

Interfirm Tender Offers and the Market for Corporate Control

It is commonly believed that the interfirm cash tender offer is an attempt by the bidding firm to purchase the target shares and profit from their subsequent market appreciation. This belief is inconsistent with the available evidence. While acquiring firms earn a positive return from the tender offer, they do not realize a capital gain from the target shares that they purchase.

In the 161 successful offers in this study, bidding firms paid target stockholders an average premium of 49% for the shares they purchased. This premium is calculated relative to the closing price of a target share 2 months prior to the announcement of the offer. The average appreciation of the target shares through 1 month subsequent to the execution of the offer was 36%, relative to this same benchmark. In sum, target

This paper examines the nature of interfirm cash tender offers. The tender offer is viewed as a bid for the right to control the resources of the target firm. A model based on this interpretation, efficient and competitive markets, and rational expectations is developed and tested. The implications of this model are shown to be consistent with the following documented empirical facts concerning the average tender offer: the stockholders of both acquiring and acquired firms realize a significant capital gain; acquiring firms suffer a significant capital loss on the target shares they purchase; target stockholders realize a significant capital gain regardless of the outcome of the offer or whether or not they tender their shares.

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stockholders realized a 49% capital gain on the shares purchased by acquiring firms and a 36% capital gain on the shares they retained. Thus, bidding firms suffered a 13% loss on the target shares they purchased. However, these same acquiring firms realized an average 9% increase in the market value of their own shares as a result of the offer.¹

The paradoxical result that acquiring firms profit from the successful completion of an interfirm tender offer, yet suffer a capital loss on the target shares that they purchase, can be reconciled by considering an alternative model of tender offers. This theory views the acquisition of the target shares as a means of securing control of the target firm. The target shares are demanded by the bidding firm only insofar as they confer control. The (post-execution) premium paid tendering stockholders is viewed as payment for the right to control the assets of the target firm.

The model developed and tested in this paper assumes that the tender offer is an attempt by the bidding firm to secure control of the target firm and implement an operating strategy that will increase the value of both firms. These gains are assumed to stem from a synergy created by consolidating the two firms. The increase in the equity values of the acquiring and target firms—in the wake of a successful offer—is compelling evidence for a synergy theory of tender offers. In the successful offers of this study, the equity value of the average acquiring firm increased by \$7.7 million, in spite of the average offer premium of \$7.7 million paid to tendering stockholders.² This capital gain is calculated over the period from 2 months before the offer through 2 months thereafter. The value of the outstanding shares of successful target firms increased an average of \$31 million over the same period. These data indicate that consolidating the control of the two firms via an interfirm tender offer is a wealth-increasing investment for the stockholders of both firms.

The theory of tender offers that is advanced in this paper recognizes the existence of rivalrous firms that compete for the right to control the target resources. It is assumed that the information produced as a result of an interfirm tender offer enables other firms—including the managers of the target firm—to make a value-increasing change in the operations of the target firm. In other words, it is assumed that at least a portion of the return to preparing and effecting a tender offer becomes

1. These post-execution revaluations are consistent with those reported in Dodd and Ruback (1977). These authors document an increase in the value of target firms and a nonnegative return to successful acquiring firms.

2. This offer premium is calculated relative to the post-execution market price of a target share—40 days after the offer. Relative to the pre-announcement price—40 days before the offer—tendering stockholders received an average premium of \$25 million per offer. The capital gain to the acquiring firm's shares includes an average \$1.2 million increase in the market value of target shares held prior to the offer.

appropriate with the formal offer announcement. Thus, the announcement of a tender offer is presumed to alert other firms to the general intent of the bidding firm and initiate a competitive (auction-type) process for the target shares.

Target stockholders are assumed to be a diffuse group of homogeneous, wealth-maximizing price takers. It follows that the target shares will flow to that firm (management team) that makes the best offer in terms of the price offered for the sought-after or controlling shares and the expected post-execution value of the target shares that are not demanded.

Viewing the tender offer in terms of the model sketched above yields several implications that are at once consistent with the available data and contrary to some popular notions concerning the nature of interfirm tender offers. The first is that successful bidding firms will be forced to pay a premium—relative to the pre-announcement as well as the post-execution market price—for the target shares that they purchase. Under the assumptions of the analysis, acquiring firms cannot consistently earn abnormal returns through the market appreciation of the target shares. The data of this study indicate that they do not; on average they suffer a 13% capital loss on the target shares that they purchase. This is not to say that acquiring firms will not profit from the tender offer. On the contrary, the underlying synergy is presumed to have a value-increasing effect on the shares of both firms.

A second implication of the theory advanced in this paper is that acquiring firms cannot profit from purchasing a simple majority of the target shares and “raiding” the assets of the target firm. Such offers will be anticipated by the target shareholders and competing bidding firms. Competitive alternatives will preclude such bids from being successfully executed. The fact that the post-execution market price of the target shares is 36% higher than the pre-announcement level indicates that corporate “raiding” is not an important explanation for interfirm tender offers. A corporate raiding strategy would result in a post-execution fall in the market price of the target shares. The data reveal no such price decrease.

Finally, the theory of this paper provides an explanation for the empirical fact that not all tender offers are accepted by the target stockholders. Of the 258 offers in this study, 97 were rejected by the stockholders of the target firm. According to the theory of this paper, an unsuccessful tender offer can be explained as a rational response to the alternatives that arise in a competitive market for corporate control. Clearly, bidding firms will not make an offer if they do not expect to be successful. However, once the offer is announced and new information regarding the value of the target resources is revealed (produced), the ultimate allocation of these resources is uncertain. Competing bidding firms or the target managers themselves may be

able to exploit this new information and effect the optimal (highest-valued) allocation of the target resources.

Target stockholders will reject those offers that become dominated by a higher bid or a higher-valued production/investment plan proposed by the target managers. If this explanation for the occurrence of unsuccessful tender offers is correct, then on average, the value of a target share after the expiration of the offer will be greater than the rejected offer price. The data show that this is in fact the case.

In a sample of 97 unsuccessful tender offers, target stockholders realized an average capital gain of 45%. This average post-offer return exceeds the average premium of these rejected offers, which is 29%. The data support the contention that refusing a given tender offer may be a value-maximizing investment for the target stockholders—even though the rejected offer price is significantly greater than the pre-offer market price of a target share.

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. Target managers may have information that would induce a higher bid or a higher valuation of the target resources if disclosed. Lodging a formal opposition to an outstanding offer would be an effective means of communicating this type of information.

The distinction between target managers opposing an outstanding offer and preventing a bidding firm from even making an offer should be appreciated. While the theory admits that the former can increase the welfare of target stockholders, the theory assumes that the latter cannot. Opposing an outstanding offer is viewed as a means of communicating information to the target stockholders and other market participants. However, precluding an offer (by, for example, using the powers of the state) can only be viewed as a way of limiting the alternatives facing target stockholders. According to the theory, this cannot increase their welfare.

Target managers and the managers of bidding firms are treated equally within the context of the theory. Each management group represents an alternative allocation of the target resources. *Ex ante*, no one group is presumed to have a comparative advantage in utilizing these resources. The theory implies that target stockholders will tender their shares to that management group that will put the target resources to their most-productive (highest-valued) use. Thus, any restrictions on the opportunity set facing the target stockholders can only serve to decrease their welfare.

The empirical tests of the theory reflect the central role that has been ascribed to the rational (wealth-maximizing) response of the target stockholders to an interfirm tender offer. The data of this study include only those offers that were actually acted on by the target stockholders. Offers that were precluded by court action or withdrawn because of

target management opposition are not included in the data. Unsuccessful offers in this sample are those that were made to and rejected by the stockholders of the target firms. Consequently, many of the celebrated conflicts for corporate control are not included in the sample. Informal overtures like the Carter bid for Marshall Field, the Anderson Clayton bid for Gerber Food, and the American Express bid for McGraw-Hill—bids that never reached the target stockholders—are not part of the data base of the study.

The remainder of the paper is organized as follows. The theoretical model sketched above is developed more extensively in Section I. The implications of this theory and the relevant empirical tests of the data are presented in Section II. The conclusions of the paper are stated in Section III.

I. An Analysis of the Interfirm (Cash) Tender Offer

The interfirm cash tender offer is a proposal made by the management of one firm to purchase a significant fraction of the outstanding common stock of another legally independent corporate entity. The offer is made by the managers of the bidding firm, on behalf of their stockholders, directly to the stockholders of the target firm.

