shareholders’ approval cannot be located. As a starting point, we checked whether or not these mergers have been completed. If completed, shareholders’ approval must have been obtained. Consequently, the prearranged date for shareholders’ voting is the date of “shareholders’ approval.” For other

Table 1. Cumulative Residuals for Accepted Merger Proposals (N = 16)

<table>
<thead>
<tr>
<th>Target</th>
<th>Period of Duration of Merger Proposal</th>
<th>Cumulative Residuals</th>
<th>Year of Proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parke, Davis &amp; Co.</td>
<td>81</td>
<td>0.59259</td>
<td>1970</td>
</tr>
<tr>
<td>Pyle-National Co.</td>
<td>80</td>
<td>0.314935</td>
<td>1970</td>
</tr>
<tr>
<td>Granite City Steel Co.</td>
<td>92</td>
<td>0.246008</td>
<td>1971</td>
</tr>
<tr>
<td>Standard Kollman Industries Inc.</td>
<td>139</td>
<td>0.03914</td>
<td>1972</td>
</tr>
<tr>
<td>Southwestern Investment Co.</td>
<td>158</td>
<td>0.790988</td>
<td>1972</td>
</tr>
<tr>
<td>Kelsey-Hayes Co.</td>
<td>45</td>
<td>0.319304</td>
<td>1973</td>
</tr>
<tr>
<td>Utah International Inc.</td>
<td>267</td>
<td>0.324952</td>
<td>1975</td>
</tr>
<tr>
<td>Reed Tool Co.</td>
<td>30</td>
<td>0.200262</td>
<td>1975</td>
</tr>
<tr>
<td>Airpax Electronics Inc.</td>
<td>89</td>
<td>0.456145</td>
<td>1976</td>
</tr>
<tr>
<td>Otis Elevator Co.</td>
<td>80</td>
<td>0.146313</td>
<td>1976</td>
</tr>
<tr>
<td>Copper Range Co.</td>
<td>142</td>
<td>0.149375</td>
<td>1976</td>
</tr>
<tr>
<td>Kewanee Industries Inc.</td>
<td>76</td>
<td>0.04463</td>
<td>1977</td>
</tr>
<tr>
<td>Lykes Corp.</td>
<td>285</td>
<td>1.64889</td>
<td>1977</td>
</tr>
<tr>
<td>Hycel Inc.</td>
<td>127</td>
<td>0.283017</td>
<td>1978</td>
</tr>
<tr>
<td>Skil Corp.</td>
<td>42</td>
<td>0.658329</td>
<td>1979</td>
</tr>
<tr>
<td>C.I.T. Financial Corp.</td>
<td>126</td>
<td>0.012579</td>
<td>1979</td>
</tr>
</tbody>
</table>

Summary statistics:  
Mean = 0.389216  
Standard deviation = 0.403993  
Median = 0.298976  
Minimum value = 0.012579  
Maximum value = 1.64889

10 Alternatively, the date of announcement is the date that a tentative agreement has been reached by the involved parties resulting from the merger discussions. Agreement of this sort is evidenced by the use of modifiers such as “agreed in principle,” “reached an agreement (in principle),” “agreed to acquire,” “agreed to its acquisition by,” or “set an accord.”
cases, the date of board approval, the date of completed agreement, or the date that the acquiring firm indicates that it has enough votes.

C. An Intergroup Comparison of Rejected and Accepted Cases

Estimation of excess returns in the FFJR model is a two-step procedure. First, return data from 260 days through 11 days prior to announcement of the merger proposal are used to estimate \( \alpha \), \( \beta \). Then, cumulative excess returns are computed for each accepted or rejected case over the duration of the merger proposal. Following Dodd, the duration of a merger proposal is defined as 10 days before the announcement, through 10 days after approval by target shareholders or termination of the last merger bids (proposal or tender offer). If the targeted share was delisted from the CRSP tape within 10 days after approval by target shareholders or since termination of the last proposal, then the delisting date is the ending date. Tables 1 and 2, respectively, show excess returns for accepted and rejected merger proposals. In these tables, note that the sample mean of the CAR for the accepted group, 0.3892, is greater than its counterpart for the rejected group, 0.1134. The median, which is less susceptible to extreme values, shows a similar pattern. Every targeted firm in the accepted group had a positive wealth gain. For the rejected group, the mean wealth gain is 11.3%, but some firms suffer a substantial wealth loss. In addition, the largest wealth gainer is in the accepted group. Thus, the accepted group apparently attracted a more favorable market reaction than did the rejected group. The probability that this difference occurred by chance is smaller than 0.05. \( t = 1.98 \).  

