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MERGERS AND ACQUISITIONS

Presiding: J. FRED WESTON†

Corporate Acquisitions: A Theory of Special Cases? A Review of Event Studies Applied to Acquisitions

PAUL HALPERN*

MERGERS OCCUR WHEN an acquiring firm and a target firm(s) agree to combine under legal procedures established in the states in which the merger participants are incorporated. A tender offer is an offer to purchase a proportion of the outstanding shares of the target firm at specified terms on or before a specified date. Those shareholders not tendering their shares retain an ownership interest in the firm. The term “acquisition” is used in a generic sense to refer to any takeover.

Economists, especially those specializing in industrial organization, have theories to explain the motivations for horizontal acquisitions and to a lesser extent, vertical acquisitions. However, conglomerate acquisitions appear to present problems to some economists and Governmental organizations.

The literature on mergers is replete with studies which evaluate the impact of acquisitions on the participants. The original studies consider the impact of mergers on the risk of the resulting firm and on its profitability. In investigating these issues the pre and post acquisition behaviour of both bidders and targets is examined, and there is an attempt to isolate and measure the impact of the acquisition from other events that affect the firm. Performance measures are based either on accounting data or on stock price reactions to the acquisition; to identify acquisition specific influences comparisons of the merger sample to a non-merger control group are used. These studies are seriously compromised for the following reasons: accounting data do not provide information on the expected long-run impacts of the acquisition on the participants; there are serious problems in defining a comparable control group; and the comparison group does not provide information on how the specific firms would have performed without the acquisition.¹

This review focuses on those studies which utilize stock market data and measure the performance of merger participants over the acquisition period as

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¹Benston [3], Steiner [42] and Mueller [37] summarize these studies.

the deviation of the shareholders' actual rate of return from its value conditional on a particular process which generates expected returns. This methodology is referred to as either the residual, prediction error, or event study approach. This paper investigates the consistency of the empirical evidence provided by the event studies with the implications of the theories suggested to explain acquisitions.

Fundamental to the use of this methodology is the assumption that capital markets are efficient with respect to publicly available information such as a merger or tender offer announcement. However, the existence of an efficient capital market introduces problems in interpreting the results of residual analyses. A merger or a tender offer provides a bundle of signals all of which generate information that is reflected in the security prices of the acquisition participants. These signals give information on the event itself, the identity of the acquiror, and the method of payment, among others. In addition, the security prices of the firms in the acquisition may reflect acquisition information before it is even announced. Examples would include information leaks, insider trading,² and the signal provided by a successful tender offer concerning the likelihood of a future merger offer. To disentangle the impact on the security prices of all of these signals and thereby evaluate the underlying motivation for the merger is very difficult.

The remainder of the paper is structured as follows: Section II presents the conceptual framework for evaluating acquisitions and summarizes the two general motivations for undertaking acquisitions. Section III identifies some methodological issues which are common to a large number of the residual studies. The influence of these issues on the interpretation of the evidence from residual studies is also discussed. Section IV reviews the empirical results of the residual studies for tender offers and for mergers and relates them to the various theories proposed to explain acquisition motivation.³ In the final section, the conclusions of the analysis are presented.

II. Merger-Takeover Theories

Acquisitions are investment decisions by the acquiring firm. The expected benefits of the acquisition are the incremental cash flows generated by the combination of the previously independent firms or by the achievement of control over the operations of the target firms. The overall cost of this investment decision is equal to the search and negotiating costs plus the actual dollar amount paid (or the equivalent dollar amount of the securities issued) to the shareholders of the

²See [28] for a discussion of the impact of insider trading on pre-announcement security prices.

³Although both mergers and takeovers result in a change in control, there are a number of important differences. First, incumbent management have an influence on the ultimate success of the acquisition offer. In mergers the incumbent target management have, in effect, veto power over the merger offer. However, a tender offer is made directly to shareholders and may often be the only method available to circumvent a hostile incumbent management. Second, tender offers are often contested events in which multiple bids can occur. Merger offers, until recently, are usually the result of protracted negotiations and hence not subject to multiple bids.

target firm. The net present value of the decision represents the expected dollar gain to the shareholders of the acquiring firm. To the extent that investors expect the NPV to be positive there will be an increase in the stock price of the acquiring firm. If the target firm is small relative to the acquiring firm, the impact of a profitable merger on the acquiror's stock price may be difficult to detect.

The dollar gain to the target firm is the difference between the value received for their shares and the value of the shares reflecting the present value of the expected net cash flows under pre-acquisition management and production techniques. The sum of the dollar gains to the firms in the acquisition reflects the expected value of the economic impact. The split of this total gain (and the impact on stock prices) will depend on the value received by shareholders of the target firm. This in turn depends on the state of competition in the acquisitions market.

There are two classes of acquisition theories. The first refers to non-value maximizing behaviour by the management of acquiring firms; acquisitions are attempts to maximize growth in sales or assets or to control a large empire. Acquisitions of this type have no economic gains to be divided among the companies and given the costs of negotiating and the potential problems of coordination of the expanding corporate empire, it is likely that there would be an overall economic loss. Thus any positive gains obtained by the target shareholders as an inducement would be offset by a loss to the acquiring firm's shareholders. Target firms would be expected to have above normal rates of return measured over a period ending either at the first public announcement date of the acquisition or at the effective date of the acquisition. Shareholders of the acquiring firm would be expected to earn below normal rates of return over the measurement period. The growth maximization hypothesis is more likely to occur for acquiring firms that are engaged in conglomerate mergers and have active acquisitions programs.

The second general class of theories refers to value maximization motivations in which the acquisition should meet the same criteria as any other investment decision. Thus there should be a positive expected economic gain from the acquisition and depending on the competitiveness of the acquisitions market, some proportion of the economic gain will accrue to the target firm's shareholders. Regardless of this state of competition, the acquiring firm should at least earn a normal rate of return.

There are a number of acquisition motivations that are consistent with the goal of value maximization. The first class consists of financial motivations. One argument presented is that an acquisition permits a redeployment of excess cash held either by the acquiror or the target.⁴ Another argument is that the diversification benefits provided by an acquisition can reduce the probability of default thereby reducing expected bankruptcy costs and increasing the debt capacity of the new entity. Both of these influences would increase the market value of the

⁴Large cash balances in the target firm may be a signal that the firm should be the object of a takeover. The market price of the shares of this company should reflect the probability of a takeover and the redeployment of cash. Thus the expected economic gain to the acquiror from this source is likely to be small.

equity after the acquisition relative to the sum of the market values prior to the acquisition.