The standard analysis of the interfirm tender offer typically involves a presumption that the bidding firm is attempting to exploit some special information pertaining to the potential value of the target firm. An analogy between this situation and that of an investor who is buying on the basis of inside information is often drawn. However, this is a false analogy and one that has led to many misconceptions concerning the nature of interfirm tender offers.

One major distinction between insider trading schemes and interfirm tender offers has been generally acknowledged in the literature. The notion that control over the target resources is a central issue in the latter (and not in the former) is reflected in the works of several authors.³ Unlike the inside trader who takes a position in an "undervalued" security and waits for the market to learn of its true value, a successful bidding firm is expected to initiate this revaluation itself, by implementing a new, presumably higher-valued operating strategy. Thus, it is generally understood that the bidding firm must secure a controlling interest in the target firm in order to realize a positive return from the acquisition.⁴

3. See Manne (1965), Smiley (1976), and Dodd and Ruback (1977).

4. The fact that many tender offers require that a minimum number of shares must be tendered before the terms of the offer will be honored is consistent with this control-seeking motive of the bidding managers. The target shares represent a profitable investment only if the acquiring firm can subsequently control the allocation of the underlying target resources.

The control-seeking motive that is typically attributed to the managers of bidding firms is based on the public nature of the tender offer and the assumed existence of an efficient capital market. Since a bidding firm is required by law to purchase the target shares via a public offer, market participants will be costlessly alerted to the intentions of the firm's managers with the announcement of the offer. Moreover, federal regulation enacted in 1968 requires that all tender offers must remain open for at least 10 trading days. Thus, it is highly likely that any inside information concerning the operations of the target that the bidding managers may have will surface during the waiting period that must elapse between the announcement and the execution of an offer. Target managers as well as target stockholders have an incentive to produce and disseminate this type of information. To the extent that this inside information becomes part of the domain of publicly available information, the price of the target shares will be bid up and a profitable insider trading scheme precluded. It is therefore deduced that the demand for the target shares by the bidding firm reflects a demand to secure control of the target resources, and not an attempt to exploit some inside information.

Although the distinction between the intentions of an inside trader and the managers of a bidding firm is widely recognized, the full implication of this insight has not been developed in the literature. The important difference between the two is not whether the buyer expects to change the production/investment strategy of the target firm. Rather, the important difference is the means by which the buyer expects to profit from the acquisition of the target shares. Presumably, the inside trader can clandestinely buy the target shares at their current market price and expect to realize a capital gain once the market learns of his special information. In other words, the return to his specialized information is realized through the market appreciation of the purchased target shares.

The conventional view of tender offers is that the returns to successful acquiring firms are realized in this same fashion, that is, through the market appreciation of the target shares. For example, Manne (1965) argues that the interfirm tender offer provides an incentive for a (bidding) firm to secure control of a (target) firm that is being managed suboptimally. He argues that the return to the acquisition is given by the difference between the (currently depressed) price at which the target shares could be purchased and the market price that would prevail once control has been achieved and the suboptimal practices eliminated.

As discussed in the previous section, the testable implications of this insider trading paradigm of tender offers are not borne out by the available evidence. The data indicate that, contrary to what this scenario predicts, bidding firms do not profit from the subsequent increase in the market price of the purchased target shares.

The inability of the traditional view of tender offers to explain the positive returns realized by acquiring firms is a consequence of not abandoning the insider trading paradigm completely. Under standard neoclassical assumptions, the public nature of a tender offer precludes bidding firms from being able to systematically realize a capital gain on the target shares that they purchase. Bidding firms do not enjoy the veil of secrecy that inside traders do. This is the fundamental implication of the model that is presented below.

The fact that acquiring firms cannot theoretically and do not empirically profit from the appreciation of the target shares implies that control of the target resources is a valuable asset to a successful bidding firm. Whether this increase in value is the result of more efficient production or less competitive markets is unclear. Nevertheless, both the theoretical model developed below and the data presented in Section II imply that the value of an acquiring firm increases as a result of securing control of the target resources and not due to a capital gain realized on the target shares that they purchase.

The theoretical model of this paper is based on the following set of assumptions. Target stockholders are a *homogeneous* group of wealth-maximizing price takers. No one stockholder can affect the outcome of the offer. The capital market is efficient in that security prices reflect all publicly available information. Corporate managers act so as to maximize the market values of their firm's outstanding securities.

The tender offer process is divided into three discrete time periods: pre-announcement, post-announcement, but pre-execution, and post-execution. Typically, offers are announced two to three weeks in advance of the date of execution. Federal law which was enacted in July of 1968 requires that this interim period between announcement and execution be at least 10 trading days.⁵

5. The Williams Amendment of July 1968 to the Securities Exchange Act of 1934 brought the *cash* tender offer within the purview of the SEC. Prior to that time, only exchange offers—where the consideration is securities of the acquiring firm as opposed to cash—were governed by federal regulations. Ostensibly, the purpose of the Williams Amendment was to require bidding firms to give target stockholders sufficient time and information to make an intelligent decision as to whether or not they should tender their shares. For example, the amendment provides that the purchase of more than 5% of a firm's common stock must be made via a public tender offer and that the offer must be announced at least 10 trading days prior to the execution date. These public announcements must disclose the purchaser's identity, the source and amount of the funds to be used for the purchase, the purpose for which the purchase is being made, the number of shares the purchaser owns, and the details of any arrangements that the purchaser has made with others regarding the purchase of the sought-after shares. In addition, target stockholders have the right to reclaim their already tendered shares should a higher-valued offer materialize within 30 days of a successful offer. Moreover, if a bidding firm elects to increase the offer price relative to an initial bid, all target stockholders, even those who have already tendered their shares, must be paid the higher price. For a more extensive discussion of the intent and extent of this piece of legislation, see Brown (1971). For an analysis of the effects of the Williams Act and the numerous state takeover statutes that have been enacted subsequently, see Jarrell and Bradley (1980).

Subsequent to the announcement of a tender offer all capital market agents—including the target stockholders—are assumed to form rational expectations concerning the *ex post* value of a target share should the offer succeed. Market participants determine an expected post-acquisition market value of a target share by deducing the value-maximizing operating strategy that the bidding managers would implement should they obtain control of the target. The strategy that maximizes the value of the bidding firm, subject to any legal or contractual constraints, implies the post-acquisition market price of the target firm's shares.

Since most tender offers involve only a fraction of the outstanding target shares,⁶ the value of an announced tender offer (to the target stockholders) is given by the sum of two factors. The first, and most apparent, is the offer price times the number of target shares demanded. The second factor, which is less obvious, is the expected post-acquisition market price of a target share times the number of target shares that are not purchased.

The relevance to target stockholders of this second term, the post-execution value of the target shares that are not purchased, highlights an important difference between an interfirm tender offer and a corporate merger. A merger proposal is essentially a bid for all outstanding target shares. If the acquisition is successful, all target shares will be exchanged for either cash or shares of the acquiring firm. Once the acquisition has been effected, the target shares—claims to the net cash flows generated by the target resources—will cease to exist. Consequently, when evaluating a merger proposal, target stockholders need only concern themselves with the offer price and not the subsequent behavior of the managers of the acquiring firm. However, since most tender offers involve only a fraction of the outstanding target shares, the post-execution behavior of the acquiring managers is of utmost concern to the target stockholders.

Subsequent to the execution of most tender offers, the allocation of the target resources and hence the market value of the target shares is under the control of the managers of the acquiring firm. Of course, laws governing the fiduciary responsibilities of corporate managers and the rights of minority stockholders limit the discretion acquiring managers have in determining the post-execution value of the target shares. In addition, federal regulations require that bidding firms must fully dis-

6. It is insightful to note that in the overwhelming number of cases, successful bidding firms refuse to buy any shares that are tendered in excess of those initially sought. Also, revisions in the terms of an initial offer almost exclusively involve an increase in the demand price for the same number of target shares. These observations are consistent with the existence of a certain number of target shares that are required in order to effect a profitable tender offer. They also imply that the bidding firm does not expect a positive return through the appreciation in the target shares. If this were the case, the acquiring firm would be expected to buy all target shares tendered at the stated offer price.

close, in a prospectus accompanying the formal offer, any material changes in the operations of the target that would be made should they gain control of the firm.⁷ Nonetheless, there are many ways that the acquiring managers can have a predictable impact on the post-execution market price of the target shares. The acquiring managers can increase the value of the target shares simply by selling factors of production to the target at below-market prices or by buying products from the target at above-market prices. The value of the target shares could be decreased (and the value of the acquiring firm increased) by reversing the terms of these contracts. It is assumed that these post-execution contracts are correctly anticipated by all market participants prior to the execution of the offer. It therefore follows that from the perspective of a target stockholder the rational evaluation of an outstanding tender offer involves the amount offered by the bidding firm for the demanded shares and the implied post-acquisition value of the remaining interest in the target. If each target share has an equal probability of being accepted, and if all target shares are eventually tendered, then the post-announcement but pre-execution market price of a target share is given by

$$P_A = F \cdot T + (1 - F) \cdot P_E, \quad (1)$$

where P_A = the interim (post-announcement but pre-execution) market price of a target share; T = the per share offer price; P_E = the expected post-execution market price of a target share; F = the fraction of outstanding target shares demanded by the bidding firm.