These results should be interpreted with caution. The observed differences can be attributed

\[ t = \frac{\text{CAR}_{N_A} - \text{CAR}_{N_R}}{\sqrt{\frac{\sum_{i=1}^{N_A} (\text{CR}_{i} - \text{CAR}_{N_A})^2 + \sum_{j=1}^{N_R} (\text{CR}_{j} - \text{CAR}_{N_R})^2}{N_A + N_R - 2}} \sqrt{\frac{1}{N_A} + \frac{1}{N_R}}} \]

= 1.98

where

\( \text{CR}_{i} \): cumulative excess returns for security \( i \), \( i \) belongs to the accepted group, over the duration, \( E \), of the merger proposal,

\( \text{CR}_{j} \): cumulative excess returns for security \( j \), \( j \) belongs to the rejected group, over the duration, \( E \), of the merger proposal,

\( \text{CAR}_{N_A} \): cumulative average excess returns for the accepted group,

\( \text{CAR}_{N_R} \): cumulative average excess returns for the rejected group,

\( E \): the period of duration of the merger proposal,

\( N_A \): number of the accepted cases; \( N_A = 16 \),

\( N_R \): number of the rejected cases; \( N_R = 14 \),

\( d.f. \): degree of freedom, \( N_A + N_R - 2 \), \( P(t > 1.701) = 0.05 \).

\[ \text{CAR}_{N_A} = \text{CAR}_{A} \]

Given that \( \text{CAR}_{N_A} > \text{CAR}_{N_R} \), the rejection of \( \text{CAR}_{N_R} = \text{CAR}_{A} \) guarantees the rejection of \( \text{CAR}_{N_R} > \text{CAR}_{N_A} \).

For computational convenience, we instead test against \( \text{CAR}_{nR} = \text{CAR}_{nA} \). Given that \( \text{CAR}_{nA} > \text{CAR}_{nR} \), the rejection of \( \text{CAR}_{nR} = \text{CAR}_{nA} \) guarantees the rejection of \( \text{CAR}_{nR} > \text{CAR}_{nA} \).
### Table 2. Cumulative Residuals for Rejected Merger Proposals ($N = 14$)

<table>
<thead>
<tr>
<th>Target</th>
<th>Period of Duration of Merger Proposal</th>
<th>Cumulative Residuals</th>
<th>Year of Merger Proposal</th>
<th>Final Outcome of Follow-Up Offer</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Kayser-Roth Corp.</td>
<td>30</td>
<td>0.105197</td>
<td>1971</td>
<td>n.a.</td>
</tr>
<tr>
<td>** CNA Financial Corp.</td>
<td>315</td>
<td>-0.01335</td>
<td>1973</td>
<td>accepted, tender offer</td>
</tr>
<tr>
<td>* Occidental Petroleum Corp.</td>
<td>63</td>
<td>-0.054383</td>
<td>1974</td>
<td>n.a.</td>
</tr>
<tr>
<td>* Staley (A.E.) Co.</td>
<td>23</td>
<td>-0.029957</td>
<td>1975</td>
<td>n.a.</td>
</tr>
<tr>
<td>Falcon Seaboard Inc.</td>
<td>65</td>
<td>-0.15150</td>
<td>1975</td>
<td>n.a.</td>
</tr>
<tr>
<td>Anaconda Co.</td>
<td>250</td>
<td>0.743493</td>
<td>1976</td>
<td>accepted, m.p.</td>
</tr>
<tr>
<td>* Shenandoah Oil Corp.</td>
<td>127</td>
<td>-0.49006</td>
<td>1976</td>
<td>accepted, revised m.p. from the original bidder</td>
</tr>
<tr>
<td>** Marcor Inc.</td>
<td>88</td>
<td>0.149005</td>
<td>1976</td>
<td>n.a.</td>
</tr>
<tr>
<td>* Ex-Cell-O Corp.</td>
<td>51</td>
<td>0.020057</td>
<td>1976</td>
<td>n.a.</td>
</tr>
<tr>
<td>* Koehring Co.</td>
<td>49</td>
<td>-0.17531</td>
<td>1977</td>
<td>n.a.</td>
</tr>
<tr>
<td>** Tropicana Products Inc.</td>
<td>270</td>
<td>0.588014</td>
<td>1977</td>
<td>accepted, m.p.</td>
</tr>
<tr>
<td>* Marshall Field &amp; Co.</td>
<td>23</td>
<td>0.414131</td>
<td>1977</td>
<td>n.a.</td>
</tr>
<tr>
<td>* Amax Inc.</td>
<td>21</td>
<td>0.216495</td>
<td>1978</td>
<td>n.a.</td>
</tr>
<tr>
<td>* McGraw-Hill Inc.</td>
<td>23</td>
<td>0.265173</td>
<td>1979</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