Another set of economic motivations is captured by the term synergy in which the acquisition results in an increase in the expected cash flows over their sum as independent firms. These gains can occur from economies of scale for horizontal mergers, excess capacity in some factor(s) of production (such as managerial or financial control), or economies of scope which generate cost advantages when output is increased by the post-acquisition entity not in one product but in a vector of products. Finally, the achievement of monopoly power through an acquisition is often included within the synergy class because of the expected increase in post-acquisition cash flows.

Another motivation is an attempt by the acquiring firm management to take advantage of an asymmetry in information. This information hypothesis postulates that the acquiror has information concerning the target firm that is not available to other participants in the market and is not reflected in the current share price of the target firm. The information may be that the target shares are undervalued based on publicly available information or there are more efficient operating strategies that could be used by the target's management and if the existing management knew these strategies they could become more efficient and the stock price would increase. The announcement of an acquisition bid should be a signal to the market place and the asymmetry in information should be ameliorated.

The last set of value maximization acquisition motivations is based on the attempt by the acquiror to obtain control of the target. In its most general form the acquiring firm desires control to replace an incompetent management or to force existing management to follow a profit maximizing strategy. Under either scenario it is expected that the shareholders of the target firms would be earning below normal returns in some period preceding the acquisition.

The corporate control hypothesis is developed by Berle and Means [2] where managers who control the firm make decisions which do not maximize the market value of equity to existing shareholders. Jensen and Meckling [27] suggest that the value of the firm reflects a valuation by shareholders to include the value of the perquisites consumed by managers as the agents of the shareholders. This managerial behaviour occurs because the costs of monitoring behaviour and writing and enforcing contracts to avoid principal-agent problems are very high; no one shareholder would bear these costs given that the benefits would accrue to all shareholder unless that shareholder held a substantial proportion of the shares. Under this hypothesis an acquisition is facilitated by the depressed stock price and the acquiring firm is expected to gain through a subsequent capital gain.

Many of the hypotheses reviewed in this section appear to be reasonable explanations of merger and tender offer activity. However a number of these hypotheses have similar implications for the impact of the acquisition on the security prices of the affected firms. Thus it may be very difficult to distinguish among the competitive hypothesis. Perhaps the best that can be expected is to identify whether the value or non-value maximizing behaviour is the dominant explanation.

III. Methodological Issues

In this section methodological similarities and differences among the empirical studies will be noted, and the implications for interpreting the underlying motivations for acquisitions will be presented.

1. Estimation of Residual (prediction errors)

Fama, Fisher, Jensen, and Roll [15] introduced a technique to identify the impact of a specific event on a security's rate of return. Their approach purges market influences from the rates of return on a security during the information event time period leaving an adjusted rate of return which represents the impact of event specific information.

A frequently used methodology to provide this adjustment is the market model in which the rates of return on a security over a particular holding period (measured either daily or monthly) is generated as follows:

$$\tilde{R}_{it} = \alpha_i + \beta_i \tilde{R}_{mt} + \tilde{\epsilon}_{it} \quad (1)$$

where

$\tilde{R}_{it}$ = rate of return on firm i , period t

$\tilde{R}_{mt}$ = rate of return on market index, period t

α_i, β_i = regression coefficients

$\tilde{\epsilon}_{it}$ = stochastic error term which meets the assumptions of the linear regression model.

This model is estimated on a set of data observed relative to the event date with observations surrounding the event date deleted. The abnormal return to security i for period t is

$$AR_{it} = R_{it} - \hat{\alpha}_i - \hat{\beta}_i R_{mt} \quad (2)$$

where $\hat{\alpha}_i$ and $\hat{\beta}_i$ are estimated market model coefficients.⁵

In deriving abnormal returns, researchers separate the pre-merger from the post-merger period so as to obtain estimates of the market model parameters which reflect the return generating process of the period under consideration.⁶ Galai and Masulis [18] demonstrate that a merger may alter the underlying risk of the assets of the acquiring firm and this has an impact on the systematic risk of both the bond and stockholders of this firm.⁷

⁵In a number of studies [22, 31, 45] the market model is expanded to include a factor to represent the industry of the merging firm. The companies included in this industry are based on either 2 or 3 digit SIC codes. In [31] companies included in the industry are excluded from the market index. The abnormal return results are not substantially different using the industry factor.

⁶The estimation of beta has been the subject of a number of studies. Techniques are available to adjust for measurement error [29] and nonsynchronous trading [8, 41]. For example, Yagil uses a Bayesian approach to adjust the betas and other studies, use either the Scholes-Williams or Dimson methodologies. The abnormal returns estimates appear to be insensitive to these adjustments.

⁷At an empirical level, Mandelker [34] notes that the betas for the merging firms change after the merger. Dodd and Ruback [10] fit an expanded market model over the total event period; the expanded model has one dummy variable to identify shifts in the intercept and another for shifts in

As an alternative to the market model some researchers use the CAPM in either the Sharpe-Lintner or the zero-Beta versions. For both of these models there is a return generating function of the following form:

$$\tilde{R}_{it} - \tilde{R}_{0t} = \alpha_i + \beta_i(\tilde{R}_{mt} - \tilde{R}_{0t}) + \tilde{\eta}_{it} \quad t = 1, \dots, T \quad (3)$$

where

R_{0t} = either the risk-free rate, R_{ft} , or the zero-beta return in period t .

α_i = the average level of superior or inferior performance measured over the estimation period.

$\tilde{\eta}_{it}$ = residual return with the appropriate stochastic properties.

In the Sharpe version of the CAPM, the return generating function is

$$\tilde{R}_{it} - R_{ft} = \alpha_i + \beta_i(\tilde{R}_{mt} - R_{ft}) + \tilde{\eta}_{it}.$$

To measure abnormal returns, the market model is used to obtain an estimate of $\hat{\beta}_i$. Abnormal returns over the time periods under consideration are defined as follows: $AR_{it} = (R_{it} - R_{ft}) - \beta_i(R_{mt} - R_{ft})$. Using this procedure the researcher assumes that over the period under consideration the intercept, α_i , is equal to the equilibrium value of zero.

In the zero beta version of the CAPM, estimates of the zero-beta return and the excess return on the market are obtained from the Fama-MacBeth [16] estimation procedure. As in the Sharpe version, this procedure assumes that the returns during the event period were generated from a process in equilibrium; hence the intercept term in equation 3 is assumed equal to zero.⁸

Malatesta [33] investigates the differences in abnormal returns that arise using different models. His results using an unconstrained Sharpe version of the CAPM are compared to those of Asquith who uses a zero-beta version of the CAPM and an intercept equal to zero. The higher abnormal returns observed by Asquith are consistent with Malatesta's measured negative abnormal returns over the same time period given that the estimated intercept in the latter study was positive. Madden [32] goes one step further by assuming a beta equal to unity and an intercept equal to zero. This procedure implies that the market was in equilibrium and the systematic risk for all securities is the same. The post-event abnormal returns using this approach are very different from estimated abnormal returns based on market model parameters derived from pre-merger data.