Equation (1) reflects the federal requirement that oversubscribed offers must be executed on a pro rata basis. That is, if all shares are tendered and only a fraction are demanded by the bidding firm, then this fraction must be purchased from each tendering stockholder, and the fraction $(1 - F)$ returned.⁸

In the absence of a more profitable alternative, target stockholders would evaluate and respond to an outstanding bid in terms of the offer price relative to the expected post-execution market price of a target share. Since no one stockholder can affect the outcome of the offer, the wealth-maximizing decision rule facing each is clear. If T , the offer price, is less than the expected post-execution market price, P_E , then wealth-maximizing target stockholders would not tender their shares.

7. See n. 5 above.

8. To illustrate, if 51% of the target firm is sought—and all target stockholders tender their shares—then the acquiring firm must accept 51% of the holdings of each target stockholder. This implies that it is not possible for bidding managers to bribe a majority of target stockholders (via an inflated offer premium) into selling them control of the firm and, consequently, the ability to expropriate the wealth of the other (minority) target stockholders. Under existing federal regulations, all (tendering) stockholders must receive the same percentage compensation. Thus, *all* target stockholders would be left with a minority position in the target firm if a less than 100% tender offer were executed.

Rather, each would hope to realize this differential on all shares held. Obviously, if all target stockholders were to react in this same fashion no shares would be tendered and the offer would be certain to fail.⁹ It follows that if target stockholders are atomistic, rational wealth maximizers, a necessary condition for a successful tender offer is that the offer premium be at least as large as the expected ex-post market revaluation of the target shares. Symbolically,

$$T \geq P_E \quad (2)$$

is a necessary condition for a successful tender offer.

Inequality (2) is a necessary but not sufficient condition for a successful tender offer. Competition in the market for corporate control places additional restrictions on the properties of a successful bid. In a world of atomistic target stockholders who trade in a frictionless capital market, the supply price of the target shares is determined by the next best allocation of the target resources. One obvious alternative to an outstanding offer is the operating strategy being pursued by the current target managers. Presumably, the pre-announcement market value of the target firm represents the minimum value of the alternative opportunity facing target stockholders.

But there is no reason to expect that the bidding firm is the only firm that could effect a value-increasing change in the operations of the target firm. The announcement of the offer is assumed to generate new information regarding the value of the target. To allow for the possibility that another management team could also increase the value of the target shares relative to their pre-announcement level, define P_E^U as the expected per share value of the target resources employed in their next best allocation relative to the outstanding bid.¹⁰ Thus, competition for control of the target resources imposes a second necessary condition for a successful tender offer:

9. This criterion has been recognized by Grossman and Hart (1978) in a slightly different context. The authors use the argument to explain why closed-end mutual funds could trade at a discount from their net asset value. They argue that an offer to open up the fund by buying a 51% interest would never succeed at an offer price of $T < P_E$ = the per share net asset value, even if $T > P_0$ = the current market price. The authors refer to this situation as a free-rider problem. To see their point, consider a tender offer to open up the fund, which represents an offer of $T = P_0 + \epsilon$ per share for 51% of the fund. Note that $0.51 \cdot N_0 \cdot (P_E - T) > 0$ represents the expected gain to the bidder from opening up the fund. However, in the wake of such an offer each stockholder would want the other investors to tender their shares so that the offer would be successful and he could earn the full capital gain of $(P_E - P_0)$ on each share held. But since all stockholders would have this incentive none would tender his shares and such an offer would necessarily be unsuccessful. The model developed herein avoids this paradoxical result since it is assumed that the acquisition yields an interactive (synergistic) gain that can be shared by the stockholders of both firms.

10. The next best alternative that is implied by P_E^U might be another tender offer, a merger proposal, a joint venture, or a new production/investment strategy proposed by the current target managers.

$$F \cdot T + (1 - F) P_E^S \geq P_E^U \geq P_0, \quad (3)$$

where the left-hand side of (3) is equation (1), which defines the interim price of a target share if the offer is fully subscribed;¹¹ P_0 is the pre-announcement market price of a target share.

The model of tender offers sketched above implies two conditions for a successful tender offer. These requirements are captured by equations (2) and (3) above, and are reproduced here below:

$$T \geq P_E^S \quad (2)$$

and

$$F \cdot T + (1 - F) \cdot P_E^S \geq P_E^U \geq P_0. \quad (3)$$

The first condition, equation (2), states that the offer price, T , must be at least as large as the expected post-acquisition market price of a target share, P_E^S . Rational, atomistic target stockholders would not tender their shares for \$10 if they were expected to be worth \$15 subsequently. The second condition, equation (3), states that the per share value of the offer, in terms of the offer price and the expected post-execution price of a target share, must be greater than the share price that would obtain if the offer were rejected, P_E^U . This latter term represents the per share value of the (highest-valued) alternative opportunity facing target stockholders and must necessarily be at least as large as the pre-announcement market price of a target share, P_0 . This condition is implied by the rational evaluation of a given offer which is based on the alternatives available to target stockholders in a competitive market for corporate control.

The conditions for a successful tender offer—equations (2) and (3)—imply that successful bidding managers will be forced to pay a premium for the target shares that they purchase. More specifically, the per share value of the offer must represent a premium relative to the pre-acquisition ($T > P_0$) as well as the post-acquisition ($T > P_E^S$) market price of a target share. This immediately implies that the gains from the acquisition will not be realized through the target shares (the insider trading paradigm) but rather will be capitalized by the market directly into the price of the shares of the acquiring firm.

Inequality (3) reflects an important implication of the theory regarding the so-called corporate raiding strategy of tender offers. Consider an offer where the recognized objective of the bidding firm is to secure 51% of the target shares for a price that is just above market, liquidate the firm, and expropriate completely the value of the remaining minority interest. Equivalently, consider an offer where the bidding firm is

11. Equivalently, the left-hand side of (3) defines the per share value of a to-be-executed offer. Note the superscript S in this expression indicates the expected post-execution market price of a target share.

unable to adequately assure target stockholders that such post-acquisition wealth transfers will not take place. In terms of (3) this bid implies an offer price of $T = P_0 + \epsilon$, and an expected post-execution value of $P_E = 0$.

In the absence of an alternative offer, the wealth-maximizing response of each target stockholder to this bid is to tender his shares. If the offer is unsuccessful his wealth will remain the same whether he tenders his shares or not. But, if the offer is successful and he does not tender, his entire interest in the target will be worthless, since it is assumed that $P_E = 0$. On the other hand, if he tenders his shares and the offer is successful, he will receive, at a minimum, 51% of the pre-announcement market value of his holdings. Since the decision of any one target stockholder cannot affect the outcome of the offer, the rational response of each is to tender his shares to the bidding firm. Consequently, since target stockholders are assumed to be a homogeneous group, this optimizing behavior will insure the success of the outstanding offer even though the acquisition will decrease the wealth of the initial target stockholders.

The solution of this apparent prisoner's dilemma is a competitive market for corporate control. If the preceding offer were made, there would be an incentive for another firm or the target managers themselves to make a higher offer for the 51% interest. Abstracting from differential abilities in expropriating wealth and the costs of making a tender offer, competition to become the successful acquirer will bid up the price for 51% of the target to the market value of 100% of the firm's securities. According to (3), if F is less than one and P_E is equal to zero, then the offer price T must be sufficiently "grossed up" to compensate for the eventual wealth decrease that is expected after the execution of the offer. Algebraically, $T = P_0/F$ is the minimum per share price that a bidding firm would have to pay in order to secure control of the target. Note that this price eliminates all potential gains from the acquisition. A price less than this would permit an arbitrage profit for any competing bidder that would be willing to raise T and lower his return. Thus, competition in the market for corporate control theoretically precludes corporate raiding strategies from being positive net present value projects.

