

THE RATIONALE BEHIND INTERFIRM TENDER OFFERS Information or Synergy?*

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This paper investigates the rationale behind interfirm tender offers by examining the returns realized by the stockholders of firms that were the targets of unsuccessful tender offers and firms that have made unsuccessful offers. Our results suggest that the permanent positive revaluation of the unsuccessful target shares [documented by Dodd and Ruback (1977) and Bradley (1980)] is due primarily to the emergence of and/or the anticipation of another bid that would ultimately result in the transfer of control of the target resources. We also find that the rejection of a tender offer has differential effects on the share prices of the unsuccessful bidding firms depending upon whether the tender offer process results in a change in the control of target resources. On the basis of these results we conclude that acquisitions via tender offers are attempts by bidding firms to exploit potential *synergies*, not simply superior *information* regarding the 'true' value of the target resources.

1. Introduction and summary

There is empirical evidence that corporate acquisitions by tender offers provide significant and positive abnormal returns to the stockholders of both the target and the acquiring firms [Dodd and Ruback (1977), Bradley (1980), and Bradley, Desai and Kim (1982)]. This finding is consistent with the hypothesis that tender offers are an attempt by the bidding firm to exploit some specialized resource by gaining control of the target and implementing a higher-valued operating strategy. The revised operating strategy may

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involve more efficient management, economies of scale, improved production techniques, the combination of complementary resources, increased market power, the redeployment of assets to more profitable uses, or any number of value-creating mechanisms that fall under the general rubric of corporate synergy. The specific nature of the reallocation of the target resources is not important to this 'synergy' theory of tender offers. Rather, the critical aspect of the hypothesis is that the increase in the value of the target shares derives from the transfer of control of the target resources and their reallocation subsequent to the acquisition.

An alternative hypothesis, which is also consistent with the existing empirical evidence, posits that the revaluation of the target shares is due to new information that is generated during the tender offer process. There are two forms of this 'information' hypothesis. The first argues that the dissemination of the new information prompts the market to revalue previously 'undervalued' target shares. We might refer to this variant as the 'sitting on a gold mine' hypothesis. The second argues that the new information induces (allows) the current target management to implement a higher-valued operating strategy on its own. We might call this the 'kick in the pants' variant. In either event, the information hypothesis posits that the revaluation of the target shares is generated by actions of the market or the target managers in response to new information. That is, the positive revaluation does not require a successful acquisition of the target resources.

Note that the information hypothesis requires that certain capital market agents (i.e., the managers of bidding firms) possess (the ability to produce) superior information regarding the true (potential) value of the target firm. In contrast, the synergy hypothesis does not require such an assumption. Unanticipated changes in the product or factor markets (e.g., changes in technology or the political climate) may give rise to previously unavailable synergies. The synergy hypothesis is consistent with the notion that tender offers simply represent reactions by bidding firms to unanticipated changes in the product and factor markets.

There is empirical evidence that is consistent with the information hypothesis of tender offers. Dodd and Ruback (1977) and Bradley (1980) find that firms that are the targets of unsuccessful tender offers experience significant and permanent increases in their share prices. Furthermore, Bradley (1980) finds that in unsuccessful tender offers, this permanent revaluation of the target shares exceeds the per share premium of the rejected bid. In other words, after the announcement of a to-be-rejected offer, the market price of the target shares on average is greater than the amount target stockholders would have received had they tendered their shares.¹

¹There is also empirical evidence that the stockholders of targets of unsuccessful *merger* proposals experience a permanent increase in wealth. Dodd (1980) reports that in a sample of 26 merger proposals cancelled by target managers, target stockholders realized a significant 'permanent revaluation' of their shares by an average of 11%.

The apparently permanent revaluation of the shares of targets of unsuccessful tender offers seems to contradict the synergy theory of tender offers. The results suggest that it is the announcement of a tender offer *per se* (or, more precisely, the information contained therein) that precipitates the revaluation of the target shares, not the transfer of control of the target resources that accompanies the execution of a successful offer. That is, the mere announcement of a tender offer, whether successful or not, appears to release positive information regarding the value of the target shares.

While the revaluation of the shares of targets of unsuccessful tender offers is consistent with the information hypothesis, it is not sufficient evidence to reject the synergy hypothesis. The positive returns to unsuccessful targets may be due to the anticipation of a future, higher-valued bid. Specifically, one can hypothesize that prior to the expiration of a tender offer, the target stockholders (or, more generally, market participants) form an unbiased expectation that a subsequent, higher-valued bid will be forthcoming. If the present value of this anticipated future bid exceeds the value of the outstanding offer, then target stockholders rationally will let the outstanding offer expire.² In those instances where the target stockholders turn out to be correct and a subsequent, higher-valued, successful offer does materialize, they will experience an additional increase in wealth. In those instances where the target stockholders turn out to be incorrect and a subsequent successful bid fails to materialize, the price of the target shares will gradually fall back to the pre-offer level, as the uncertainty about the subsequent bid is resolved over time.

In contrast, the information hypothesis states that it is the information contained in the tender offer that generates the positive revaluation of the target shares. Since there is no reason to expect that the positive information will vanish simply because there is no subsequent bid, the information hypothesis does not predict that the shares of targets that receive no subsequent bid will fall back to their pre-offer level.

In section 2 we test the competing implications of the synergy and information hypotheses by examining the returns realized by the stockholders of firms that are the targets of unsuccessful tender offers. The unsuccessful targets are separated into two groups: those that became the targets of a subsequent successful bid and those that did not. Consistent with previous research, we find that target stockholders realize a significant positive return on the announcement of a tender offer and the return is not dissipated subsequent to the rejection of the offer by the target shareholders. However, closer examination reveals that this revaluation is due primarily to

²Dodd and Ruback (1979, p. 370), in interpreting the positive returns to unsuccessful targets as evidence consistent with their 'internal efficiency' hypothesis (our information hypothesis) and inconsistent with the synergy hypothesis, qualify their conclusion by raising the possibility that the positive market reaction of 'unsuccessful targets could be attributed to the expectations of future monopoly or synergistic gains from mergers'.

the emergence of and/or the anticipation of another acquisition bid. The share prices of the target firms that are not targets of subsequent, successful acquisition attempts within five years of an unsuccessful offer fall back to their pre-offer level. The share prices of those targets that receive a successful subsequent bid experience an additional significant positive revaluation.

The evidence suggests that a *permanent* revaluation of the target shares requires that the target resources be combined with those of an acquiring firm. That is, the gains to the stockholders of unsuccessful targets stem from the anticipation of a future successful acquisition and not simply from the revelation of new information regarding the 'true' value of the target resources. On the basis of these findings we conclude that the synergy hypothesis is more consistent with the evidence than the information hypothesis.