Using an equilibrium constrained version relies on the assumption that the CAPM (in one of its versions) is the correct process to explain the underlying distribution of returns over the event period. Using an unconstrained approach

the beta due to the takeover. They observe 34 out of 184 cases in their tender offer sample in which there is a significant change in beta pre versus post tender offer.

⁸This latter procedure is used by Mandelker, Ellert, Langetieg and Asquith in their merger studies. Langetieg also introduces an industry factor and a "well-matched non-merging control factor." The latter factor represents a company in the same two digit industry having the highest residual correlation with the merging firm. Other than the obvious problem of trying to determine an industry for a company which produces a number of products, the control factor firm may be a horizontal rival of the merging firm. Eckbo presents evidence on this issue but only with respect to the rivals of the acquired firm.

recognizes the potential for the return generating process to be something other than the CAPM. The choice as to which model should be used to estimate abnormal returns is unresolved since it depends upon which return generating process is the appropriate description of reality.

One final problem arises from the empirical regularity fondly known as the small firm effect in which, based on risk-adjusted performance, small firms outperform the market. Since acquired firms are on average small firms (certainly relative to acquiring firms), some of the observed abnormal performance of target and bidder companies in both mergers and takeovers may be attributable to this factor.⁹

2. Aggregation into Portfolios

Individual securities are aggregated into portfolios based on time periods relative to the event date and not calendar time. The average abnormal return (AR) for a particular time period relative to the zero date is calculated as the sum of the abnormal returns at that point in event time divided by the number of securities in the portfolio, the cumulative average abnormal return (CAR) is measured as the sum of the average abnormal returns over a specific time period measured relative to the event date. Significance tests can be constructed for both the average and the cumulative average abnormal returns. A portfolio approach to deriving significance tests was introduced by Mandelker and modified by Ellert.

3. Time Periods

A number of merger-related regulatory changes were introduced in the high merger activity period of mid to late 1960s. Schipper and Thompson [39] evaluate the impact of these changes on the shareholders of firms that were active in acquisition programs. The approach is a form of event study in which the events (announcement of a regulatory reform) are grouped in calendar time and the influence of an individual event is evaluated based on a shift parameter introduced into the market model which identifies the sub-period over which the announcement of the particular reform occurred during the 1966–1970 period. If the regulatory changes reduce the net benefits from future acquisitions, the market value of the equity of firms with acquisition programs should fall. Of the four regulatory changes, the Williams Amendments¹⁰ and the 1969 Tax Reform Act had a negative impact on security prices of the active acquisition sample of companies. Schipper and Thompson estimate that the impact on the active acquiror group was –6% for the Williams Act announcements and –1.2% for the Tax Reform Act.

Jarrell and Bradley observe that the average tender premium prior to the Williams Act (1965) is about 33%; after 1968, about 53% for federally regulated

⁹The small firm effect has generated a large research output in which abnormal performance has been identified to occur in a specific month of the year. [38] is a recent paper in this continuing research and provides a bibliography of the literature in the area.

¹⁰The Williams Amendments occurred in 1968 with a subsequent extension of its provisions to other stock for stock exchange offers and takeovers of 5% or more of the voting stock.

tender offers. This is consistent with the Williams Act changes which forced disclosure of information and a statutory waiting period. However, these results need not imply that acquirors were worse off; the new requirements could result in the success of only true synergistic mergers or tender offers in which the acquiror could afford to pay a higher premium and still demonstrate benefits for their shareholders.

Given the uniqueness of this time period event, studies which have a large proportion of their observations during this time period should be treated with caution. Also, since takeovers relied more heavily on a rapid resolution of the offer and minimum disclosure compared to mergers, it is likely that the most severe impact of the regulatory changes would be observed in the takeover studies.

4. Abnormal Returns versus Adjusted Dollar Gains

The adjusted dollar gain to a participant in an acquisition is measured as the increase in stock price over a specified time period adjusted for market effects and any dividend payments, multiplied by the number of shares outstanding measured at a point in time before the event. This quantity reflects the dollar impact on the equity holders of a participant in the specific merger. The measurement period usually begins at a point where it is expected that no information concerning the merger is reflected in the stock price and terminates at a point specified by the researcher based on the purpose of the study. The sum of the adjusted dollar gains to the participants in the acquisition is an estimate of the expected economic gain of the acquisition.

The acquiring firm is often much larger than the target firm. If a merger generates expected benefits that are split evenly among the merging companies, the abnormal returns for the acquired company would be much larger than those for the acquiring firm. The use of the dollar gains alleviates this scale problem. Another benefit to the use of the adjusted dollar gain is that the size of the total gain and the split of the gains are amenable to explanation by using merger specific data. In the merger literature, Halpern, Malatesta and Yagil have utilized both abnormal returns and adjusted dollar gains. In the takeover literature only Bradley, Desai and Kim [5] have used the dollar gain approach.

5. The Choice of an Event Date

An important issue in an event study is the choice of the event date. One possibility is the first public announcement date of the merger. If information leaks occur before this date, abnormal returns generated by the merger would be observed before the event date. At the announcement date, the security price of the buyer will adjust to reflect the probability of success of the offer, the profitability of the merger and the time required to conclude the merger. For time periods after the announcement date, there may still be significant abnormal returns, especially if the sample reflects only successful mergers, as uncertainty concerning the ultimate success and profitability of the merger is resolved. Also, the terms of the merger may be revised as new information becomes available.

Alternatively the event date is defined as the actual merger date at which all uncertainty has been resolved; a test of market efficiency would be based on the

behaviour of the post-merger date abnormal returns.¹¹ However, using time periods prior to the actual merger date to measure abnormal returns can generate a sequence of abnormal returns which reflects the resolution of uncertainty concerning the merger and not the underlying economic impact of the merger. In fact, it is difficult to identify whether gains prior to the actual merger date are due to the event or just to persistently good performance prior to the merger.¹²

Ellert, Mandelker, Langetieg and Yagil all use the actual merger month as the event date, and all document a sequence of large positive abnormal returns to acquired firms beginning approximately six to eight months before the event date; these can reflect announcement events. Halpern and Malatesta used monthly data and an event date based on the first public announcement. Although the sample time periods were different both studies report positive abnormal returns for acquired firms in months prior to the announcement date.¹³

Comparisons of studies which have different event dates are very difficult. If the purpose of the study is to explain the motivation of mergers, the appropriate event date is the first public announcement. Using the merger date provides some information but it can be swamped by non-merger related influences. The take-over literature appears to have resolved this problem since all the studies reviewed use the first public announcement as the event date.