II. Implications and Empirical Results

The implications of the analysis of Section I for the price behavior of the shares of firms involved in interfirm (cash) tender offers depend on the outcome of the offer under study. If the offer is successful, the securityholders of both firms will experience a capital gain, reflecting the synergy resulting from combining the control function of the two firms. The gains to the target stockholders will be realized through the

premium $(T - P_0)$ received for the purchased shares and through the post-execution revaluation $(P_E^S - P_0)$ realized on those target shares not purchased. While stockholders of acquiring firms are expected to realize a positive return from the acquisition as well, these gains are not expected to result from the subsequent appreciation of the target shares. In other words, the analysis predicts that T , the per share offer price, is at least as large as P_E^S , the post-execution market price of a target share.

For unsuccessful offers, the analysis predicts that the post-expiration market price of the target shares will be greater than the value of the rejected bid. A tender offer will only be rejected if another, more profitable alternative materializes. In contrast, if the post-expiration market price of the target shares were at (or below) the pre-announcement level, then it could be reasoned that target stockholders are in general irrational in rejecting an interfirm tender offer. Relatedly, a negative post-expiration revaluation of the target shares may be interpreted as evidence that an inefficient and entrenched target management has been successful in thwarting a profitable takeover.

The Data Base and Statistics Used in the Empirical Tests of the Study

In order to test the implications of the model, a sample of 258 cash tender offers that occurred over the period July 1962–December 1977 has been collected.¹² The empirical tests of the model involve the following statistics that have been taken from this sample.

Equity price index (ρ). An equity price index has been calculated for each firm in the data base.¹³ Each price index is defined relative to the closing market price of the firm's common stock 41 trading days (2 calendar months) prior to the announcement of the offer. It is assumed that this lead time is sufficient to capture any "leakage" of information that might precede a formal offer. Define $r_{i,D}$ as the value of the price index of the shares of the i th firm on (event) day D . Algebraically,

12. The data concerning these 258 observations have been compiled from several sources. Many of the offers occurring prior to 1969 are cited in the Austin-Fishman (1970) data base. Tender offers which have occurred subsequent to 1974 are listed in the weekly publication *Securities and Exchange Commission News Digest* (1974–77). The remaining observations were obtained from announcements appearing in the *Wall Street Journal* (1956–77). All announcements have been verified by cross-referencing these sources with citations appearing in the *Wall Street Journal Index* (1956–77). The number of outstanding common shares of the target firms was obtained from the *Standard and Poor's Corporation Security Owners Stock Guide* (1956–77). The number of shares secured in each offer was ascertained from the Securities and Exchange Commission Official Summary (1968–77) and from articles appearing in the *Wall Street Journal* (1956–77).

13. The return and price data used in the empirical analysis of this paper were taken from the data files compiled by the Center for Research in Security Prices (CRSP) of the University of Chicago.

$$r_{i,D} = \prod_{d=-41}^{D-1} \left(\frac{V_{i,d+1}}{V_{i,d}} \right),$$

where $V_{i,d}$ is the per share value of the equity of the i th firm on day d , adjusted for all splits and dividends over the 2-month period prior to offer announcement.

A time series of the mean value of these price indexes has been calculated for each of the relevant subsets of the data base. For example, define $\rho_{T,D}^S$ as the mean value of the price indexes of the shares of target firms (T) involved in successful tender offers (S) on day D . Algebraically,

$$\rho_{T,D}^S = \frac{1}{N} \sum_{i=1}^N r_{i,D},$$

where N is the number of target firms in the data base involved in successful tender offers. Note that D is defined relative to the tender offer announcement date; for example, $D = 0$ corresponds to the announcement date for each of the offers in the study.

Abnormal equity price index ($X\rho$). An abnormal price index has been calculated for each security in the data base. These abnormal price indexes have been developed from an excess returns file compiled by the Center for Research in Security Prices (CRSP) of the University of Chicago. A complete description of the construction of this excess returns series can be obtained directly from the center. Briefly, a daily excess return for each security listed on the NYSE and the ASE has been calculated according to the following algorithm. For each year, the listed securities are grouped into 10 equal portfolios according to a measure of their underlying risk. Each security is thus assigned to a particular control portfolio based on its estimated risk. Invoking the theory and assumptions of the Capital Asset Pricing Model, an estimate of the daily excess return to a given security is given by the difference between the realized return to the security and its companion control portfolio—each adjusted for splits and dividends.

Define $XR_{i,d}$ as the excess return (taken from the CRSP data file) to the shares of the i th firm on day d . The abnormal price index for security i on day D is given by

$$XR_{i,D} = \prod_{d=-40}^D (1 + XR_{i,d}).$$

Note that this index is also defined relative to the closing market price of the security 41 trading days prior to the offer. In other words, $XR_{i,-41}$ is defined equal to one.

The mean of these abnormal price indexes for a given subset of the data base, on a given day, is defined as $X\rho_{G,D}$, where G is the designation of the particular group of securities under study. For example, $X\rho_{B,D}^S$ defines the mean abnormal price index for successful (S) bidding firms (B) on day D and is given by

$$X\rho_{B,D}^S = \frac{1}{N} \sum_{i=1}^N Xr_{i,D},$$

where N is the number of successful bidding firms in the sample.

Offer price index per target share purchased (π). A mean offer price index has been calculated for each of the relevant subsets of the offers in the data base. Define π as the mean offer price relative to the market price 41 trading days prior to the announcement of the offer. Then,

$$\pi = \frac{1}{N} \sum_{i=1}^N \left(\frac{T_i}{V_{i,-41}} \right),$$

where N is the number of offers in the subset under study, T_i is the offer price of the i th bid, and $V_{i,-41}$ is the market price of the shares of the i th target firm 41 trading days prior to the offer, adjusted for all stock splits and dividends over the 2-month interval preceding the offer. Thus, π^S is the mean of (one plus) the market premiums paid tendering stockholders for each target share purchased.

Offer price index per target share outstanding ($F\pi$). An index of the offer premium per target share outstanding has been calculated for the offers in each of the relevant subsets of the data base. Define this adjusted offer premium as $F\pi$. Then,

$$F\pi = \frac{1}{N} \sum_{i=1}^N \left(\frac{V_{i,-41} + F_i(T_i - V_{i,-41})}{V_{i,-41}} \right),$$

where N is the number of offers in the subset under study, $V_{i,-41}$ is as defined before, T_i is the offer price of the i th bid, and F_i is the fraction of target shares demanded in the i th offer. Note that when $F = 1$, that is, all target shares are demanded, $\pi = F\pi$.

The variable F_i , the fraction of the target shares demanded in the i th offer, was taken from the published terms of each offer. The maximum number of shares that the bidding firm would accept if all were tendered divided by the total number outstanding less those already held by the bidding firm was used as the proxy for this variable.¹⁴ Thus, like

14. In the sample of 161 successful tender offers, the average acquiring firm held 5% of the target shares prior to the offer announcement.

the analysis itself, this proxy presumes an all equity target firm with no convertible bonds or warrants outstanding.¹⁵

Successful Offers

The statistics defined in the preceding subsection can be used to test the implications of the model for the price behavior of the shares of firms involved in successful tender offers. For purposes of this study a tender offer is considered to have been successful if at least 50% of the number of shares demanded was actually purchased by the bidding firm.¹⁶

Target firms. The analysis of Section I predicts two movements in the price level of the target shares subsequent to the announcement of a successful tender offer. These two levels correspond to the two relevant time periods that follow the announcement of an offer. The first is the market price that would prevail during the interim period between the announcement and the execution of the offer, P_A . The second is the market price that would obtain subsequent to the execution of the offer—after control of the target resources has been transferred to the acquiring firm, P_E .

The first condition for a successful tender offer defines the first of these two levels. Define P_A^S as the post-announcement but pre-execution market price of a target share involved in a successful tender offer. Thus, P_A^S is the price that would prevail after market participants became aware that the outstanding offer would succeed but before it was actually executed:

$$P_A^S = F \cdot T + (1 - F) P_E^S \geq P_E^U \geq P_0, \quad (4)$$

where the subscript A refers to the interim time period between the announcement and execution of the offer and the superscript S designates that the offer will be successfully executed.¹⁷

15. Theoretically one would want to account for the probability that these securities would be converted into common stock and tendered to the bidding firm. To the extent that this is a common phenomenon, the denominator of F is understated. However, the numerator of F ignores the fact that many tender offers include bids for these convertible securities. This omission tends to reduce the systematic bias resulting from an underestimate of the number of target "shares" outstanding.