To buttress our test of the competing implications of the synergy and information hypotheses, we also examine the returns to the shares of firms that have *made* unsuccessful tender offers. The unsuccessful bidding firms in our sample lost bids either to the current target management or to a rival bidding firm. Obviously, in the former case there is no transfer of control of the target resources, while in the latter case the control of the target resources is transferred to a rival bidding firm. According to the synergy hypothesis, it is the transfer of control of the target resources (and their reallocation subsequent to the acquisition) that is responsible for the positive revaluation of the target shares. Consequently, it is possible that unsuccessful bidding firms will be affected differently depending upon whether or not the tender offer process results in a change in control of the target resources. For example, losing the bid for control of a valuable resource, i.e., the target firm, to a competitor may have a negative impact on the value of the shares of the unsuccessful bidding firm. In contrast, if it is the information contained in the tender offer — not the transfer of control — that motivates the tender offer, then the returns to the shares of an unsuccessful bidding firm should not be affected by whether or not there is a change in control of the target resources.

Our empirical results indicate that, on average, the stockholders of unsuccessful bidding firms suffer a significant wealth loss in the wake of an unsuccessful offer. Further examination reveals that this wealth loss is due solely to the negative returns realized by firms which lose bids for their targets to rival bidding firms. That is, if a firm makes an unsuccessful offer and the target is not acquired by another bidding firm, then there is no effect on the wealth of the stockholders of the unsuccessful bidding firm. However, if the offer fails because another firm successfully acquires the target, then the stockholders of the unsuccessful bidding firm suffer a significant wealth loss. We interpret these results as evidence that successful acquiring firms possess specialized resources that allow for a profitable acquisition and that these

resources are eventually used to put the unsuccessful bidding firm at a competitive disadvantage in the marketplace. This is consistent with the implications of the synergy theory of tender offers.

The remainder of the paper is organized as follows. In the next section we describe our sample of unsuccessful tender offers. Our results for unsuccessful target firms are presented in section 3 and those for unsuccessful bidding firms are presented in section 4. In section 5 we summarize our results and draw some implications.

2. Sample characteristics

The empirical tests of this paper are based on the returns realized by the stockholders of firms that either received or made an unsuccessful, control-oriented tender offer during the period 1963–1980. We define a control-oriented tender offer as one in which the bidding firm holds less than 70% of the target shares outstanding and is attempting to increase its holdings by at least 15 percentage points.³ We classify a tender offer as being successful if the bidding firm increases its holding of the target shares by 15 percentage points or more.

The primary data base of this study consists of 697 interfirm tender offers that were made during the period October 1958 to December 1980 where either the target or bidding firm was listed on either the NYSE or AMEX at the time of the offer. Tender offers through 1977 were identified with the help of the data bases compiled by Bradley (1980) and Dodd and Ruback (1977). Relevant information for all offers was obtained and/or verified with the use of the *Wall Street Journal* (index and newspaper), *Standard and Poors Guide to Common Stocks*, and the data bases provided by CRSP (Centre for Research in Security Prices of the University of Chicago).

The primary data base contains 371 unique target firms that received one or more control-oriented offers. Of these 371 target firms, the initial offers received by 241 were successful and the rest (130) were unsuccessful. The mean percentages of target shares held, sought and purchased by the bidding firms in the sample of successful targets are reported in the first column of table 1. Of the remaining 130 target firms that received an unsuccessful, first-time control-oriented offer, CRSP data are available for only 112.⁴ The mean percentages of target shares held, sought and purchased by the bidding firms of these 112 first-time unsuccessful offers are reported in the third column of table 1.

³The 70% criterion is chosen because some corporate charters require a two-thirds or higher majority to effect a formal combination of the two firms. The choice of 15% as the cut-off point is somewhat arbitrary; however, we feel that the acquisition of at least 15% represents a significant transfer of control of the target resources.

⁴Subsequent empirical tests are based on CRSP Daily Return File. Use of this data base precludes targets that were not listed on either NYSE or AMEX and offers made before January 1963.

Table 1

Mean percentage of shares held, sought and purchased by outcome and by target and bidder firm samples in the period 1963–1980 (standard deviations in parentheses).

	Successful <i>N</i> = 241		Unsuccessful			
			Target <i>N</i> = 112		Bidder <i>N</i> = 94	
	Mean	Median	Mean	Median	Mean	Median
% of target held by bidder	12.81 (20.39)	0.0	3.62 (9.95)	0.0	4.27 (11.73)	0.0
% of target sought by bidder	65.29 (30.33)	60.72	67.87 (31.67)	60.02	71.40 (31.64)	89.08
% of target purchased by bidder	58.80 (28.58)	53.97	0.78 (2.70)	0.0	0.63 (2.47)	0.0

The data reported in table 1 show no significant difference in the percentage of target shares sought by the bidder between the successful and the unsuccessful target samples: 65.28% and 67.87%, respectively. However, the data show a marked difference in the percentage of target shares purchased by the bidders in these two samples: 58.8% for the successful targets and 0.78% for the unsuccessful targets. These data suggest that our outcome criterion is appropriate. The mean percentage of target shares held and sought for all of the subsamples in table 1 are also well within our definition of control-oriented tender offers.

The sample of bidding firms used in this study consists of all the firms in the primary data base that made one or more *unsuccessful* attempts to secure control of a target firm via an interfirm tender offer. If a bidding firm initially fails but subsequently succeeds to gain control of the target, we classify the process as a successful acquisition and exclude the bidding firm from the sample. Our total sample of unsuccessful bidders consists of 91 unique firms that made a total of 94 unsuccessful attempts to acquire a target firm.⁵ The last column of table 1 reports the mean percentage of target shares held, sought and purchased for this sample of unsuccessful bidding firms.⁶

Table 2 presents a time profile of the unsuccessful targets and bidders. The target sample is divided into two subsamples: those firms that were ultimately acquired and those that were not. We arbitrarily choose a five-year horizon to distinguish between the two subsamples. Thus, of the 112 target firms receiving an initial, unsuccessful, control-oriented offer, 86 were acquired within five years and the remaining 26 were not.

⁵One bidding firm tried unsuccessfully to acquire three different targets and another bidder was unsuccessful at acquiring two. The offers made by each bidder were all at least three years apart.

⁶For bidding firms that made more than one unsuccessful offer for a given target, the data in table 1 refer to the parameters and outcome of the initial, unsuccessful (control-oriented) offer.

Table 2
 Number of unsuccessful tender offers for both target and bidding firm samples in the period 1963–1980.