6. Other Issues

i) Form of Payment

Merger and tender offer studies usually include in their samples events in which all types of payments have occurred. Some studies isolate one form of payment and the analysis at least holds this influence constant. Examples are the cash takeovers studies by Bradley and stock for stock merger studied by Halpern.

A study by Yagil identifies the method of payment in a sample of pure conglomerate mergers. Over the sample period 1948–1976, 50% of the mergers were stock for stock exchanges, 29% were for cash and 21% a combination of various types of securities including convertibles, warrants, and straight preferred shares. Using the event date defined as the merger date, the CAR for –8 months to 0 is 5.3% for the acquiror and 18.7% for the selling firm when the acquisition was financed with securities. For cash mergers the CAR over the same period was 7.9% for buyers and 31.9% for sellers.

Similarly Wansley, Lane and Yang [44] observed that the CAR for acquired

¹¹Even at this date there is some uncertainty concerning the probability of anti-trust action. This is especially true for large companies in horizontal mergers.

¹²Dodd compares the CAR's for 250 trading days before each of the two event dates considered. His results are consistent with the shareholders of target firms earning large abnormal returns due to the merger proposal and not to pre-merger superior performance.

¹³Malatesta also measures the event date as the month of the first public announcement implying board or management approval; this date is after the first public announcement date. Here significant positive abnormal returns are observed in the four months preceding the event date. The longer string of positive abnormal returns for the second announcement date are consistent with the pre-announcement abnormal returns reflecting both the first merger announcement and the resolution of uncertainty.

firms in cash mergers was 38.65% over the period -40 to 0 (days); for mergers paid for with securities the CAR was 25.39%. This difference was found to be significant. Unfortunately, the authors did not investigate the impact on the acquiring firms.

Of course, the method of payment in a merger may be related to factors such as the size of the target company and the rate of return on the market portfolio, among others. Therefore the results that are obtained for different financing methods may reflect more basic variables and hence are spurious.

ii) Type of Merger of Tender Offer

Mergers or tender offers have been categorized on a number of dimensions. One important one is whether the acquisition is vertical, horizontal or conglomerate. Whereas any of these mergers can have as its basic motivation the attempt to replace an inept management or to monitor the activities of the existing management, there are other possible explanations. For example, monopoly power or economies of scale are more likely to occur in horizontal mergers whereas financial motivations may predominate in the conglomerate merger. Studies which have attempted to identify these types of mergers and the impact on abnormal returns are severely handicapped by the arbitrary nature of the merger classification schemes.

IV. Empirical Results

Do the empirical results from the residual studies shed any light on the motivations for corporate acquisitions? The first issue addressed is the consistency of the empirical evidence with the general motivations—value or non-value maximization. The discussion then considers the specific hypothesis presented to explain acquisitions.

i) Value versus Non-Value Maximizing Strategies

The distinguishing characteristic of these two general hypotheses is the abnormal return behaviour of the acquiring firm's common equity measured up to and including the first public announcement of the acquisition. Since target firms shareholders must be given an enticement to accept the acquisition, they will earn abnormal returns regardless of the motivation for the acquisition. The one consistent finding for all merger and takeover residual studies is the presence of large and significant positive abnormal returns and CAR's for the target firm's shareholders regardless of the definition of the event date. These positive abnormal returns appear to be most concentrated in periods just prior to the event date.

First, we consider indirect evidence on this issue. Schipper and Thompson [40] observe that announcements that companies are undertaking acquisition programs are accompanied by above normal rates of return even though the acquisition program entails costs of setting up an acquisitions department. In a subsequent study, Schipper and Thompson [39] identify a negative abnormal return to equity holders of active acquirors upon the announcements of certain

acquisition related regulatory changes which delay the completion of acquisitions and reduce their potential profitability. The behaviour of the residuals in both of these studies is consistent with value maximization motivations for acquisitions.

We next consider the direct empirical evidence from acquisition event studies. In the merger literature, using monthly returns and the first public announcement as the event date, only the Malatesta study finds negative CAR's over long periods of time measured before the event date.¹⁴ Using daily data, Dodd and Eckbo both find positive abnormal returns prior to the first public announcement of the merger.¹⁵ In the former study both cancelled and completed mergers had positive CAR's over the 40 day period prior to the event date.

Many studies define the event date as the effective merger date. Less weight should be given to these results in evaluating merger motivations since the abnormal returns measured prior to this event date reflect the impact of both the announcement of the merger and the resolution of uncertainty. Mandelker and Ellert using various time periods prior to this event date observe positive CAR's. Langetieg, including an industry index, finds positive CAR from -24 to -7 (months); from -7 to -1 there is a negative CAR. Finally Malatesta observes negative CAR's over the periods -24 to 0 and -7 to 0. With daily data [Dodd [9]], acquiring firms obtain a sequence of negative abnormal returns ending in the event day.

Therefore considering the results of merger studies, the evidence appears to be broadly consistent with value maximization strategies. However, the results for acquiring firms must be interpreted carefully. First, in many of the mergers the acquiring firm already had some share ownership in the target firm. Any gains from the merger may have already been reflected in the acquiror's stock price when the prior share ownership was obtained; hence non-positive gains in the current merger could still be consistent with value maximizing merger theories.¹⁶ Second, if the target firm is very small relative to the bidder, the impact on the abnormal performance of the latter of a profitable merger may be swamped by random noise over the measurement period.

As in a merger, the bidder in a tender offer may have a prior interest in the shares of the target firm; this prior interest may have an impact on the abnormal returns to both the bidder and the target shareholders. In addition, the prior interest may not only signal the increased probability of a future tender offer bid but it may have an influence on the probability that the offer will be successful

¹⁴Studies finding positive CAR's for acquiring firms are as follows: Halpern, Malatesta (over a seven month period) and Asquith. The last study finds the positive CAR of 9% (from months -24 to -4) is significant.

¹⁵Note that the Eckbo sample was limited to horizontal or vertical mergers; the Dodd sample also includes a large number of conglomerate mergers.