16. Often fewer shares are tendered than are demanded by the bidding firm. Many times acquiring firms are willing to accept those tendered rather than accept none at all. However, in this sample, the issue is not very important. The average ratio of shares purchased to shares demanded for these 161 offers is .96 with a standard deviation of .02. It should be noted that the assumption of homogeneous target stockholders is not reflected in the observed data. The homogeneity assumption of the model implies that either all target shares will be tendered or none at all. Empirically, this is not the case. Heterogeneous capital gains tax rates and/or heterogeneous expectations of the future value of the target shares would explain the absence of a unanimous response to a given tender offer.

17. Note that if P_A^S were not equal to the value given by eq. (4), target stockholders would not be indifferent between tendering their shares and selling them in the open

The second price movement of the target shares that is predicted by the model occurs after the offer has been executed. Since an offer price higher than the post-execution market price is a necessary condition for a successful tender offer, and the interim price is a weighted average of the two (see eq. [4]), the analysis implies that the post-execution market price, P_E^S , will be less than the interim price P_A^S . This predicted price drop reflects the elimination of the offer premium ($T - P_E^S$) that accompanies the completion of a successful tender offer.¹⁸

The predicted time series of the market price of the shares of a successfully acquired target firm is illustrated in figure 1. This pattern of prices reflects all of the implications of the model. A successful tender offer will necessarily involve a positive market premium for the purchased target shares ($T \geq P_0$). In order to induce target stockholders to tender their shares, this offer price must be at least as large as the post-execution market price ($T \geq P_E^S$). The post-execution market price is predicted to be higher than the pre-announcement level due to a higher valued allocation of the target resources ($P_E^S \geq P_0$). Since the post-announcement price is weighted average of the offer price, T , and the post-execution price, P_E^S , the model predicts that this interim price will be less than the former and greater than the latter ($T \geq P_A^S \geq P_E^S$). Finally, the predicted post-execution revaluation of the target shares ($P_E^S - P_0 \geq 0$) implies an observable minimum value of a given offer—and hence a minimum value for the post-announcement market price of a target share. From the earlier analysis, if $P_E^S \geq P_0$, and $P_A^S = (1 - F) \cdot P_E^S + F \cdot T$ (see eq. [4]), then it follows that $P_A^S \geq P_0 + F \cdot (T - P_0)$. Intuitively, if corporate raiding ($P_E^S < P_0$) is precluded, then the minimum per share value of a tender offer is the pre-announcement level P_0 , plus the value of the offer premium per target share outstanding, $F \cdot (T - P_0)$. Thus, the model predicts that the interim price will be less than the offer premium and greater than this minimum value, $T \geq P_A^S \geq P_0 + F \cdot (T - P)$. This inequality is reflected in the predicted price pattern that is presented in figure 1.

The data in figure 2 plot the time series of $\rho_{T,D}^S$, the mean price index for the 161 successfully acquired target firms in the sample, over the period 40 trading days prior to the offer announcement through 40 days

market—a condition required of an equilibrium market price while a successful offer is outstanding.

18. It should be noted that this systematic price decrease does not imply an arbitrage opportunity involving a post-announcement short sale of the target shares. Since all investors are assumed to know F , T , and P_E^S , the lender in a short sale would demand compensation of $F \cdot (T - P_E^S)$ per share if the shares are not returned before the execution date. A direct analogy exists in the case of short sales of securities where a dividend has been declared but not distributed. The borrower must compensate the lender for any dividend or interest which is paid while the short position is open. Thus, investors cannot profit from the fact that the post-execution market price of a target share is less than the interim price that prevails while a successful offer is outstanding.

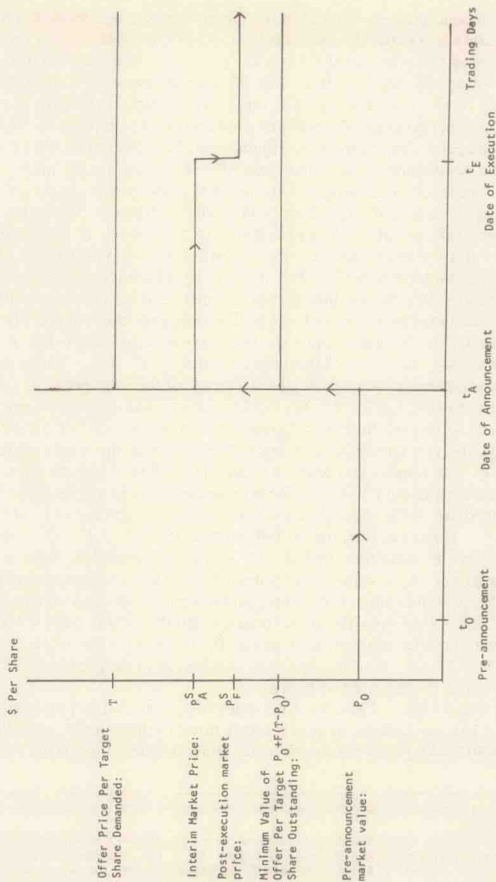


FIG. 1.—Predicted time series of the price of the shares of target firms involved in successful tender offers

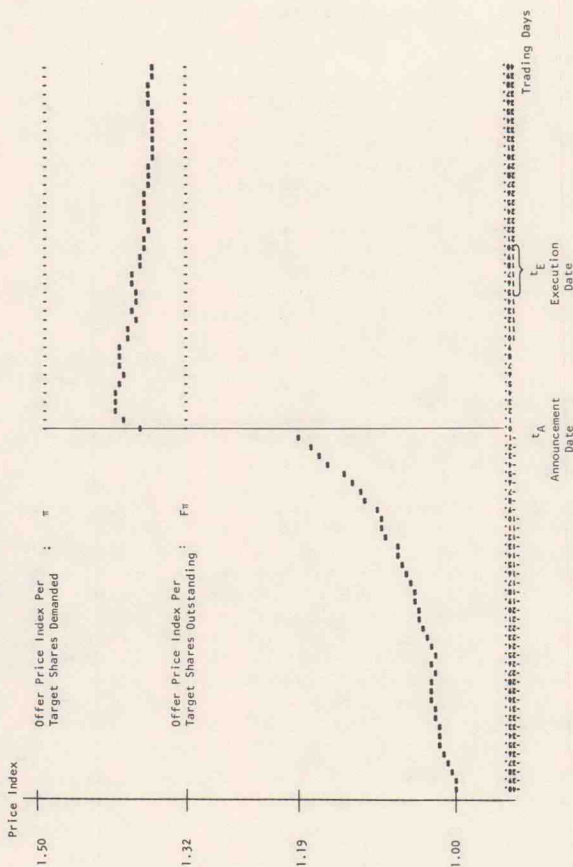


FIG. 2.—Time series of the mean price index of the shares of 161 target firms involved in successful tender offers ($p_{T,n}^S$)

thereafter. The offer price index per target share purchased, π , and the offer price index per target share outstanding, $F\pi$, are also given in the figure.

In order to test the implications of the analysis, let ρ_A^S be the empirical proxy for ρ_A^S , the post-announcement but pre-execution mean price level of the shares in the sample. This proxy presumes that the full implications of an offer are incorporated into the price of the target shares within 5 trading days of its announcement. Let ρ_{40}^S represent the proxy for ρ_E^S , the mean post-execution price level of the target shares. All offers in this study were either executed or withdrawn within 40 trading days of the announcement date.¹⁹

The data in figure 2 support the major implications of the analysis. Acquiring firms pay a substantial market premium for the target shares that they purchase. In this sample, the mean offer premium is 49% ($\pi = 1.49$) with a cross-sectional standard deviation of $\sigma_X = 4\%$.²⁰ The data also show that while the post-execution market price of a target share is significantly higher than its pre-announcement level ($\rho_{40}^S = 1.36$, $\sigma_X = .03$), this revaluation is significantly less than the premium paid target stockholders ($\pi - \rho_{40}^S = 1.49 - 1.36 = .13$, $\sigma_X = .03$). In this sample acquiring firms did not profit from the purchase and subsequent appreciation in the target shares; they suffered an average capital loss of 13% on each target share that they bought.