Year	Target firms			Bidding firms		
	Total	Acquired within 5 years	Not acquired within 5 years	Total	Change in control	No change in control
1963	0	0	0	2	1	1
1964	2	2	0	2	2	0
1965	1	1	0	2	2	0
1966	6	3	3	3	1	2
1967	8	6	2	8	6	2
1968	9	7	2	8	4	4
1969	4	2	2	10	9	1
1970	2	2	0	1	0	1
1971	0	0	0	0	0	0
1972	3	2	1	0	0	0
1973	12	8	4	4	2	2
1974	10	10	0	6	5	1
1975	9	9	0	1	1	0
1976	8	5	3	13	10	3
1977	7	7	0	5	5	0
1978	17	12	5	12	8	4
1979	11	7	4	11	6	5
1980	3	3	0	6	5	1
Total	112	86	26	94	67	27

The sample of bidding firms reported in table 2 is also divided into two subsamples. The 'change in control' subsample consists of those bidding firms that lost their bids for their respective targets to a rival bidding firm within the tender offer period. The tender offer period extends from the day of the announcement of the *initial* offer to three weeks after the expiration of the *final* offer. (Several of these bidding firms made more than one unsuccessful offer.) The mean number of trading days between the announcement of the initial unsuccessful offer and the announcement of the subsequent successful offer is 60 with a standard deviation of 90. The second subsample consists of those bidders who, in a sense, lost their bids to the target managers. In other words, the targets of the offers of the bidders in the 'no change in control' subsample were not taken over by any other firm within the tender offer period.

3. The returns to the shares of targets of unsuccessful tender offers

In this section we test the implications of the synergy and the information hypotheses by examining the returns to the stockholders of firms that were

the targets of unsuccessful initial tender offers. All of the firms in this sample were the targets of control-oriented offers.

To examine the impact of an unsuccessful offer on the wealth of the target stockholders, we perform a Cumulative Abnormal Return (*CAR*) analysis on the shares of the firms in the sample. For each firm in the sample, we calculate monthly cum-dividend stock returns for 72 months prior to the announcement of the initial offer through 60 months thereafter. These monthly returns are computed by compounding daily cum-dividend returns. This allows us to include firms that are listed on the AMEX in the sample. The *CAR* analyses are based on a monthly time-frame because we are interested in the long-term effects of an unsuccessful tender offer, i.e., the post-offer price behavior of the target shares over the next five years.

In event time, month 0 is the announcement month. Thus, event time runs from -72 to $+60$. Data from the event months -72 to -13 are used to estimate the parameters of the market model

$$R_{it} = \alpha_i + \beta_i R_{mit} + \varepsilon_{it}, \quad t = -72, \dots, -13, \quad (1)$$

where

R_{it} = cum-dividend monthly stock return for firm i in month t ,

R_{mit} = return on the equally weighted market portfolio in month t relative to the announcement of offer i ,

α_i, β_i = regression parameters, and

ε_{it} = stochastic error term, assumed to be i.i.d. normal with mean zero and constant variance σ_i^2 .

The abnormal return to firm i in month t is defined as

$$AR_{it} = R_{it} - \hat{\alpha}_i - \hat{\beta}_i R_{mit}, \quad t = -12, \dots, +60, \quad (2)$$

where $\hat{\alpha}_i, \hat{\beta}_i$ are the estimates of α_i, β_i in eq. (1). The Cumulative Abnormal Return (*CAR*) to the portfolio of unsuccessful target firms is given by

$$CAR = \sum_{t=t_0}^T \frac{1}{N_t} \sum_{i=1}^N AR_{it}. \quad (3)$$

where

t_0 = first event month in the *CAR* calculation,

T = event month through which the *CAR* is calculated, and

N_t = number of firms in the portfolio in month t .

The standard error of the *CAR* statistics is given by

$$\sigma(CAR) = \sigma(AR_p) \sqrt{K}, \quad (4)$$

where

$$AR_{pt} = \frac{1}{N_t} \sum_{i=1}^N AR_{it}$$

is the abnormal return to the portfolio in month t , $\sigma(AR_p)$ is the standard error of the monthly abnormal return to the portfolio over the estimation period (from months -72 to -13), and K is the number of months in the CAR statistic.

Table 3

Percentage abnormal returns (AR) and cumulative abnormal returns (CAR) to unsuccessful target firms — total sample and 'subsequently taken over' and 'not taken over' subsamples in the period 1963–1980.

Event month	Total sample			Subsequently taken over			Not taken over		
	N	AR	CAR	N	AR	CAR	N	AR	CAR
-6	112	-0.95	-0.95	86	-0.92	-0.92	26	-1.05	-1.05
⋮									
-3	112	-0.13	-1.41	86	-0.41	-0.76	26	0.80	-3.57
-2	112	-0.32	-1.74	86	-0.43	-1.19	26	0.03	-3.53
-1	112	3.56	1.83	86	2.99	1.80	26	5.46	1.93
0	112	35.55	37.38	86	39.06	40.86	26	23.94	25.87
1	111	1.09	38.47	85	4.25	45.10	26	-9.24	16.63
2	108	-0.80	37.66	82	0.02	45.13	26	-3.41	13.22
3	96	-0.73	36.93	70	-0.66	44.47	26	-0.93	12.30
⋮									
6	70	0.784	35.84	45	0.61	44.74	25	1.10	8.37
⋮									
12	50	1.84	40.42	27	4.86	55.73	23	-1.71	3.43
⋮									
24	36	-1.38	39.15	13	0.45	58.99	23	-2.41	-1.60
⋮									
36	30	-1.55	35.04	11	-1.59	61.38	19	-1.53	-9.8
⋮									
48	24	0.62	47.93	10	-0.03	81.69	14	1.08	-1.51
⋮									
60	23	2.96	40.93	9	6.52	68.80	14	0.67	-4.6
Std. error of monthly % abnormal return		0.971			1.101			1.952	

Table 3 reports the Abnormal Returns (AR) and the Cumulative Abnormal Returns (CAR) starting in month -6 for the three different portfolios of unsuccessful target firms: the entire sample of unsuccessful targets (columns 3 and 4); the subsample of firms that are subsequently taken over within five years following the end of an unsuccessful tender offer (columns 6 and 7);

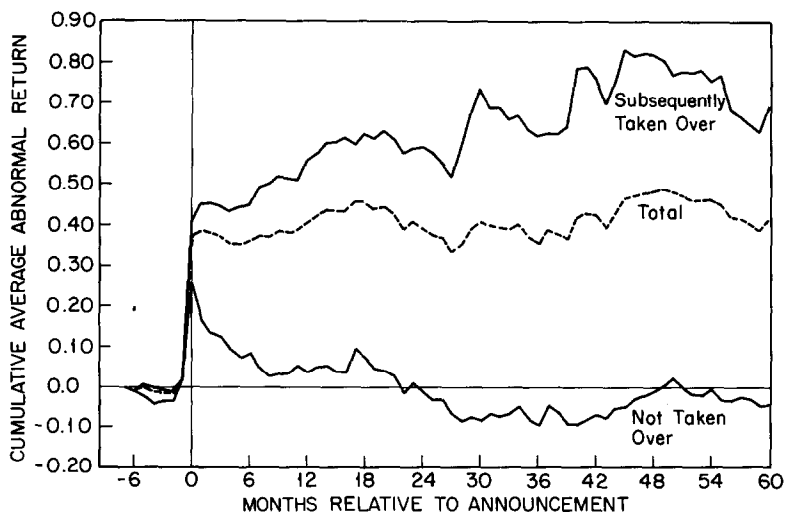


Fig. 1. Cumulative abnormal returns to unsuccessful target firms — total sample, and 'subsequently taken over' and 'not taken over' subsamples in the period 1963–1980.

and the subsample of firms that are not taken over within the same five-year period. The *CAR*'s in table 3 are plotted in fig. 1 and are summarized for various holding periods in table 4.