¹⁶Halpern observes that in 23 out of 77 mergers, the acquiring firm owned some of the shares of the target firm. This ownership ranged from .2 to 87 per cent. He also observes that the stock for stock exchange ratio was less when a prior interest was present. Madden investigates the impact of partial acquisition in which a company purchases on the open market in excess of 5 per cent of the shares of a class of common stock; this purchase is often a prelude to a more formal merger or tender offer bid. Significant abnormal returns are observed in the announcement month and one month prior to this date for target firms.

in achieving the control position and on the probability of resistance by the incumbent target firm management.

In studies by Kummer and Hoffmeister (KH) and Dodd and Ruback (DR) it is observed that for bidding firms in successful tender offers there are positive and significant abnormal returns around the tender offer date. Using daily data both Bradley and Bradley, Desai, and Kim observe positive and significant abnormal performance surrounding the event date. These results for bidders imply that the takeovers are value maximizing decisions in which the market expects benefits to the bidding firm after the tender offer is successfully concluded. This is particularly surprising when as Bradley had demonstrated, the stock price of the target firm, after the tender offer is executed, is less than the tender offer price.

From the discussion of the abnormal returns to bidders it appears that tender offers are wealth maximizing events. For mergers, the results are more ambiguous but leaning toward the same conclusion. We now consider the sources of these benefits.

ii) Monopoly Power

Eckbo [12] and Stillman [43] test for the existence of monopoly power by observing the abnormal return performance of horizontal rivals of the target firms involved in a merger. If monopolization is the motivation, the merger either makes it easier to detect cheating or the dominant firm can increase prices after the merger; either result should generate positive abnormal returns for horizontal rivals. If mergers have cost reducing benefits or economies of scale, they will have a negative impact on the returns of horizontal rivals only if the horizontal rivals can not achieve the same benefits by merger.

In both papers a portfolio of horizontal rivals is constructed and the impact of the merger on their abnormal performance is identified.¹⁷ Eckbo finds that in horizontal mergers the horizontal rivals of the target company had positive and significant CAR's for the period -20 to +10 days relative to the first public announcement date. For horizontal mergers that were challenged by FTC or the Justice Department, the horizontal rivals displayed positive and significant residual subsequent to the merger announcement. The Stillman study finds that there is no evidence consistent with the market power motivation for mergers in a sample of 16 horizontal mergers challenged by either the FTC or Department of Justice. Eckbo, applying his methodology to define rival firms to the Stillman sample, finds results consistent with his larger sample.

Unfortunately the tests provided by Eckbo and Stillman cannot reject the economies of scale/cost reduction motivations or the Jarrell and Bradley [26] arguments that mergers signal the application of innovative activity which could be technology based and of value to the horizontal rivals of the merging companies. Another explanation of the Eckbo results is that his methodology is very

¹⁷In the Eckbo paper abnormal performance of all rivals in event time is investigated. For Stillman each rival is considered separately by using a market model which includes a dummy variable to identify stock price observations relative to the announcement date of the merger. The criteria used to identify the horizontal rivals were different in these studies.

effective in identifying likely candidates to be taken over in any subsequent merger. Given that a merger already occurred in the "industry," the stock price of the remaining firms should reflect the increased probability of being involved in a merger. Finally, there is no reason provided why mergers would be expected to generate benefits to rivals as identified by the abnormal returns. Providing more firm specific information for the firms in the merger (e.g., concentration ratios) would permit the construction of a more homogeneous sample and may assist in identifying the merger motivation.

iii) Information Effects

In this argument, the offer to a target in an acquisition is a signal to the market of the true value of the target firm's shares or of information concerning more efficient operating strategies available to incumbent management. While this hypothesis is consistent with a premium paid to target shareholders, it does not explain the positive gain to acquiring firms and provides no incentive for a bidder to undertake a costly acquisition.

As an example, consider a tender offer bid on the basis of this type of information alone. If the bid provides information to the market about the true underlying potential of the firm, the shareholders will form unbiased expectations concerning the new equilibrium stock prices. As Bradley [4] and Grossman and Hart [20] point out, the tender price must exceed the long run equilibrium price which reflects the new information or no target firm shareholder would tender. The acquiring firm pays a tender premium and reaps a capital loss if the tender is successful. Since there can be no impact on the operations of the acquiring company, the bidding firm will incur a loss in value equal to the expected capital loss when the tender offer is successful. Meanwhile, the shareholders of the target firm will earn above normal rates of return.¹⁸

Bradley, Desai and Kim (BDK) argue that if this information hypothesis is correct, and capital markets are efficient, the target shareholders in unsuccessful tender offers should not earn negative abnormal returns subsequent to a rejected tender offer since the reason for the tender offer has been removed. In their paper they observe on monthly data that unsuccessful target shareholders do not suffer a decrease in wealth from one month before the announcement month to one year after. This is consistent with the DR observation that the CAR for unsuccessful targets falls only 3.25% during the 12 months after the offer after rising 18.96% in the month of the offer.

DR attribute this observation to the managerial improvements hypothesis and not to synergy or monopolistic gains since the latter two can be obtained only if the firms are combined. They recognize however that their empirical results are consistent with a number of hypotheses. If the unsuccessful tender offer is expected to be followed by another offer or by a merger proposal, then the synergy

¹⁸If informationally imperfect markets are invoked, the pure information motivation for acquisitions has some force. In these markets the acquisition bid does not provide any information to the market about the long-run equilibrium impact of the acquisition (or the market consistently underestimates this impact). After the success of the acquisition, information is released by the acquirer about the true value of the new firm.

or monopoly gains impounded in the target stock price at the original announcement date will not be eliminated if the original offer is unsuccessful. This result is in fact what BDK observe; target shareholders realize a significant positive return subsequent to an unsuccessful tender offer. This increase is due primarily to the expectation of a future tender offer. If such an offer is not forthcoming (within five years of an unsuccessful offer) the share prices fall back to their pre-offer level. If the offer does materialize and there is a subsequent bid the target shares obtain an additional significant abnormal return. Therefore, the BDK evidence is inconsistent with the pure information hypothesis.

iv) Corporate Control: Managerial Incompetence/Agency

If target managerial incompetence or the existence of agency costs are the sole motivations for a merger then the split of the total dollar gain achieved by the merger will depend on the price paid for the acquisition. If the market for control is competitive and there are no unique factors of production in the acquiring firm, the target firms will appropriate all of the gains and the acquiring firms will earn a normal rate of return.

