

**THE PRE-ACQUISITION PERFORMANCE
OF TARGET FIRMS: A RE-EXAMINATION
OF THE INEFFICIENT
MANAGEMENT HYPOTHESIS**

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Abstract

It is often stated that bidders acquire poorly-run targets in order to improve firm performance. This inefficient management hypothesis is frequently tested by examining target stock returns in the years prior to an acquisition. While the hypothesis is commonly assumed in the literature to be true, previous papers generally do not show significantly negative returns for targets in the years prior to acquisition. Our paper re-examines this issue thoroughly with a number of methodological improvements and a large sample of acquisitions over the period from 1930 to 1987. We find that the abnormal returns are insignificant over the four years prior to the bid. But over the ten-year period before the bid, target firms experience a statistically significant abnormal return of -7% to -18%. Our results suggest that takeovers discipline managers, but with a delay that may protect them through much of their normal tenures. However, this delay is shorter during periods of lenient anti-trust enforcement, during merger waves, and for unregulated firms.

The Pre-Acquisition Performance of Target Firms: A Re-examination of the Inefficient Management Hypothesis

Mergers and acquisitions are one of the most researched areas in finance and economics. A large part of this literature measures the gains to stockholders from mergers and tender offers by estimating abnormal returns around announcement dates. For the most part, the research suggests that changes in corporate control generate value increases for stockholders. For example, in their review article, Jensen and Ruback (1983, p. 22) state, "Since targets gain and bidders do not appear to lose, the evidence suggests that takeovers create value."

In addition, a number of studies have used accounting data to estimate gains from takeovers. Ravenscraft and Scherer (1987) and Herman and Lowenstein (1988) argue that takeovers generate no operating improvements. However, more recent papers by Healey, Palepu and Ruback (HPR) (1992) and Jarrell (1995) find fault with these earlier studies. Using different methodologies, both HPR and Jarrell conclude that mergers improve asset productivity.

The literature has been searching for the sources of these takeover gains. For example, Hayn (1989) documents a tax gain from mergers, while Auerbach and Reishus (1988) and Gilson, Scholes and Wolfson (1987) are skeptical of the tax motive. Bradley, Desai and Kim (1983) argue that tender offers are motivated by synergies, rather than by superior information of the target's true value. Eckbo (1983) and Stillman (1983) examine stock prices of the target's competitors and find no evidence that merger gains are due to an increase in market power. On the other hand, Kim and Singal (1993) and Chevalier (1995) find that product prices rise following a corporate control transaction in airlines and supermarkets, consistent with an increase in market power. Denis and McConnell (1986) present evidence that the gain to stockholders

from mergers does not come at the bondholders' expense. Similarly, the evidence in Brown and Medoff (1988) suggests that mergers do not redistribute wealth from workers to stockholders. Hall (1988) finds that mergers have little effect on research and development spending, a result at odds with the managerial myopia theory (see Stein (1988)) that merger targets underspend on R&D.

One generally-accepted motive for a merger is the improvement of the target's management. For example, Brealey and Myers (1991, p. 823) state, "There are always firms with unexploited opportunities to cut costs and increase sales and earnings. Such firms are natural candidates for acquisition by other firms with better management. In some cases 'better management' may simply mean the determination to force painful cuts or realignment of the company's operations." While all firms, even those with good management, can theoretically be improved by better management, the potential for improvement is clearly greater in firms that are performing poorly. Therefore, as Brealey and Myers say, "If this motive is important, one would expect that firms that perform *poorly* tend to be targets for acquisition." This notion, which is generally referred to as the inefficient management hypothesis, has been frequently tested in the literature.

The empirical research in the area primarily examines stock returns in the years prior to a merger or a tender offer. Previous papers generally find that the abnormal returns for targets are insignificantly negative in the years prior to an acquisition, a point that we discuss in the next section's literature review. Thus, empirical support for the inefficient management hypothesis is not strong. However, since an investigation of long-run pre-acquisition returns to targets is often a sideline to these papers and because many of these papers are not recent, the

methodologies are not state-of-the-art. Therefore, this lack of support for the hypothesis merits a re-examination. This is particularly so since, despite little empirical support, the academic profession has generally assumed the inefficient management hypothesis to be true. In addition, this issue is important because of its implications for the public policy on takeovers.