* Did not receive a new bid in one year.
** Received a new bid in one year.

Summary statistics:
- Mean = 0.113357
- Standard deviation = 0.320922
- Median = 0.062627
- Minimum value = -0.49006
- Maximum value = 0.743493
to the decisions of board members if the average quality (wealth-enhancing ability) of proposals is identical across groups, see Asquith (1980, p. 34).

To get around this quality issue, we limit ourselves to the rejected merger proposals we try to gauge the wealth consequences of various managerial decisions.

**D. An Intragroup Comparison within the Rejected Group**

The would-be change in wealth is defined as the percentage change of return per share, had the merger proposal been accepted. Two pieces of information are needed for this computation: the market value per targeted share embedded in the merger proposal, base price index (after adjusting for stock splits and stock dividends of the target upon which the wealth gain can be computed.

We use one of four mutually exclusive methods to estimate the realizable market value per targeted share, depending on how the merger proposal is financed.

1. In a cash offer, the offer price is the realizable market value per targeted share, had the rejected offer been accepted;
2. If the target shareholders have a cash option, the price per share stated in the merger proposal is the realizable market value per targeted share, had the rejected offer been accepted;
3. If the proposed offer is financed through exchange of securities, the computation is in two steps. First, the value of the common stock of the acquiring firm’s share is approximated by its average closing price. The general rule is to use the mean of closing prices over the period starting from the date of the announcement (included) up to 10 days after the merger proposal. Then the estimated value of the acquiring firm’s share is multiplied by the proposed exchange ratio to approximate the realizable market value per targeted share;
4. In some cases, common stocks and/or preferred stocks yet to be issued are in the proposed transaction. If this happens, the estimate reported in the *Wall Street Journal* is used. Market values are summarized in column 2, Table 3.

Base prices are summarized in column 3, Table 3. “Base price” is the arithmetic mean of closing prices within the period starting on day -70 and ending on day -11, where m.p. is the date of announcement of a merger proposal.

In percentage points, the would-be wealth change per targeted share is the value per targeted share embedded in the merger proposal minus the base price per targeted share divided by the base price as shown in column 2, Table 4.

When managerial resistance did not generate improved merger bids, the actual changes are computed with reference to the CRSP tape over the period of durative merger proposals. However, to be consistent with the period used to estimate base prices, the period (m.p. -70 – m.p. -11) to reestimate \( \alpha_j \) and \( \beta_j \) is used instead of the original 250-day period (m.p. -25 – m.p. -11) to reestimate \( \alpha_j, \beta_j \). Therefore, the excess returns reported in Table 2 are slightly different from those appearing in Table 2.

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12 In some cases, the interval between the date of announcement and date of termination is short days. In such cases, the arithmetic mean is computed over the period starting from the date of announcement to one day earlier than termination.