However, just as in the pure information motivation for acquisition, it is difficult to explain positive abnormal returns to acquiring firm's shareholders if the capital market is informationally efficient. For example, an acquisition facilitated by a depressed stock price due to mismanagement by incumbents is only a reasonable explanation if control of the target firm can be obtained without the market price of the target firm's shares reflecting the information in the takeover. However, under current takeover legislation, the waiting period removes the element of surprise, facilitates competitive offers, and the bid itself may provide a signal to the market concerning the inefficiency of target management. Therefore, it is very unlikely that the bidder will gain from an acquisition whose sole motivation is to replace or monitor the behaviour of existing management.

In the Jensen-Meckling scenario, even if an acquisition with a resulting concentration of ownership in the target firm's equity can solve the free-rider problem of monitoring target management behaviour, there will be no gain to the bidder if the price of the shares of the target firm prior to the takeover reflects the expected cash flows under a new monitoring scenario. The identification of agency problems and corporate mismanagement is a costly activity. These costs are more likely to be lower for potential bidders in the same industry as the target. Thus the corporate control rationale would more likely hold for acquisition in which the bidder and target are in the same industry.

Considering mergers first, if corporate control is the rationale for the merger, then it is likely that the target firm would have earned a significantly negative abnormal return some time before the event date. Whether or not this abnormal return is picked up in the residual analysis depends on whether the pre-event date time period includes these observations. Regardless of the definition of the event date, all studies using monthly data observe negative abnormal returns for target firms over periods well before the event date.¹⁹ These observations are

¹⁹Ellert, Asquith, and Malatesta observe large negative abnormal returns in the pre-merger period. Langetieg observes a significant negative CAR of -12.6% which is interpreted to be insignificant

certainly consistent with the hypothesis that mergers occur to discipline target firm's management or to impose new operating strategies.

Dodd presents additional information on this hypothesis by evaluating abnormal returns for terminated merger proposals. Since managers/boards of directors of the target firm have veto power over whether the proposal is put to the shareholders, they can thwart any merger which is considered to be hostile to their interests. However, the use of the veto can be interpreted as an attempt to maximize the size of the premium obtained by target shareholders and hence need not be the result of a non-value maximizing strategy. If either of these hypotheses is correct, a management veto of a merger proposal should be accompanied by negative abnormal returns to the target but the price of the equity will not fall back to its pre-proposal level since there is a high probability of a new offer, be it another merger or a tender offer, or that management may alter their behaviour, at least in the short-run. Dodd's empirical evidence is consistent with these expectations; the abnormal returns for vetoed mergers at days -1 and 0 are negative and significant. A second sample of mergers consists of all other terminations. The actual reason for termination is not always specified and can include termination by bidder's management. For this sample, returns are not as large before the termination as compared to the vetoed mergers; there is a sequence of negative abnormal returns beginning five days before the termination; subsequent to the termination, the CAR over 40 days is 2.51%. Over the whole period -40 to $+40$, the CAR is -1.7% . By the time of the termination announcement almost all of the positive abnormal performance is removed. An additional negative return is observed on the announcement date.

The reason for the termination appears to provide some information to the market. A management veto is consistent with a higher share value for target firms whereas a merger termination results in no permanent revaluation in share prices. This latter observation is inconsistent with the hypothesis that the merger provides information concerning new technology since the information of a merger proposal should keep the share values high regardless of the reason for the failure of the merger proposal.

For the tender offers the same argument made for mergers concerning market efficiency and positive abnormal returns to the shareholders of bidding firms is relevant. Considering first abnormal returns prior to the event date, both KH and DR observe negative returns over long time periods prior to the tender offer; they were not statistically significant. KH also investigate tender offers which were resisted by the incumbent target management and compared these results to unresisted offers. One implication of the managerial improvement hypothesis is that management may resist a takeover if the previous performance of the firm was very poor since after a successful takeover the incumbent management might be fired.²⁰ They observe only six tender offers which were resisted but still

after removing the CAR for the non-merger control firms. Finally, Mandelker obtains either positive or negative CAR's over the period -20 to -10 depending upon whether a pre- or post-merger beta is used in the adjustment process.

²⁰Of course a side payment may have been sufficient to quell any managerial opposition in the unresisted tender offers even though the manager would be fired.

successful that had significant negative residuals over the period -24 (months) to -4 . In the same study, the highest abnormal return is found in the tender offer month for resisted but successful tender offers; the lowest abnormal return is obtained in non-resisted successful tender offers.²¹

The final argument under the managerial improvement rubric is that the bidder will obtain a capital gain some time after the success of the tender offer when the new operating strategies are implemented in the target firm. For this theory to hold, the increased profitability of the target would have to be a surprise to the current shareholders of both the bidder and the target. If the management of the bidding firm had this information why did they not purchase all of the shares? The empirical evidence is inconsistent with this theory of "surprise." Bradley finds no evidence of an increase in stock prices after the execution of the tender offer. Using monthly data over longer time periods, KH observed a monthly CAR of .006% over the period $+1$ to $+20$ for the bidder. DR observe negative and insignificant CAR's for bidders for periods up to 60 months following the tender offer. For target firms, the CAR's over the same periods were not significantly different from zero.

v. Raiding

If capital markets reflect takeover information in an unbiased manner, where is the incentive to engage in a takeover bid to displace existing target management? Grossman and Hart [20, 21] provide an explanation for this paradox. They argue that shareholders of the target firm expect that as an enticement, the bidding firm will engage in some corporate raiding or dilution of the position of the minority shareholders. Dilution can occur through the sale of managerial services to the target at inflated prices or purchases of products at very low prices. This strategy will provide a gain to the acquiror's shareholders since they obtain the full value of the assets raided but only pay a part of the cost since they own less than one hundred per cent of the shares of the target.²² An alternative strategy is a merger of the target firm into the acquiror's firm after the successful takeover bid at a price which is unfavourable to minority shareholders of the target. Although there are a substantial number of mergers following successful takeover bids, the extent to which value is being diverted from minority shareholders depends upon the legislated rights of minority shareholders. Dodd and Ruback [9] observe that in "clean-up" tender offers in which the bidding firm has more than 50 per cent of the outstanding shares of the common shareholders, the target firm shareholders still earn positive significant rates of return during the announcement month. The bidding firms do not have have significant positive abnormal returns. Of course, the dilutive clean-up

²¹A further complication is added if there are bidders with a prior interest in the shares of the target before the tender offer. This would explain the smaller abnormal returns around the tender offer date.

²²An analogous argument can be made for a bidding firm which has specialized resources that will enhance only the cash flows of the target firm. The logical response would be to undertake a merger and not a tender offer since in the former all of the gains of the resource can be appropriated. If the tender offer route is followed some form of asset diversion, after the offer, is required to provide a gain to the bidder.

merger may have been anticipated by the market after the successful takeover and the impact on the bidding firm's equity has already occurred.