The data also indicate that, consistent with the implications of the model, the interim price is less than the offer price per share purchased ($\rho_A^S < \pi$) and greater than the post-execution market price ($\rho_A^S > \rho_E^S$) as well as the predicted minimum value of the offer ($\rho_A^S > F\pi$).²¹ The behavior of market participants, as manifested in the market price of the target shares, is consistent with that predicted by the analysis.

Finally, it should be noted that these data are inconsistent with the corporate raiding strategy of tender offers. Recall that this argument implies that target stockholders will suffer a capital loss on the target shares that are not purchased by the acquiring firm. In terms of the model, the post-execution price, P_E^S , will be less than the pre-announcement price, P_0 . This implies that the price index, ρ_E^S , will fall precipitously subsequent to the execution of the offers. The data in

19. As indicated by the designation of t_E along the "day" axis in the figure, the average tender offer in this sample was executed within 3 or 4 weeks (15–20 trading days) after the date of announcement.

20. Cross-sectional standard deviations are reported as σ_X , whereas standard errors calculated from time-series data are designated σ_t .

21. The empirical results for the subset of successful target shares are as follows:

$$\begin{aligned}\pi - \rho_E &= 1.49 - 1.36 = .13, \sigma_X = .03, \\ \pi - \rho_A &= 1.49 - 1.40 = .09, \sigma_X = .03, \\ \rho_A - \rho_E &= 1.40 - 1.36 = .04, \sigma_X = .015, \\ \rho_A - F\pi &= 1.40 - 1.32 = .08, \sigma_X = .01.\end{aligned}$$

TABLE 1 Analysis of the Market Pricing Equation
 $\rho_A^S = \beta_0 + \beta_1(F\pi) + \beta_2[(1-F)\rho_E^S]$

Independent Variable	$\hat{\beta}$	$\sigma(\hat{\beta})$
β_0	.0276	.0149
β_1	.9471	.0290
β_2	.7960	.0587

NOTE.— $R^2 = .8750$; $N = 161$.

figure 2 reveal no such price drop. In fact, target stockholders realized a significant 36% capital gain on the shares not purchased in the offer.²² Thus, it does not appear that corporate raiding is a valid interpretation of the interfirm tender offer.

In sum the data appear consistent with the implications of the model. Compare figure 1 and figure 2. In evaluating an outstanding offer, target stockholders respond rationally to the fraction of target shares demanded, the per share offer price, and the post-execution market price of a target share. These are the parameters of the market pricing equation of the model—equation (4). As a more direct test of the relevancy of the model developed in Section I, the market pricing equation was fitted directly to the data using multiple regression techniques. The following regression model was fitted to the 161 successful target observations in the data base: $\rho_A^S = \beta_0 + \beta_1(F\pi) + \beta_2[(1-F)\rho_E^S]$. The predictions of the model are that $\beta_0 = 0$, $\beta_1 = \beta_2 = 1$.

The results of this analysis are given in table 1. Note that the model accounts for 88% of the cross-sectional variation in post-announcement market price of the target shares. Moreover, the estimates of both β_0 and β_1 are within two standard deviations of their predicted values. However, although highly significant, the estimate of β_2 is significantly less than its predicted value of 1.0.

Successful acquiring firms. The theory of this paper predicts that the market price of the shares of acquiring firms will increase, reflecting the synergy from gaining control of the target resources. To test this implication a time-series of the abnormal price index $X\rho_{B,D}^S$ was calculated for the shares of the 88 successful acquiring firms in this study.²³ This series is plotted in figure 3.

22. As a more rigorous test of the raiding hypothesis, the mean abnormal price index $X\rho_{B,80}^S$ was calculated for the shares of the 98 target firms that remained listed on the NYSE or ASE for at least 80 days after the offer. This statistic is 1.20 with a standard deviation of .04.

23. The disparity between the number of acquiring firms and the number of target firms is due to lack of data for some of the former. Many bidding firms are foreign concerns or privately held firms and consequently are not included in the CRSP data base.

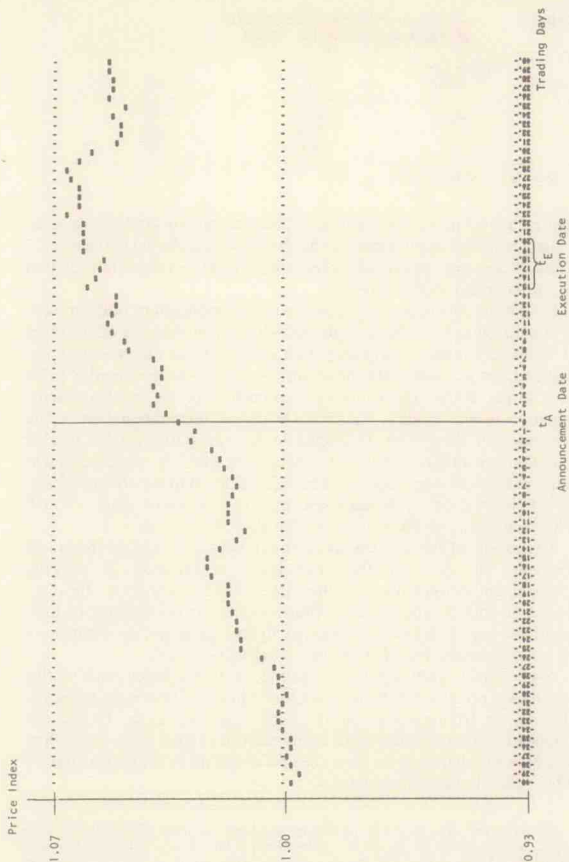


FIG. 3.—Time series of the mean abnormal price index of the shares of 88 acquiring firms ($Xp_{B,D}^S$)

The data in figure 3 are consistent with the implications of the model. On average, acquiring stockholders realize an excess capital gain of 4% ($X\rho_{B,5}^S = 1.04$, $\sigma_X = .01$) within 5 trading days of the offer. This excess capital gain reaches 5% ($X\rho_{B,40}^S = 1.05$, $\sigma_X = .02$) within 40 days of the offer.²⁴ Note that this increase in equity value obtains in spite of the significant premium paid to tendering stockholders. In this sample, 88 acquiring firms paid target stockholders a 48% premium relative to the pre-announcement price ($\pi = 1.48$, $\sigma_X = .03$) and a 9% premium relative to the post-execution price ($\pi - \rho_{T,E}^S = 1.48 - 1.39 = .09$, $\sigma_X = .02$) for the target shares they purchased.

Taken together the data of figures 2 and 3 present a clear picture of interfirm tender offers. The stockholders of both firms realize a significant capital gain as a result of the combination. More revealingly, the gains to the acquiring firm do not obtain through the target shares per se, as the insider trading paradigm would predict. Rather, these gains are realized through the appreciation of the shares of the acquiring firm itself. This finding is consistent with a synergy interpretation of tender offers. The fact that the acquisition of the target shares is—on paper—a financial loss yet—on net—a positive valued investment implies that the value of the target shares stems not from their proportional claims to the net cash flows of the target firm but rather from the control of the target resources that they confer.

The synergistic gains to these corporate combinations are significant. The interfirm tender offer appears to be an important mechanism for channeling corporate resources to a higher-valued (more productive) use. These results (conclusions) are invariant to the particular time frame chosen within the 16-year period 1962 through 1977.

These findings demonstrate significant synergistic gains to interfirm tender offers. However, they provide no information as to the social welfare effects of the revealed synergy. These combinations may have either welfare-reducing or welfare-increasing consequences. Creating market power or integrating for the purpose of practicing price discrimination would reduce social welfare. Exploiting scale economies or implementing a cost-reducing operating strategy would increase social welfare.²⁵

24. The average daily excess return (taken directly from the CRSP data file) to this portfolio was .0018 over the period $t = -15$ through $t = +5$. The standard deviation of this 21-day mean return has been estimated to be $\sigma = .0005$ based on the excess returns series preceding the offer announcement ($t = -40$ through $t = -16$). Thus, the average daily excess return is positive and significant.

25. Note that removing an inefficient management group is another example of a welfare-increasing change in the operations of the target firm. However, the preceding analysis implies that the returns from effecting this value-increasing change in the target must be realized through internal transfer schemes and not through the appreciation of the target shares.

Unsuccessful Offers

Target firms. Under the assumptions of the model, rational wealth-maximizing target stockholders will reject a tender offer only if another higher valued alternative is available. Similarly, if target managers consistently act in their stockholders' interests they will only oppose non-value-maximizing tender offers.