13 I have also used 30 trading days to estimate the base prices; however, the estimates are not rejected because they are similar. There were no stock splits or stock dividends for our targeted firms during the 60-day estimation period. Hence, no adjustments are necessary.
### Table 3. Base Price and Realizable Market Value per Targeted Share (N = 13)

<table>
<thead>
<tr>
<th>Target</th>
<th>Base Price</th>
<th>Realizable Market Value (Computation Method in Parentheses)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kayser-Roth Corp.</td>
<td>21.40</td>
<td>33.87 (exchange offer)</td>
</tr>
<tr>
<td>Occidental Petroleum Corp.</td>
<td>9.04</td>
<td>17 (cash offer)</td>
</tr>
<tr>
<td>Staley (A.E.) Co.</td>
<td>36.50</td>
<td>50.06 (exchange offer)</td>
</tr>
<tr>
<td>Falcon Seaboard Inc.</td>
<td>28.81</td>
<td>53.33 (exchange offer)</td>
</tr>
<tr>
<td>Anaconda Co.</td>
<td>16.81</td>
<td>23.15 (WSJ estimate)</td>
</tr>
<tr>
<td>Shenandoah Oil Corp.</td>
<td>21.97</td>
<td>29.57 (exchange offer)</td>
</tr>
<tr>
<td>Marcor Inc.</td>
<td>29.35</td>
<td>54 (WSJ estimate)</td>
</tr>
<tr>
<td>Ex-Cell-O Corp.</td>
<td>21.22</td>
<td>30 (cash option)</td>
</tr>
<tr>
<td>Koehring Co.</td>
<td>15.69</td>
<td>20.15 (exchange offer)</td>
</tr>
<tr>
<td>Tropicana Products Inc.</td>
<td>27.49</td>
<td>38.12 (exchange offer)</td>
</tr>
<tr>
<td>Marshall Field &amp; Co.</td>
<td>19.95</td>
<td>36 (cash option)</td>
</tr>
<tr>
<td>Amax Inc.</td>
<td>36.23</td>
<td>57 (cash offer)</td>
</tr>
<tr>
<td>McGraw-Hill Inc.</td>
<td>23.03</td>
<td>34 (cash offer)</td>
</tr>
</tbody>
</table>


### Table 4. Would-be and Actual Excess Returns per Targeted Share (N = 13)

<table>
<thead>
<tr>
<th>Target</th>
<th>Would-be Excess Returns</th>
<th>Actual Excess Returns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kayser-Roth Corp.</td>
<td>0.582609</td>
<td>0.072827</td>
</tr>
<tr>
<td>Occidental Petroleum Corp.</td>
<td>0.880531</td>
<td>-0.22074</td>
</tr>
<tr>
<td>Staley (A.E.) Co.</td>
<td>0.371452</td>
<td>0.075732</td>
</tr>
<tr>
<td>Falcon Seaboard Inc.</td>
<td>0.851356</td>
<td>0.076653</td>
</tr>
<tr>
<td>Anaconda Co.</td>
<td>0.377156</td>
<td>0.852945</td>
</tr>
<tr>
<td>Shenandoah Oil Corp.</td>
<td>0.346033</td>
<td>-0.64069</td>
</tr>
<tr>
<td>Marcor Inc.</td>
<td>0.201404</td>
<td>0.332561</td>
</tr>
<tr>
<td>Ex-Cell-O Corp.</td>
<td>0.414094</td>
<td>0.104884</td>
</tr>
<tr>
<td>Koehring Co.</td>
<td>0.284257</td>
<td>-0.33880</td>
</tr>
<tr>
<td>Tropicana Products Inc.</td>
<td>0.386650</td>
<td>0.891597</td>
</tr>
<tr>
<td>Marshall Field &amp; Co.</td>
<td>0.804150</td>
<td>0.369150</td>
</tr>
<tr>
<td>Amax Inc.</td>
<td>0.573325</td>
<td>0.180226</td>
</tr>
<tr>
<td>McGraw-Hill Inc.</td>
<td>0.476271</td>
<td>0.269986</td>
</tr>
</tbody>
</table>

Summary Statistics:
- Mean: 0.503791, 0.155872
- Standard deviation: 0.220717, 0.424339
- Median: 0.414094, 0.104884
- Minimum value: 0.201414, -0.64069
- Maximum value: 0.880531, 0.891597

*a* In Standard and Poor's Daily Price Record, information concerning stock dividends or stock splits is also reported. Since the offer price is referred to the post-split Staley stock, the average price of its common stock on “when-issued” basis, between the split and one day earlier than the proposal, is used as the approximate of the base price.