Consistent with the findings of Dodd–Ruback and Bradley, the data show that target shareholders, on average, realize significant positive abnormal returns surrounding the month of the announcement of a tender offer. The *AR* and *CAR* for the total sample of unsuccessful targets (columns 3 and 4 in table 3 and the dotted line in fig. 1) show a positive revaluation of the target shares which does not dissipate subsequent to the rejection of the offer by the target shareholders. As reported in table 4, the percentage *CAR* statistic from one month before the announcement of the offer through six months thereafter (–1 to +6) is 37.57 with a *t*-statistic of 13.69; the fourteen-month *CAR* starting in month –1 is 42.15 with a *t*-statistic of 11.61. These results for the total sample suggest that it is the announcement of a tender offer per se (or, more precisely, the information contained therein) that precipitates the revaluation of the target shares, not necessarily the transfer of control of the target resources that accompanies the execution of a successful offer. In other words, while the acquisition of a target by a bidding firm may be sufficient to effect a revaluation of the target resources, it does not appear to be a necessary condition.

As discussed earlier, however, in an informationally efficient capital market, the post-expiration price of unsuccessful target shares will reflect an unbiased estimate of the probability that the firm will receive a subsequent higher-valued acquisition bid. We test this hypothesis by dividing the sample of unsuccessful offers into two groups. The first group consists of those firms

Table 4

Percentage cumulative abnormal returns for unsuccessful targets — total sample and 'subsequently taken over' and 'not taken over' subsamples in the period 1963–1980 (*t*-statistics in parentheses).^a

Event time period (in months)	Total sample (<i>N</i> = 112)	Subsequently taken over (<i>N</i> = 86)	Not taken over (<i>N</i> = 26)
-1 to 0	39.29 (28.64)	42.05 (27.03)	29.40 (10.66)
-1 to +1	40.20 (23.93)	46.30 (24.30)	20.16 (5.97)
-1 to +6	37.57 (13.69)	45.93 (14.76)	11.91 (2.16)
-1 to +12	42.15 (11.61)	56.92 (13.83)	6.96 (0.95)
-1 to +24	40.89 (8.27)	60.18 (10.73)	1.93 (0.19)
-1 to +48	42.66 (6.22)	69.99 (9.00)	-1.07 (0.08)
+1 to +12	3.04 (0.90)	15.63 (4.10)	-22.44 (3.32)
+1 to +24	1.78 (0.37)	17.35 (3.22)	-27.47 (2.87)
Std. error of monthly abnormal return	0.97	1.10	1.95

^aThe *t*-statistics in this table are based on the assumption of serially uncorrelated standard errors of the monthly abnormal returns to the indicated portfolio.

that received a subsequent successful acquisition bid within five years following the end of an unsuccessful tender offer. The second group consists of those firms that received no subsequent successful acquisition bid either within the same five-year period or before December 1981 (the end of the CRSP data base). The Abnormal Returns (*AR*) and the Cumulative Abnormal Returns (*CAR*) to these two subsamples are also reported in tables 3 and 4 and fig. 1. Nine firms in our 'subsequently taken over' sample are still listed five years after the initial offer was rejected because of partial acquisitions or offers made but not executed before the end of the CRSP data base. The fall in the number of firms in our 'not taken over' sample is due to the twelve firms whose initial event is within five years of the end of the CRSP file. These firms are the twelve firms in the fourth column of table 2 with event dates in or after 1976.

The abnormal returns to the 86 firms in the 'subsequently taken over' subsample show a further positive revaluation over the one-year period following the announcement of an unsuccessful offer. The *CAR* from +1 to +12 is 15.63% with a *t*-statistic of 4.10; and the two year *CAR* from +1 to +24 is 17.35% with a *t*-statistic of 3.22.

In contrast, the *CAR* to the 26 firms in the 'not taken over' sample is negative over the one-year period *following* the announcement of an unsuccessful offer. The one-year *CAR* from +1 to +12 is -22.44% with a *t*-statistic of -3.32 ; and the two-year *CAR* from +1 to +24 is -27.47% with a *t*-statistic of -2.87 . Furthermore, the *CAR* from -1 to +48 is -1.07% with a *t*-statistic of -0.08 . This shows that whatever abnormal gains the target shareholders realized with the announcement of the offer are completely wiped out over the ensuing two-year period.⁷

The striking contrast between the returns to the shares of targets that are subsequently taken over and those that are not suggests an obvious interpretation of unsuccessful tender offer events. The announcement of a tender offer causes an immediate increase in the value of the target shares. If the target stockholders believe that the present value of an expected future acquisition bid is greater than the value of the current bid, they will reject the offer. If a subsequent bid does materialize, they realize a greater positive abnormal return. If, however, another bid does not materialize, the entire positive abnormal returns earned from the announcement of the initial offer are dissipated over the following two years.

These results are consistent with the hypothesis that a successful acquisition (change in the control) of the target resources is required in order to effect a permanent positive revaluation of the target shares. That is, the revaluation requires some specialized resource that is not possessed by the target firm. Since according to the information hypothesis the revaluation does not require a successful acquisition, the synergy hypothesis appears to be more consistent with the evidence than the information hypothesis.

It should be noted that there is an important distinction among the firms in our sample that received an initial, unsuccessful offer and then received a subsequent, successful acquisition bid. Prior to the expiration of these initial offers, the market may have varying expectations about the probability that these firms would receive a subsequent bid. At one extreme, the target shareholders may have a higher-valued offer in hand before the initial offer expires, i.e., the probability of receiving a subsequent bid is equal to one. In less extreme cases, there may just be an unsubstantiated rumor that a higher-valued offer is pending or a general feeling among investors that the initial bidder will eventually improve the terms of his offer. In these cases, the probability of receiving a subsequent bid is less than one.

To proxy for the variation in the market's assessment of the probability that a higher-valued bid is forthcoming, we separate the sample of 'subsequently taken over' targets into two subsamples; those targets that

⁷These results are consistent with the findings of Asquith (1983) that the announcement of an unsuccessful merger bid generates an immediate increase in the value of target shares but the entire gain disappears within a year after the termination of the bid. In contrast to Dodd (1980) (see footnote 1) Asquith's sample excludes all merger bids that are followed by a subsequent bid within a year after the termination of the initial bid.