Bradley rejects the raiding hypothesis; since he assumes that the raider would divert all of the assets of the target firm, this would imply that after a successful tender offer the target shares will be worthless and the shareholders, anticipating this would tender all of their shares. Observing neither, he rejects this hypothesis. However, the Grossman and Hart position is that *some* dilution may be required as an inducement. Thus even if the required target shares display an increase in value over their pre-tender offer level, this is still consistent with a raiding strategy. The interesting question, if Grossman and Hart are correct, is what is the mechanism that prevents the bidder from undertaking the profitable strategy of diverting more than was expected by the minority shareholders? Perhaps the constraints on this type of behaviour are found in the legal rights of minority shareholders. In addition, the bidder may desire a reputation that it deals fairly with its minority shareholders if it has any intentions of continuing an acquisition program.

vi. Other Value Maximizing Strategies

Positive abnormal returns to the bidding firms in a takeover are consistent with synergy and monopoly power hypotheses. Bradley, Desai and Kim attempt to identify the appropriate value maximization hypotheses by looking at unsuccessful tender offers. They observe, using daily data, that for the period -20 to 160, the CAR is negative but insignificant for unsuccessful bidders for which there was not a subsequent successful takeover of the same target. However, over the same period, the CAR has a significant value of -1.588 for unsuccessful bidders for target firms which were later taken over by another firm. BDK suggest that this loss of control over the target resources places the losing bidder at a competitive disadvantage compared to the successful bidder. The existence of multiple bids implies that the specialized resources were probably found in the target firm and could be put to use by any bidder so as to increase their expected cash flow. Moreover, the winning bidder probably was the most efficient user of the specialized resource since it bid the highest amount.²³ The interpretation provided by BDK is consistent with a synergy/operating efficiency hypothesis and is reasonable only if the bidding firms are competitors. Since there is no information provided on this issue, their conclusions remain conjectural.

In a companion piece of research the same authors investigate both the abnormal returns and the dollar gains obtained by successful targets and bidders in single and multiple bidder events. Their hypothesis is that tender offers in the latter category reflect specialized resources in the target and the gains from the successful tender offer accrue primarily to the target firm. If there is only one bidder, the observations of a more even split of the gains or of the bidders receiving a significant positive abnormal returns are consistent with the bidder having the specialized resources. These empirical results using both abnormal

²³BDK suggest that the bidder also has a specialized resource which when used in conjunction with the target firm, provides benefits sufficiently large to justify the highest tender offer bid.

returns and adjusted dollar gains are consistent with the basic hypothesis.²⁴ Unfortunately, even if these observations are correct, the results are consistent not only with the synergy or monopoly hypotheses but also with corporate raiding combined with managerial improvements.

V. Conclusions

Residual analysis studies as applied to acquisitions have increased in statistical sophistication since the initial papers in 1973. The passage of time has increased not only the number of events that could be included in a sample but also the complexity of these events. For example, the "white knight" syndrome permits the investigation of richer hypotheses. However, how much do we really know about the motivation for acquisitions?

The results of both the merger and tender offer studies are generally consistent with value maximizing behaviour on the part of bidding firms. In the tender offer literature, bidders obtain significant positive abnormal returns due to the event. The results for bidders in the merger literature are mixed; this may reflect the importance of prior signals concerning the merger event. However, indirect evidence on bidders in mergers is consistent with value maximization. The large positive abnormal returns earned by targets do not shed any light on the underlying motivation for acquisitions.

Unfortunately the studies are unable to identify which of the many value maximization theories is applicable. Some can be dismissed on theoretical grounds; these include in the tender offer area, the pure information argument and the use of a control position to improve the operation of the target firm. The latter, although suggested by some as a major motivation for tender offers, will hold if dilution of the position of the minority shareholders is acceptable to these shareholders and permitted within the legal rules or if operating economies are expected to accrue to bidders. Included in the control argument is the removal of agency costs. An unanswered question is whether these costs by themselves, are large enough to generate the abnormal returns (and abnormal gains) observed for target firms.

Both the synergy and monopoly power arguments remain viable theories to explain acquisitions; this conclusion for the latter in the merger area is not clear. None of the residual studies which conclude that these are the motivations behind the acquisition have identified the source of the improvements.

Perhaps we expect too much from the residual studies. These studies provide an indication of the aggregate impact on the overall sample and reflect a combination of the motivation in each specific acquisition. Each acquisition need not have the same value maximization motivation and the aggregate impact will document only that acquisitions are, on average, value maximizing events.

²⁴The authors observe that in 44 out of 162 offers in the sample the estimate of the total dollar gain is negative implying diseconomies of scale. The authors dismiss this as a problem of measurement error and this certainly is one explanation. However, offers are not costless events and taking this factor into consideration may generate negative total dollar gains. In addition, by removing negative total gains from the sample, the dollar gains to targets and bidders, as well as to total, are very skewed to the right.

Therefore it may be impossible to conclude that a particular value maximizing theory is applicable based on a sample of acquisitions.

In addition, the frequency of mergers with particular characteristics within the sample period used in a study can have a serious impact on the observed sample results. Two examples are illustrative of the potential problem. First, Halpern, Yagil, and Wansley *et. al.* all observe that cash transactions were associated with higher abnormal returns than transactions based on an exchange of securities. Second, Ellert observes different abnormal returns for active acquirors and for bidders which had a single large merger; although both groups displayed positive abnormal returns prior to the merger date, they were significant only for the active acquirors.

In order to obtain any evidence on the motivation for mergers it is necessary that the researcher be meticulous in constructing the sample so that these other influences can be controlled. An aggregate analysis of all acquisitions through a residual event study cannot be used. One possible solution is to define homogeneous groups of events, for which all extraneous influences have been removed, and do a residual analysis on these subsamples.

An alternative and preferable technique is to blend the residual technique for acquisitions with the micro-economic foundations found in the industrial organization literature. This approach would identify merger specific information, such as the method of payment, concentration ratio, prior interest, whether the acquisition is vertical, horizontal or conglomerate. These variables would then be used to explain the abnormal performance of the firms in the acquisitions.