*b* These estimates are based on terms embedded in the new or revised merger proposal. If CAR’s are instead used, the estimate would be 0.305218 (Anaconda), 0.2571576 (Marcor), and 0.765407 (Tropicana), respectively.

*c* Adjusted for an Arco’s two for one stock split.
Where managerial resistance generated an improved bid, the actual wealth change is the value per targeted share embedded in the new or revised offer minus the base price, divided by the base price (column 3, Table 4).

The sample mean of the would-be excess returns, 0.5038, is greater than its counterpart for the actual excess returns, 0.1559. The median shows a similar pattern, 0.4141 versus 0.1049. Furthermore, actual excess returns for three cases turn out to be negative. Also, despite the wealth gains shown in Table 4, the three improved bids—Anaconda, Marcor, and Tropicana—fail to change this conclusion. Overall, the average would-be excess return is about 3.23 times as great as the average actual excess return.

The comparisons suggest that shareholders would realize a larger wealth gain had the rejected merger proposals been accepted. The results suggest that top managers are engaged in wealth-reducing resistance. The question is, what is the probability that these results arise by chance?

Again, we test against the null hypothesis that there is no difference in the average actual wealth gain and the average would-be wealth gain within the rejected group. With a $t$ value of 2.52, the null hypothesis can be rejected at 0.05 significance level.

### E. A Note on the Intragroup Comparison

In the within-group comparison, we may overestimate the would-be excess returns for cases in which the proposed merger is financed by an exchange of securities. For instance, the price per share of the acquiring firm may decline if the actual synergistic gain turns out to be smaller than that claimed by the raiding firm. If so, the realizable market value of the targeted share will be overestimated, since the higher closing price on the date of announcement (rather than the price of the raiding firm, on the later date of settlement), is used in the estimation.

To investigate this potential problem, we examined the differences between the average

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14 Only four out of the 14 rejected cases have accepted a new or revised offer. Of these four cases, ‘Marcor received an improved bid from the original bidder, Mobil.’ Moreover, at least one case (in which CNA is the target) can be classified as “unsuccessful resistance” since the observed CR (cumulative residuals) is $-0.01$. Therefore, unless the associated would-be change is lower than 0.34, including this case would increase the original means difference, which is 0.35. Incidentally, this is the case that will be excluded in the significance test because the stock of the Canadian subsidiary of the raiding firm, Gulf Oil, is involved in the proposed transaction.

15 The test statistic, $t$

$$
= \frac{AR_w - AR_a}{\sqrt{\frac{\sum_{i \in R} (R_w - AR_w)^2 + \sum_{i \in R} (R_a - AR_a)^2}{2(N_R - 1)}}} \sqrt{\frac{2}{N_R}}
$$

$$
= 2.52
$$

where

$AR_w$ : average would-be excess return,

$AR_a$ : average actual excess return,

$d.f.$ : degree of freedom, in our sample, $d.f. = 24$, $Pr(t > 1.711) = 0.05$. 

would-be and average actual excess returns by using only cash merger proposals and merger proposals which contained a cash option. The sample consists of five firms: 1) Occidental Oil, 2) Ex-Cell-O, 3) Marshall Field, 4) Amax, and 5) McGraw-Hill.

The average would-be excess return is 62.79%, while the average actual excess return is 14.07%. Moreover, the null hypothesis that there are no differences between the average would-be and actual excess returns can be rejected, with a t statistic of 3.2 (significant at the 1% level).

F. Interpretation of the Empirical Results

Here we compare the value of the proposal versus the value of the target stock immediately after the proposal is rejected. This comparison could be misleading in two ways. First, other (independent) bad news could be released just after the proposal is rejected. In this case management could have rationally expected the ex post price to be above the price we observe. If their expectation was above the offer value, the managers were actually acting in the stockholders' best interest. The size of the price differences involved makes this explanation unlikely. Alternatively, the managers may believe that the firm is undervalued. Again, the size of the premiums makes this unlikely. Moreover, if the market is rational, this argument cannot be repeatedly correct or the stock prices will be revised upward (above the offer value) when a proposal is rejected.

Given conventional event methodology, our results from both intragroup and intergroup test are inconsistent with the hypothesis of shareholder wealth maximization. While our procedures are similar to those of previous studies, the possibility of an improper selection of the beginning event date or an unrepresentative sample still remains.