Table 5

Statistics on the distribution of the number of trading days between the announcement of the initial unsuccessful and subsequent successful offers.

	Subsequent bid within 60 trading days	Subsequent bid within 5 years but after 60 trading days
<i>N</i>	65	21
Mean	17.51	271.43
Std. deviation	14.71	250.97

were acquired within three months and those targets that were acquired within five years but after three months of the announcement of the initial, unsuccessful offer. Table 5 reports the means and standard deviations of the number of trading days between the initial, unsuccessful offer and the subsequent, successful offer for the two subsamples. The mean 'gap' for the 'within three months' subsample is a little over three weeks whereas the mean 'gap' for the 'within five years' subsample is over one calendar year. This large difference in the mean 'gap' should provide an adequate proxy for the market's subjective probability at the time of the expiration of the initial offers that the target will receive a subsequent bid. Presumably, at the time of the rejection of the initial offer, the probability of receiving a subsequent bid was significantly greater for the firms in the 'within three months' sample than in the 'within five years' sample.⁸

Table 6 reports the *CAR*'s for various holding periods for the 'within three months' and 'within five years' subsamples. The *CAR* series starting in month -6 are plotted in fig. 2. The three-month *CAR* from month -1 to +1 for the 'within three month' subsample (54.08% with a *t*-statistic of 26.92) is almost twice as large as that of the 'within five year' subsample (22.28% with a *t*-statistic of 9.95). However, this difference diminishes over time and completely disappears within two years. The twenty-six-month *CAR* from -1 to +24 is almost indistinguishable between the two subsamples; the *CAR* is 47.69% (*t*=8.06) for the 'within three months' sample and 54.76% (*t*=4.79) for the 'within five years' subsample. Presumably, for the firms in the 'within three month' sample there is little uncertainty regarding the potential of a subsequent, successful offer at the time of the rejection of the initial offer. Consequently, the entire revaluation of these target shares occurs within one month of the announcement of the initial, unsuccessful offer, and there is no subsequent revaluation.

⁸It is interesting to note that the target firm is about equally likely to be taken over by another bidding firm as by the bidding firm that made the initial, unsuccessful offer. For the 'within three month' sample, 60% of the 'subsequently taken over' targets were taken over by a firm other than the initial (rejected) bidder. The corresponding percentage for the 'within five years' sample is 48%.

Table 6
 Percentage cumulative abnormal returns to targets receiving an initial unsuccessful and a subsequent successful tender offer in the period 1963–1980 (*t*-statistics in parentheses).^a

Event time period (in months)	Subsequent bid within 3 months (<i>N</i> = 65)	Subsequent bid within 5 years but after 3 months (<i>N</i> = 21)
-1 to 0	48.21 (29.39)	22.99 (10.26)
-1 to +1	54.08 (26.92)	22.28 (9.95)
-1 to +6	49.75 (15.16)	28.17 (4.45)
-1 to +12	53.05 (16.17)	47.45 (5.66)
-1 to +24	47.69 (8.06)	54.76 (4.79)
-1 to +36	55.08 (7.70)	52.37 (3.79)
-1 to +48	71.41 (8.70)	76.81 (4.85)
-1 to +60	66.53 (7.28)	55.35 (3.14)
Std. error of monthly abnormal return	1.16	2.24

^aThe *t*-statistics in this table are based on the assumption of serially uncorrelated standard errors of the monthly abnormal returns to the indicated portfolio.

For the firms in the 'within five years' subsample, the probability that they will eventually receive a subsequent bid must have been far less than one at the time of the expiration of the initial offer. This accounts for the fact that the three-month *CAR* (from -1 to +1) for the 'within five years' subsample is significantly less than the *CAR* for the 'within three months' subsample. However, as the subsequent bids for firms in the 'within five years' subsample materialize, the *CAR* of this portfolio rises. The continuous upward revaluation of the shares of the firms in the 'within five years' subsample reflects the market's revision of the probability of a subsequent bid from something less than one to that of one.

The stockholders of target firms that received an initial, unsuccessful offer but were *not* subsequently taken over are also likely to be subjected to a great deal of uncertainty regarding a future bid at the time of the rejection of the initial bid. For this reason, the time series of the *CAR* to this portfolio is

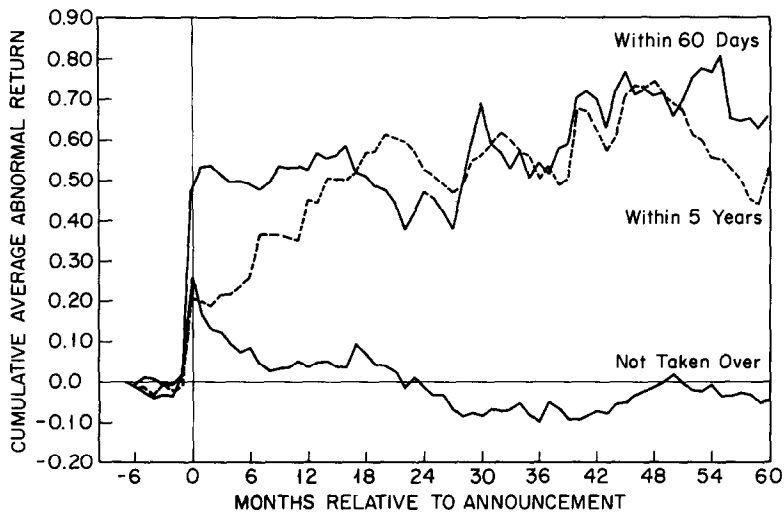


Fig. 2. Cumulative abnormal returns to unsuccessful target firms — 'subsequently taken over within 60 days', 'subsequently taken over within 5 years', and 'not taken over' subsamples in the period 1963–1980.

also plotted in fig. 2. The purpose is to contrast the market's resolution of uncertainty concerning a future bid for the firms in this sample with the resolution of uncertainty concerning future bids for firms in the 'taken over within five years but after three months' subsample.

The difference in the CAR series between the 'not taken over' sample and 'subsequently taken over within five years' sample is striking. On the announcement of the initial, unsuccessful offer, the target firms in both samples experience an approximately equal positive revaluation; the three-month CAR from month -1 to $+1$ is 20.16% ($t=5.97$) for the 'not taken over' sample and 22.28% ($t=9.95$) for the 'subsequently taken over within five years but after three months' sample. This indicates that at the time of the rejection of the initial bid, there is no noticeable difference in the uncertainty regarding a future acquisition bid between the two samples of firms. However, as the market's uncertainty regarding the future bid is resolved over time, the stockholders of firms in the 'not taken over' sample lose the entire abnormal returns from the initial bid over the next two years; in contrast, those in the 'subsequently taken over within five years' sample experience a further increase in wealth. The data indicate that most of the uncertainty about a future bid is resolved within two years of the announcement of the initial unsuccessful offer.