The market pricing equation that was developed in Section I and tested in the last subsection reflects the rational evaluation of an outstanding tender offer. The increase in the value of a target share resulting from a given offer was shown to be the weighted average of the premium offered for the sought-after shares, π , and the post-execution revaluation of the remaining target shares, ρ_E^S . The appropriate weights for this estimate are the fraction of the outstanding target shares demanded by the bidding firm.

Define $\rho_{T,E}^U$ as the mean post-expiration price index of the target shares involved in unsuccessful tender offers. Let this variable represent the mean return to a target share assuming that the offer is rejected and the next-best alternative accepted. Note that this alternative may involve accepting another tender offer, a merger proposal or a revised operating strategy that is proposed by the current target managers.

Using this notation and that developed earlier, the model predicts that for unsuccessful tender offers the post-expiration market price of a target share will exceed the per share value of the rejected offer. Symbolically,

$$\rho_E^U > (1 - F)\rho_E^S + F\pi. \quad (5)$$

Inequality (5) states that an offer will be rationally rejected if the per share value of the offer is less than the market price implied by the next best allocation of the target resources—relative to the outstanding bid.²⁶

In order to test the implications of this paper for the returns to the shares of unsuccessful target firms, the sample of unsuccessful offers has been divided into two mutually exclusive groups. One group consists of those offers in which all outstanding target shares were demanded by the bidding firm, that is, $F = 1$. The second group consists of the remaining—necessarily fractional—offers, that is, $F < 1$.

26. Per the analysis of Section I, inequality (5) is a sufficient but not a necessary condition for an unsuccessful tender offer. An offer would fail even if it were the optimal allocation of the target resources if the offer price, T , were less than the expected post-execution market price, ρ_E^S . However, if, as assumed, these prices are under control of the acquiring managers, no offer would ever be made where the offer price were less than the anticipated post-execution market price. Therefore, in light of this consideration, inequality (5) is both a necessary and sufficient condition for an unsuccessful tender offer.

An examination of inequality (5) reveals why this dichotomy is useful. If $F = 1$, the unobservable variable ρ_E^S , which is the post-execution price index that would have obtained had the offer been accepted, disappears from the equation. If all target shares are purchased by the acquiring firm, their subsequent value is of no consequence to tendering stockholders.²⁷ Only the offer premium is relevant. Thus, for unsuccessful tender offers, where $F = 1$, the prediction is that the post-expiration index of the target shares, ρ_E^U , exceeds the rejected offer premium, π .

The time series of the mean price index of the target shares involved in 33 unsuccessful tender offers where $F = 1$ is presented in figure 4. The offer price index, π , is also shown in the figure.

The data show that ρ_{40}^U , an estimate of the post-execution price level of a target share, is 67% above the pre-announcement level ($\rho_{40}^U - 1 = .67$, $\sigma_X = .07$). Moreover, this increase in the value of the target shares is greater than the rejected offer premium ($\rho_{40}^U - \pi = 1.67 - 1.52 = .15$, $\sigma_X = .04$). The data are consistent with the theory of this paper. A tender offer will be rejected only if a higher-valued alternative materializes. The fact that the post-execution price index is significantly greater than the rejected offer price is consistent with this prediction.

As developed above, the evaluation of an unsuccessful, fractional tender offer ($F < 1$) requires the knowledge of the post-execution market price of a target share that would have obtained had the offer been successful. If the market's expectation of this price level is on average positive—a supposition supported by the empirical analysis of successful offers—then a testable hypothesis can be formulated. Under the assumption that the bidding firm would not have dissipated the value of the target shares had it secured control of the firm, the prediction is that the post-announcement price of the target shares will be greater than the minimum value of the outstanding offer per target share outstanding ($\rho_5^U > F\pi$).

Figure 5 presents the time series of $\rho_{T,D}^U$, the price index of the 64 firms in the data base that were the targets of unsuccessful, fractional tender offers. The minimum value of the rejected offers, per target share outstanding ($F\pi$), is also plotted.

The data show that the target stockholders of these firms realized a significant capital gain in the wake of an unsuccessful tender offer ($\rho_5^U = 1.36$, $\sigma_X = .04$). Moreover, this mean price index is significantly greater than the minimum value of the rejected offer ($\rho_5^U - F\pi = 1.36 - 1.17 = .19$, $\sigma_X = .02$).

The data of figures 4 and 5 support the implications of the theory concerning the returns to the shares of firms that are the targets of

27. Provided of course that $\pi > \rho_E^S$.

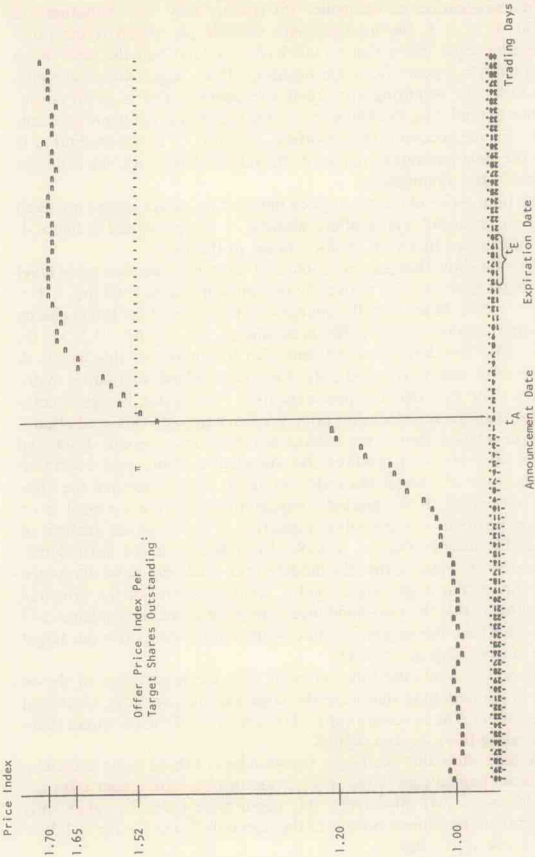


FIG. 4.—Time series of the mean price index of the shares of 33 target firms involved in unsuccessful tender offers where all target shares were sought ($\rho_{F,D}^U; F = 1$).

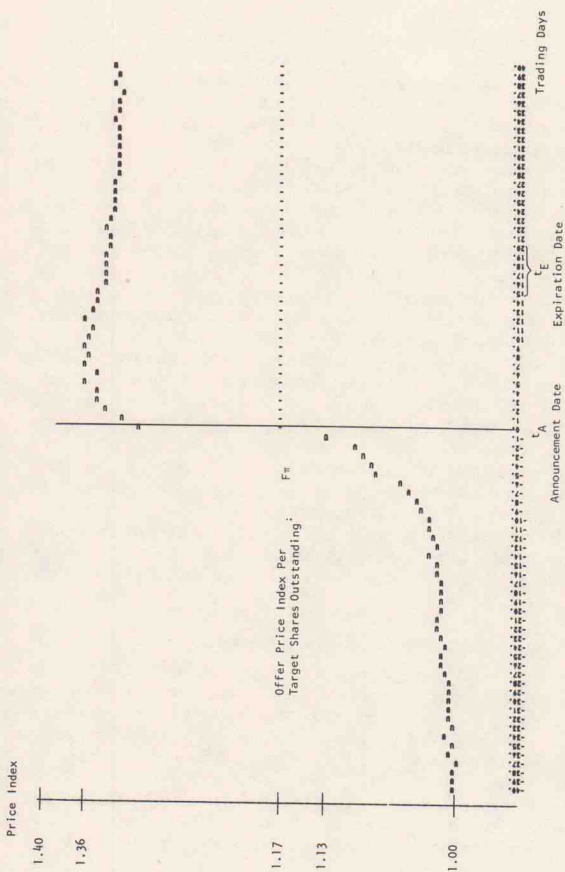


FIG. 5.—Time series of the mean price index of the shares of 64 target firms involved in unsuccessful tender offers where less than all target shares were sought ($p_{T,D}^U$; $F < 1$).

unsuccessful tender offers. Target stockholders display no degree of irrationality in rejecting these offers—even though π , the offer price index per target share demanded, is significantly greater than zero.

Unsuccessful bidding firms. The results of the analysis of unsuccessful bidding firms are reported in figure 6. The time series of the mean abnormal price index $X\rho_{B,D}^U$ is plotted in the figure.²⁸ The value of this statistic on the fortieth day after the offer is 4% below its pre-announcement level ($X\rho_{40}^U = .96 - 1.0 = -.04$, $\sigma_t = .02$). Thus, when general market activity is netted out, an unsuccessful tender offer has a negative impact on the value of the bidding firm.