In addition, there are limitations on the extent to which these results should be generalized to the overall performance of the market for corporate control and the contractual efficiency arising from the principal-agent relationship.

Concerning the effectiveness of the market for corporate control, we cannot rule out the possibility that the best way to avoid a hostile merger bid is to run a firm efficiently. If the real discipline that the market for corporate control imposes on top managers is the potential takeover threat, the observed sample—be it in the form of merger talks, proxy fights or formal merger bids—can never substantiate the existence of such forces.

The current study also ignores the global efficiency of employment contracts. In a world where many contingencies are possible, not all contingencies will be dealt with optimally. Consequently, locally-observed inefficient non-shareholder wealth maximizing behavior such as opportunistic anti-takeover behavior does not necessarily imply that separation of ownership and control results in organizational inefficiency. As long as productivity gains arising from the principal-agent relationship dominate the agency costs thereby created, both shareholders and managers may benefit.

IV. Conclusion

This study examines the relationship between shareholder wealth gains and managerial strategies in merger proposals. Given some limitations of previous studies, we conducted an intergroup and an intragroup comparison to test whether the hypothesis of shareholder wealth maximization survives the refined experiment.

The findings indicate that the average wealth gain of the accepted group (38.92%) exceeds the average wealth gain of the rejected group (11.34%). Second, within the rejected group,
the average would-be wealth gain (50.38%) is about 3.23 times as large as the average actual wealth gain (15.59%). The test indicates that the probability of a chance inconsistency in either the intergroup or the intragroup comparison is less than 0.05.

Our findings are in line with Walkling and Long's. We conclude therefore that managerial resistance may not be in the best interests of shareholders.

**Appendix A: Composition of 243 Unusable Cases**

<table>
<thead>
<tr>
<th>Rejecting Reasons</th>
<th>Number of Cases</th>
<th>Supplementary Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tender offer</td>
<td>52</td>
<td></td>
</tr>
<tr>
<td>Consolidation</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Firms in highly regulated industries</td>
<td>21</td>
<td>Railroad</td>
</tr>
<tr>
<td></td>
<td>27</td>
<td>Airline</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>Financial Institutions*</td>
</tr>
<tr>
<td>Mergers/acquisitions prior to 1970</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Legal issues</td>
<td>3</td>
<td>Lawsuit</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>Divesture</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Legal ruling, or</td>
</tr>
<tr>
<td></td>
<td></td>
<td>regulatory agency’s approval</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>Antitrust</td>
</tr>
<tr>
<td>Acquisitions</td>
<td>3</td>
<td>Acquiring offices</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>Buying assets</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>Buying units, fields,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>and subsidiaries of other concerns</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Joint operation</td>
</tr>
<tr>
<td>Targeted firms are acquiring firms' own subsidiaries b</td>
<td>4</td>
<td>(Name of the target; % of shares owned by the bidding firm)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sharon Steel Corp. (86%) (1974)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Northeastern Insurance (60.9%) (1977)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hawkeye-Security Insurance (80.5%) (1978)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>New Jersey Life Co. (1978)</td>
</tr>
<tr>
<td>Targeted firms are foreign owned</td>
<td>2</td>
<td>(Name of the target)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Granby Mining Co. (1972)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Granisle (1972)</td>
</tr>
<tr>
<td>Merger talks d</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Change in stock holdings; proxy fights</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Termination of the merger proposal has nothing to do with the attitude of management</td>
<td>2</td>
<td>(Name of the target)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>General Battery Corp. (1971)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Copper Range (1974)</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>19</td>
<td>Licensing, debenture, editorial comment, etc.</td>
</tr>
</tbody>
</table>

Appendix B: Classification of the Merger Proposals

<table>
<thead>
<tr>
<th>Merger Proposals (30)</th>
</tr>
</thead>
<tbody>
<tr>
<td>classified on the basis of a vote by board of directors</td>
</tr>
<tr>
<td>Resisted (14)</td>
</tr>
<tr>
<td>classified on the basis of being retargeted or not</td>
</tr>
<tr>
<td>Being Retargeted (4)</td>
</tr>
<tr>
<td>Terms Improved (3)</td>
</tr>
</tbody>
</table>

References