In sum, the data presented in this section are consistent with the synergy hypothesis. The apparently permanent positive revaluation of the shares of targets of unsuccessful tender offers (documented by previous authors) can be thought of as an evidence that the capital market forms an unbiased expectation of future successful acquisition bids. A closer examination of

returns to the shareholders of firms that have received unsuccessful tender offers reveals that the market's uncertainty regarding the future bid is resolved in a manner that one can expect from an informationally efficient capital market.

4. The returns to firms making unsuccessful tender offers

In this section we provide further evidence that distinguishes between the synergy and information hypotheses by examining the returns to firms that have made unsuccessful tender offers. The methodology is identical to the *CAR* analysis described in the previous section except here we use a daily instead of a monthly time-frame. We use a daily time-frame because we are concerned with the relatively short-run implications of a firm making an unsuccessful tender offer. Event day 0 is the announcement day of the first bid made by the unsuccessful bidding firm.⁹

Table 7 presents the *AR* and the *CAR* (starting on day -20) to the shares of the 94 firms in the sample that made unsuccessful tender offers over the period 1963-1980. These data are reported in the third and fourth columns of the table. (Ignore for the moment columns five through ten.) The *CAR*'s to the shares of unsuccessful bidding firms are summarized in table 8 for various holding periods. Fig. 3 plots the *CAR* starting on day -20 for the entire sample of 94 firms along with those of two other samples, which will be discussed later. Tables 1 and 2 in section 2 contain further descriptive data concerning this sample of unsuccessful bidding firms.

The summary statistics in table 8 reveal a positive revaluation of the shares of unsuccessful bidding firms on the announcement of the bid; the twenty-two event-day *CAR* from day -20 to day +1 is +2.32% ($t=1.98$). This positive revaluation, however, quickly disappears as it becomes apparent that the bid will fail; the nineteen-day *CAR* from day +2 to day +20 is -2.96% ($t=2.72$), and the two-month *CAR* from day -20 to day +20 is -0.64% ($t=-0.40$). Thus, twenty days after the announcement, the net effect of making an unsuccessful tender offer is zero. However, note that the *CAR* continues to drift downward thereafter. In fact, the *eight-month*

⁹Because of the change from a monthly to a daily time-frame, the market model parameters are estimated on daily basis using sample returns from event day -300 to -61 (or the minimum of 60 days for the bids announced during the period of January 1, 1963, through October 1, 1963).

Switching from a monthly to a daily time-frame gives rise to a missing data problem. If missing data are encountered in the estimation period, the first valid return after the missing returns stream is excluded from the regression since this is a multiple-day return on the CRSP files. When missing returns data are encountered in the *CAR* calculation, the *AR* is calculated using a multiple-day expected return and a multiple-day realized return. The former is obtained by compounding the one-day expected return ($\hat{\alpha}_i + \hat{\beta}_i R_{mit}$) over the period of missing data. The latter is given by the next valid return on the CRSP daily return file. When the actual return on the day of announcement is missing, this multiple-day *AR* is attributed to the day of announcement.

Table 7

Percentage abnormal returns (*AR*) and cumulative abnormal returns (*CAR*) to unsuccessful bidding firms — total sample and 'no change in control' and 'change in control' subsamples in the period 1963–1980.

Event day	Total sample			No change in control			Change in control		
	<i>N</i>	<i>AR</i>	<i>CAR</i>	<i>N</i>	<i>AR</i>	<i>CAR</i>	<i>N</i>	<i>AR</i>	<i>CAR</i>
-20	94	-0.05	-0.05	27	0.60	0.60	67	-0.31	-0.31
⋮									
-15	94	0.02	0.13	27	-0.14	0.46	67	0.09	0.00
⋮									
-10	94	0.17	0.98	27	0.29	3.97	67	0.13	-0.23
⋮									
-5	94	0.16	1.26	27	0.32	3.24	67	0.10	0.47
-4	94	0.41	1.67	27	0.19	3.43	67	0.50	0.97
-3	94	0.50	2.18	27	-0.44	2.99	67	0.88	1.85
-2	94	0.08	2.26	27	-0.31	3.30	67	0.00	1.85
-1	94	0.31	2.57	27	0.09	3.39	67	0.40	2.24
0	94	-0.21	2.36	27	-0.12	3.27	67	-0.24	2.00
1	94	-0.05	2.32	26	0.14	3.41	67	-0.12	1.88
2	94	-0.38	1.94	26	0.16	3.57	67	-0.58	1.30
3	94	0.33	2.27	27	-0.44	3.12	67	0.64	1.94
4	94	-0.19	2.09	27	0.41	3.53	67	-0.42	1.52
5	94	-0.60	1.49	27	-1.10	2.43	67	-0.40	1.12
⋮									
10	94	-0.07	0.54	27	0.08	1.78	67	-0.12	0.00
⋮									
15	94	-0.49	0.15	27	-1.29	0.74	67	-0.17	0.10
⋮									
20	93	0.00	-0.64	26	-0.10	0.43	67	-0.03	-1.05
⋮									
30	94	0.14	-1.50	27	1.01	0.79	67	0.21	-2.39
⋮									
40	94	-0.12	-2.29	27	-0.85	0.27	67	0.17	-3.29
⋮									
80	94	0.14	-3.23	27	-0.04	-1.03	67	0.22	-4.08
⋮									
100	93	0.02	-3.63	27	-0.02	2.29	66	0.04	-6.00
⋮									
120	93	0.21	-3.31	27	0.17	1.23	66	-0.23	-5.12
⋮									
140	92	-0.37	-5.87	27	0.02	-0.73	65	-0.53	-7.92
⋮									
160	90	0.38	-5.66	26	0.80	1.23	64	0.20	-8.43
⋮									
180	90	0.23	-5.49	26	0.38	1.20	64	0.17	-8.18
Std. error of daily % abnormal return			0.25		0.47			0.28	

Table 8

Percentage cumulative abnormal returns for unsuccessful bidding firms — total sample, 'no change in control' and 'change in control' subsamples in the period 1963–1980 (*t*-statistics in parentheses).^a

Event time period (in days)	Total sample (<i>N</i> = 94)	No change in control (<i>N</i> = 27)	Change in control (<i>N</i> = 67)
-20 to +1	2.32 (1.98)	3.41 (1.55)	1.88 (1.43)
+2 to +20	-2.96 (2.72)	-2.98 (1.45)	-2.93 (2.40)
-20 to +20	-0.64 (0.40)	-0.10 (0.03)	-1.05 (0.59)
-20 to +140	-5.87 (1.85)	0.73 (0.23)	-7.92 (2.23)
-20 to +160	-5.66 (1.68)	1.23 (0.19)	-8.43 (2.23)
-20 to +180	-5.49 (1.55)	1.20 (0.18)	-8.18 (2.06)
Std. error of daily % abnormal return	0.25	0.47	0.28

^aThe *t*-statistics in this table are based on the assumption of serially uncorrelated standard errors of the daily abnormal returns to the indicated portfolio.