The negative return realized by unsuccessful bidding firms may be explained by examining the major costs incurred by these firms. Obviously, there are the out-of-pocket costs such as legal fees, filing fees, and advertising expenditures. A less obvious cost is the payment to investment banks for making available the substantial amount of cash that would be required if the offer had succeeded. The average offer in this sample represents a potential cash liability of almost \$90 million. In addition to these out-of-pocket costs there may be other "indirect" costs of an unsuccessful bid. Suppose at some time prior to the offer the market had expected that the bidding firm would be in a position to make a profitable acquisition sometime in the future.²⁹ Under these conditions an unsuccessful offer might cause a revaluation in the market's assessment of the costs of an acquisition and, therefore, the (market) value of the acquiring firm.

For whatever reason, the data of the study indicate that while target firms experience a significant capital gain irrespective of the outcome of the tender offer, bidding firms profit only if the bid is successfully executed.

A Competitive Market for Corporate Control

The price behavior of the target shares (figs. 2, 4, and 5) shows that the tender-offer process generates a significant amount of new information concerning the value of the target resources. While one can never assign causality (Did the tender offer cause the production of new information or did the discovery of new information precipitate the tender offer?), the dramatic "jump" in the price of the target shares around the announcement date indicates that it is the formal offer that initiates this production process. In many cases this information is sufficient to induce other firms to enter the competition for the control

28. This statistic for the sample of successful acquirers is plotted in the figure as well. The results for successful bidding firms are plotted as an *S* and those for unsuccessful bidding firms as a *U* in the figure.

29. Consider the case where the market value of a firm increases as a result of the creation of an internal acquisitions group.

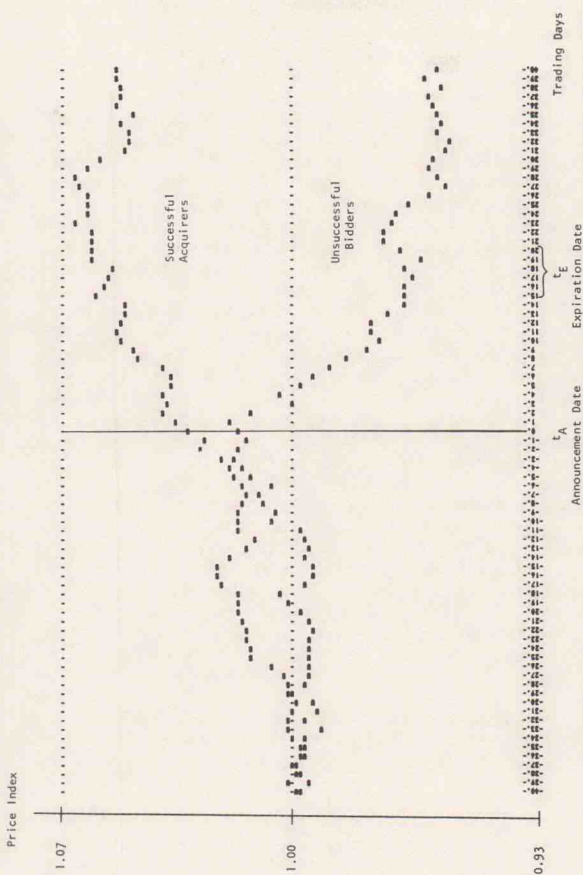


FIG. 6.—Time series of the abnormal price index of the shares of 88 acquiring firms and 46 unsuccessful bidding firms

of the target firm. Of the 97 unsuccessful offers that are reflected in the data of figures 4 and 5, 56 were followed by a successful tender offer or a successful merger proposal within 2 months of the initial offer; 23 of these successful offers were made by the initial bidding firm and 33 were made by other firms.³⁰

The empirical evidence also indicates that the target managers themselves can implement a higher-valued operating strategy as a result of the information produced during the tender offer process. The price indexes for the shares of the 41 firms in the sample that were the target of a single unsuccessful tender offer have been computed. Thus, this sample consists of those cases where the target stockholders rejected an outside bid in favor of retaining their current managers. The mean excess capital gain to these shares through 80 trading days after the offer is 22% ($X\rho_{80}^S - 1 = .22$, $\sigma_t = .05$).

The ability of the target managers to capitalize on the opportunity facing the initial bidding firm may account for the fact that many tender offers are opposed by the target managers. At least for the cases in this study, one cannot reject the notion that the opposition by the target managers was in the target stockholders' interests. More generally, these findings support the assumption of a competitive market for corporate control in which the current target managers represent an important alternative to any takeover attempt.

The existence of a competitive market for corporate control (via interfirm tender offers) is also reflected in the price behavior of the shares of the bidding firms. The mean abnormal price index to the shares of all 134 bidding firms in the data base (which includes 88 successful and 46 unsuccessful bidding firms) 80 days after the offer is insignificantly different than the pre-announcement level ($X\rho_{80} - 1 = .02$, $\sigma_t = .02$). Thus, on average, *bidding* firms realize no abnormal returns from the tender-offer process, which is consistent with the notion of a competitive market for the right to control the target resources.³¹

30. It is perhaps insightful to note that in this study target stockholders realized a greater capital gain when their shares were purchased by a (second) competing bidder rather than the initial bidding firm. The mean excess price index 5 days after the offer is 1.33 for the shares of the 127 target firms that were acquired by the initial bidding firm ($X\rho_5^S = 1.33$, $\sigma_t = .03$). For the 13 target firms that rejected the offer of the initial bidder in favor of a competing bid (made by another firm) this statistic is 1.61 ($X\rho_5^S = 1.61$, $\sigma_t = .09$).

31. Note that the bidding firms in this study represent a biased sample in that they are all firms that made an actual offer. Firms that incurred the costs of formulating an offer but for some reason elected not to pursue the bid are obviously not a part of the data base. This omission biases the total return to all bidding firms upwards—which could account for the positive, albeit insignificant, 2% return reported above. However, these data are only relevant to the extent that the sample of the study accurately reflects the true population of tender offers. Since all offers in the data base involve either NYSE or ASE common stocks, some important biases are obvious.

III. Conclusions

The results of this study show that the successful completion of an interfirm cash tender offer is a value-increasing investment for both the target and acquiring firms. Target stockholders gain through the premium they receive for the shares purchased by the acquiring firm and through the capital appreciation (relative to pre-announcement market price) of the target shares they retain. This revaluation of the target shares presumably arises from a revised operating strategy that is implemented by the acquiring firm subsequent to securing control of the firm. The data also show that the stockholders of acquiring firms realize a capital gain as a result of the acquisition of the target shares. However, these gains are not realized through the market appreciation in the purchased target shares. While the post-execution market price of a target share is significantly higher than its pre-announcement level, the post-execution price is significantly less than the per share price paid by the acquiring firm. Taken together, these findings are consistent with a synergy interpretation of interfirm tender offers.

Under the assumptions of the model developed in Section I, acquiring firms cannot systematically profit from the market appreciation of the purchased target shares. This conclusion follows from the inherent public nature of the tender offer and a rational response to the bid by the target stockholders and competing management groups. Atomistic target stockholders, who individually cannot affect the outcome of an outstanding offer, will never tender their shares at an offer price that is less than the price which is expected to prevail subsequent to the acquisition. Rational target stockholders will not systematically underestimate the value of their holdings. Moreover, competing management groups, including the target managers themselves, are expected to counter any offer that does not reflect the optimal allocation of the target resources. Competition for control of the target resources requires a successful bid to exceed the value of the next best alternative. Any surplus of this value resulting from the combination will naturally accrue to the factors that give rise to the underlying corporate synergy. That is, the gain to the acquisition will be incorporated into the price of the shares of the acquiring firm directly, since these securities represent the claims to the specialized resource (of the acquiring firm) that precipitated the profitable investment opportunity. It is in this sense that the gains from the acquisition are not realized through the appreciation in the target shares, but rather through an increase in the market price of the shares of the acquiring firm itself.

The rational response to an interfirm tender offer is also reflected in the returns to the shares of firms that are the targets of unsuccessful offers. The post-expiration market price of these target shares is significantly greater than the cash offered by the bidding firm per target

share outstanding. Thus, the data are consistent with an important implication of the analysis: target stockholders will reject those offers that become dominated by a more profitable investment alternative.

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