REFERENCES

1. P. Asquith, "Merger Bids, Uncertainty, and Stockholder Returns." forthcoming *Journal of Financial Economics*.
2. A. Berle and G. Means, *The Modern Corporation and Private Property*. New York: Macmillan Co., 1932.
3. G. J. Benston, *Conglomerate Mergers*, Washington: American Enterprise Institute, 1980.
4. M. Bradley, "Interfirm Tender Offers and the Market for Corporate Control." *Journal of Business*, 4 (October 1980), 345-76.
5. M. Bradley, A. Desai, and E. Han Kim, "The Rationale Behind Interfirm Tender Offers: Information or Synergy?," Working Paper, University of Michigan, (September, 1982).
6. ———, "Specialized Resources and Competition in the Market for Corporate Control," Working Paper, University of Michigan, (September, 1982).
7. S. J. Brown and J. B. Warner, "Measuring Security Price Performance." *Journal of Financial Economics* 8 (September 1980), 205-58.
8. E. Dimson, "Risk Measurement When Shares are Subject to Infrequent Trading," *Journal of Financial Economics*, 7 (June 1979), 197-226.
9. P. Dodd, "Merger Proposals, Management Discretion and Stockholder Wealth," *Journal of Financial Economics*, 8 (June 1980), 105-37.
10. ——— and R. Ruback, "Tender Offers and Stockholder Returns: An Empirical Analysis," *Journal of Financial Economics*, 5 (December 1977) 351-73.
11. F. H. Easterbrook and D. R. Fischel, "The Proper Role of a Target's Management in Responding to a Tender Offer," *Harvard Law Review*, 94 (April, 1981), 1161-1204.
12. B. E. Eckbo, "Assessing the Anti Competitive Significance of Large Mergers," Working Paper, University of Rochester, Graduate School of Management, 1981.
13. J. C. Ellert, "Mergers, Anti-trust Law Enforcement and Stockholders Returns," *Journal of Finance*, 31 (May 1976), 715-732.

14. E. F. Fama, *Foundations of Finance*, Basic Books, Inc., New York, 1976.
15. E. F. Fama, L. Fisher, M. C. Jensen and Richard Roll, "The Adjustment of Stock Prices to New Information," *International Economic Review*, 1 (February, 1969), 1-21.
16. ——— and James D. MacBeth, "Risk Return and Equilibrium: Empirical Tests," *Journal of Political Economy*, 81 (May-June, 1973) 607-36.
17. M. Frith, "Synergism in Mergers: Some British Results," *Journal of Finance*, 33 (May 1978), 670-2.
18. D. Galai and R. Masulis, "The Option Pricing Model and the Risk Factor of Stock," *Journal of Financial Economics*, 4 (January-March, 1976), 53-82.
19. M. J. Gordon and J. Yagil, "Financial Gain from Conglomerate Mergers," *Research in Finance*, 3 (1981), 103-42.
20. S. Grossman and O. Hart, "Takeover Bids, the Free Rider Problem and the Theory of the Corporation," *Bell Journal of Economics*, (Spring, 1980).
21. ———, "Disclosure Laws and Takeover Bids," *Journal of Finance*, 35 (May, 1980), 323-34.
22. P. J. Halpern, "Empirical Estimates of the Amount and Distribution of Gains to Companies in Mergers," *Journal of Business*, 46 (October, 1973), 554-73.
23. ———, "Empirical Estimates of the Expected Economic Gains From Mergers and an Analyses of Their Division Between Companies in the Merger," Ph.D. Dissertation, University of Chicago, December 1971.
24. R. A. Haugen and T. C. Langetieg, "An Empirical Test for Synergism in Mergers," *Journal of Finance* 30 (September 1975), 1003-14.
25. R. Higgins and L. Schall, "Corporate Bankruptcy and Conglomerate Mergers," *Journal of Finance*, 30 (March, 1975), 93-113.
26. G. A. Jarrell and M. Bradley, "The Economic Effects of Federal and State Regulations of Cash Tender Offers," *Journal of Law and Economics*, 23 (October 1980), 345-76.
27. M. Jensen and W. Meckling, "Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure," *Journal of Financial Economics*, 4 (October 1976) 305-60.
28. A. J. Keown and John M. Pinkerton, "Merger Announcements and Insider Trading Activity: An Empirical Investigation," *Journal of Finance*, 36 (September 1981) 855-69.
29. R. Klemkosky and J. Martin, "The Adjustment of Beta Forecasts," *Journal of Finance*, 30 (September, 1975) 1123-5.
30. D. R. Kummer and J. Ronald Hoffmeister, "Valuation Consequences of Cash Tender Offers," *Journal of Finance*, 33 (May 1978), 505-16.
31. T. C. Langetieg, "An application of a Three-Factor Performance Index to Measure Stockholder Gains From Merger," *Journal of Financial Economics* 6 (December, 1978), 365-83.
32. G. P. Madden, "Potential Corporate Takeovers and Market Efficiency: A Note," *Journal of Finance*, 36 (December, 1981), 1191-7.
33. D. H. Malatesta, "The Wealth Effect of Merger Activity and the Objective Functions of Merging Firms," Graduate School of Business Administration, University of Washington (March 1982).
34. G. Mandelker, "Risk and Return: The Case of Merging Firms," *Journal of Financial Economics* 1 (December, 1974) 303-35.
35. A. G. Manne, "Mergers and the Market for Corporate Control," *Journal of Political Economy*, 1 (1965) 110-20.
36. R. W. Masulis, "The Effects of Capital Structure Change on Security Prices," *Journal of Financial Economics*, (June, 1980) 139-78.
37. D. C. Mueller, "The Effects of Conglomerate Mergers," *Journal of Banking and Finance*, 1 (December, 1977) 315-47.
38. M. Reinganum, "The Anomalous Stock Market Behaviour of Small Firms in January," University of Southern California, Working Paper, forthcoming in *Journal of Financial Economics*.
39. K. Schipper and R. Thompson, "The Impact of Merger-Related Regulation on the Shareholders of Acquiring Firms," Working Paper, Carnegie-Mellon University, (July 1982).
40. ———, "Evidence on the Capitalized Value of Merger Activity for Acquiring Firms," forthcoming, *Journal of Financial Economics*.
41. M. Scholes and J. Williams, "Estimating Beta From Nonsynchronous Data," *Journal of Financial Economics*, 5 (December 1977), 309-27.

42. P. O. Steiner, *Mergers*. Ann Arbor: University of Michigan Press, 1975.
43. R. Stillman, "Examining Antitrust Policy Towards Horizontal Mergers," Lexecon Inc., Chicago 60603, March 1982.
44. J. W. Wansley, W. R. Lane, H. C. Yang, "Abnormal Return to Acquired Firms by Type of Acquisition and Method of Payment," paper presented at F.M.A. meetings in San Francisco 1982.
45. J. Yagil, "Financial Effects of Pure Conglomerate Merger," Ph.D. Thesis, University of Toronto, 1980.