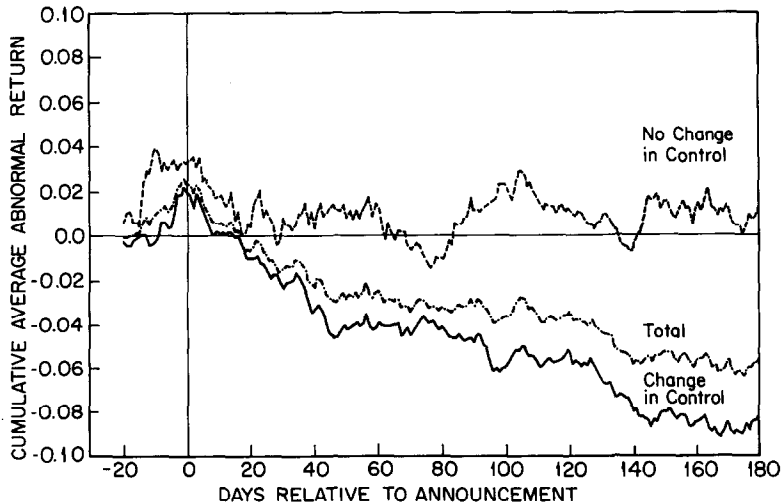


Fig. 3. Cumulative abnormal returns to unsuccessful bidding firms — total sample, and 'no change in control' and 'change in control' subsamples in the period 1963–1980.

CAR calculated over event days -20 to $+140$ is -5.8% with a *t*-statistic of -1.85 . To gain insights into this negative market reaction, we divide the sample of firms into two subsamples according to the disposition of the target shares.

In 67 of the 94 unsuccessful acquisition attempts in our sample, a rival bidding firm successfully acquired the target firm. In other words all of the unsuccessful bidding firms in this 'change in control' subsample lost their bid for the target to another firm. In the remaining 27 unsuccessful acquisition attempts, no other firm acquired the target. Thus, in effect, the firms in this 'no change in control' subsample lost their bids to the managers of the target firms.

The *AR* and *CAR* to the 27 bidding firms in the 'no change in control' subsample are presented in the sixth and seventh columns of table 7 and are summarized in table 8. Fig. 3 also shows the *CAR* starting on day -20 for this sample. The nine-month *CAR* statistic from day -20 through day $+160$ is $+1.23\%$ with a *t*-statistic of 0.19 . This statistic indicates that there is no significant change in the wealth of stockholders of firms that make unsuccessful tender offers when there is no change in control of the target. Therefore, the negative returns to the entire sample of unsuccessful bidding firms must be due to the returns to the firms in the subsample in which there is a change in control of the target.

The *AR* and *CAR* to the 67 bidding firms in the 'change in control' subsample are presented in the ninth and tenth columns of table 7 and are also summarized in table 8. Fig. 3 shows the *CAR* for this sample. The nine-month *CAR* statistic from day -20 through day $+160$ is -8.43% with a *t*-statistic of -2.23 . These results indicate that the negative returns realized by unsuccessful bidding firms are due solely to the firms in the 'change in control' subsample.

The difference between the *CAR* statistics for the unsuccessful bidding firms in the 'no change in control' and the 'change in control' subsamples suggests the following interpretation. If an unsuccessful offer is the only offer the target receives, then there is no effect on the wealth of the stockholders of the unsuccessful bidding firm. Apparently, the market does not penalize firms for making an unsuccessful tender offer when the target managers retain control of the firm. However, if the offer is unsuccessful because another firm makes a higher, successful bid, then the value of the unsuccessful bidder falls significantly.¹⁰

The continuous downward drift in the *CAR* to the firms in the 'change in control' sample may be explained by the cross-sectional variation in the length of the time between the announcement of the initial bid and the time

¹⁰All of the successful bids in this sample were effected at a market premium greater than that reflected by the rejected offer. This is consistent with our earlier interpretation of why the target shareholders might reject an initial tender offer.

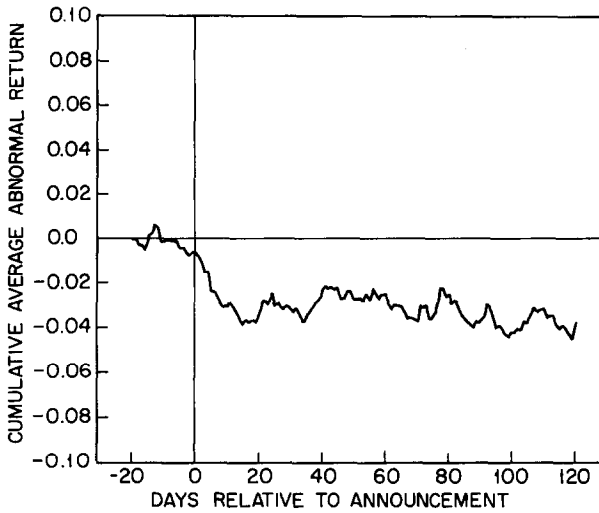


Fig. 4. Cumulative abnormal returns to unsuccessful bidding firms in the 'change in control' subsample, realigned on the day of announcement of the successful bid in the period 1963–1980.

Table 9

Percentage cumulative abnormal returns (CAR) to the 67 unsuccessful bidding firms in the 'change in control' subsample realigned on the day of the announcement of the successful bid made by a rival bidding firm in the period 1963–1980.^{a, b}

Event time period (in days)	CAR	<i>t</i> -statistic
– 10 to + 10	– 2.84	– 2.38
+ 11 to + 40	0.81	0.68
+ 41 to + 80	– 0.21	0.13
+ 81 to + 120	– 1.27	– 0.77

^aStandard error to the percentage daily abnormal return is 0.26.

^bThe *t*-statistics in this table are based on the assumption of serially uncorrelated standard errors of the daily abnormal returns to the indicated portfolio.

the market realizes that a rival bidding firm will successfully acquire control of the target resources. The average 'gap' between the announcement of the initial, unsuccessful bid and the announcement of the bid by the successful rival bidder is 60.6 days with standard deviation of 89.7 days.

To isolate more precisely the effect of losing control of the target resources to a rival bidding firm, we re-define event day 0 as the day of the announcement of the bid by the successful bidder. If our conjecture is correct

in that the change in control of the target resources is responsible for the negative drift in the *CAR*, then realigning the *CARs* on the day of the announcement of the ultimately successful bid should generate a series that drops precipitously around event day zero. To the extent that there is uncertainty as to which firm will win the bid at the time of the announcement by the rival bidding firm, the drop will take the form of a downward drift. However, in contrast to the long, continuous downward drift over seven months for the 'non-aligned' *CAR* in fig. 3, the downward drift of the realigned *CAR* should be brief and then the series should turn into white noise.

Fig. 4 plots the realigned *CAR* to the 67 firms in the 'change in control' subsample with event day 0 as the announcement of the successful rival bidder. Since the mean 'gap' between the announcement of the initial unsuccessful offer and the ultimately successful offer is 60 days we plot the realigned *CAR* from event day -20 through event day $+120$. Thus, in some average sense, day 120 in fig. 4 corresponds to day 180 in fig. 2. The *CARs* for the realigned sample are summarized in table 9 for various holding periods.

The data in table 9 substantiate the impression given by the plot in fig. 4. In the 21-day period (day -10 to day $+10$) surrounding the announcement of a successful bid made by a rival bidding firm, the *CAR* for the portfolio of unsuccessful bidders falls a significant 2.84% ($t = -2.38$). Thereafter, changes in the *CAR* are not significantly different from zero. These results support our earlier contention that the continuous downward drift in the *CAR* of fig. 3 reflects the arrival of successful offers by rival bidding firms on different event days.

The results in this section suggest that when a firm loses the competition for a target firm to a rival bidding firm, the market perceives it to have lost an opportunity to acquire a valuable resource. Perhaps the transfer of control of the target resources to another firm places the firm at a competitive disadvantage vis-a-vis the successful bidding firm. In other words, the revelation that a rival bidding firm has sufficient specialized resources to effect a successful tender offer may have a value-decreasing effect on the shares of an unsuccessful bidding firm. For example, an increase in efficiency achieved by the combination may lead to a lower product price and thereby reduce the quasi-rents to the unsuccessful bidding firm. Such a disadvantage would manifest itself in a decrease in the share price of the unsuccessful bidding firm.

In contrast to the synergy hypothesis, the information hypothesis makes no prediction concerning the relation between the share-price behavior of unsuccessful bidding firms and the ultimate disposition of control of the target resources. It is possible that the costs borne by a bidding firm in producing information regarding the 'true' value of a prospective target are

economically significant. As it becomes apparent that the offer will fail, the market value of the bidding firm will fall, reflecting the loss in expected benefits from the acquisition. However, there is no reason to believe that these information–production costs are in any way related to whether or not the target is acquired by a rival bidding firm. Thus, the information hypothesis predicts no difference in the returns to the stockholders of the unsuccessful bidding firms in the two subsamples.¹¹ Unlike the information hypothesis, the synergy hypothesis provides at least a plausible explanation for the relation between the returns to unsuccessful bidding firms and the ultimate disposition of control of the target resources. The data are consistent with the joint hypothesis that the ultimately successful bidding firm possesses a specialized resource that allows for a higher-valued offer and that the synergy created by combining with the target places the unsuccessful bidding firm at a competitive disadvantage in the marketplace.¹²

5. Summary and conclusions

In this paper we attempt to provide evidence that discriminates between the information and synergy hypotheses of tender offers. Both hypotheses predict that a successful tender offer will have a positive impact on the wealth of the target firm's stockholders. Thus, both are consistent with the empirical evidence documented in the literature on the returns to the stockholders of targets of *successful* offers. However, the two hypotheses have contradictory predictions concerning the returns to the stockholders of *unsuccessful* tender offers.

The information hypothesis assumes that the rationale behind interfirm tender offers is the bidding firm's discovery of undervalued or underutilized assets owned by the target firm. Moreover, the hypothesis assumes that this new information becomes a public good subsequent to the announcement of the offer and, thus, exploiting the information does not require a specialized resource. Therefore, the hypothesis predicts that the target stockholders will realize a significant positive abnormal return with the announcement of a tender offer and that the return will not dissipate even if the offer is rejected by the target shareholders. In contrast, the synergy hypothesis predicts that target stockholders will experience an increase in wealth only if control of their firm is transferred to another firm. Thus, the hypothesis predicts that

¹¹While it is possible that the (transactions) costs incurred by bidding firms are substantially greater in contested as opposed to uncontested tender offers, the difference in costs cannot explain the 10% difference in nine-month CARs to the 'change in control' and 'no change in control' subsamples.

¹²In a companion paper [Bradley, Desai and Kim (1982)], we document that unlike the unsuccessful bidding firms in the 'change in control' sample, the stockholders of the corresponding successful rival bidding firms do not suffer a wealth loss. The shareholders of these successful rival bidding firms neither gain nor lose from the tender offer.

the stockholders of targets of unsuccessful tender offers will not realize a permanent increase in wealth.

Consistent with the information hypothesis, we find that target stockholders, on average, realize a significant positive abnormal return with the announcement of an offer and that these returns do not dissipate subsequent to the rejection of the offer. However, in contrast to this hypothesis, we find that the revaluation is due primarily to the anticipation of a future successful acquisition bid. The entire abnormal returns to the shareholders of the target firms that are not subsequently taken over within five years of an unsuccessful offer dissipate within two years of the initial unsuccessful bid. The shareholders of those targets that are subsequently taken over experience an additional positive and significant abnormal return.

The evidence suggests that a *permanent* revaluation of the target shares requires the combination of the target resources with those of an acquiring firm. That is, the gains to the target stockholders stem from a synergy effect and not simply the revelation of new information regarding the 'true' value of the target resources. On the basis of these findings we conclude that the synergy hypothesis is a better description of the nature of tender offers than the information hypothesis.

We separate further the sample of unsuccessful targets that are subsequently taken over according to the length of time between the initial, unsuccessful offer and the subsequent, successful offer. Comparison among the returns to the shareholders of the firms in these two subsamples and those of targets that are not subsequently taken over reveals that the market's uncertainty regarding future successful acquisition bids is resolved in a manner that is consistent with an informationally efficient capital market. In light of these findings, the apparently permanent positive revaluation of the shares of targets of unsuccessful tender offers, which has been documented by previous authors, should be *reinterpreted* as evidence that the capital market forms an unbiased expectation regarding a future, successful acquisition bid.

Our empirical analysis of the returns to the shares of firms that have made unsuccessful offers is also consistent with the synergy hypothesis. We find that when target stockholders reject a bid and elect to retain their current management, the stockholders of the unsuccessful bidding firm experience no significant change in wealth. However, when target stockholders reject one bid and accept another made by a rival bidding firm, the stockholders of the unsuccessful bidding firm realize a significant wealth loss subsequent to the rejection of the bid. A further examination of the data reveals that most of the wealth loss by the shareholders of the unsuccessful bidding firm occurs on the days surrounding the announcement of the tender offer made by the successful rival bidding firm.

We interpret our results on the returns to unsuccessful bidding firms as

being consistent with the joint hypothesis that the ultimately successful bidding firm possesses a specialized resource that allows for a higher-valued offer and that the synergy created through a combination with the target places the unsuccessful bidder at a competitive disadvantage in the product and/or factor market. In contrast, the information hypothesis predicts no relation between the returns to the stockholders of unsuccessful bidding firms and the ultimate disposition of control of the target resources.

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