This paper re-examines this issue in detail. Relative to the existing literature, our contributions include (1) a large sample of corporate takeovers from 1930 to 1987, (2) an adjustment for the firm size effect, (3) an adjustment for the bid-ask bias (Blume and Stambaugh (1983) and Conrad and Kaul (1993)), (4) an adjustment for the empirical market-risk premium, (5) an adjustment for an industry effect and (6) a longer pre-acquisition time period than that generally used in prior studies.

We find that the abnormal returns are statistically insignificant over the four years prior to the acquisition announcement, a result consistent with the previous literature. However, abnormal returns are significantly negative when a longer time period prior to acquisition is used. Across three different methodologies, the abnormal returns range from -7% to -18% over the ten year pre-bid period and from -4% to -10% over the five year pre-bid period; all are statistically significant. These results, which are robust to a variety of specifications, support the inefficient management hypothesis.

In addition, the previous literature has not focussed on the lag between the inception of underperformance and takeover. In contrast, prior studies have examined the lag between underperformance and executive turnover. For example, Denis and Denis (1995, p. 1030) find that "on average, the ratio of operating income to total assets decreases in the three years prior to a management change" in a sample of operating firms. Khorana (1996, p. 404) finds evidence

of "two years of statistically significant underperformance prior to the managerial replacement month" in a sample of mutual funds.

Our results show a long time period between underperformance and takeover. However, the length of this lag is not uniform across our sample period. Rather, we find long lags during periods of strong anti-trust enforcement and shorter lags during periods of weaker enforcement. These results are consistent with the view that vigorous anti-trust enforcement inhibits the market for corporate control. The lag appears to be shorter for acquisitions occurring during merger waves than for acquisitions made in other periods, suggesting that the presumably lower acquisition costs during merger waves facilitate disciplinary takeovers. Finally, we find a long lag for acquisitions in regulated industries, a result consistent with the hypothesis that regulation impedes acquisitions. However, the small sample size here makes the result suggestive at best.

The structure of the paper is as follows. We review the literature in the next section. The data are described in section 3. Section 4 examines the pre-acquisition performance of target firms. Section 5 analyzes the lag between poor performance and takeover. The final section concludes the paper.

2. Review of the Literature

This section reviews the literature on the inefficient management hypothesis. Section 2.1 discusses the evidence from event studies, section 2.2 reviews other types of evidence, and section 2.3 provides a synthesis and interpretation of the evidence.

2.1. Event study evidence

Academics have discussed the inefficient management hypothesis for many years. For example, Samuelson (1970, p. 505) states “take-overs, like bankruptcy, represent one of Nature’s methods of eliminating deadwood in the struggle for survival. A more open and more efficiently responsive corporate society can result.” Other conceptual treatments of the hypothesis from this time period can be found in Manne (1965), Solow (1967), and Williamson (1964).

The label ‘inefficient management hypothesis’ appears to originate in the influential paper by Mandelker (1973), which examines 252 mergers between New York Stock Exchange (NYSE) acquirers and NYSE targets that were completed during the period from November 1941 to August 1962. He measures stock return performance relative to the empirical security market line estimated by Fama and MacBeth (1973). His Table 2 shows cumulative average residuals of -3% over months (-40, -9) relative to the month of merger completion.¹ This appears to be an economically insignificant number. The t-tests are not reported, so that statistical significance can not be assessed. Thus, his results constitute only weak evidence in favor of the hypothesis.

Ellert (1976) focuses on mergers that faced antitrust challenge, but also examines, in passing, the performance of merging firms in general. His sample for this latter analysis consists of 311 acquisitions of at least \$10 million from 1950 to 1970. The cumulative average abnormal return (calculated using the two-factor market model) of the target firms over months (-100, -8) around merger completion is -11.7%. However, no t-values are reported over this interval, so one can not tell whether these results support the inefficient management hypothesis.

¹Since mergers are typically announced several months before they are completed, and the price run-up begins about two months before the announcement, the residuals over the months immediately preceding the merger are likely to reflect the announcement effect of the merger. Mandelker treats the eight month period before merger completion as related to the announcement.

Smiley (1976) examines 95 tender offers between 1956 and 1970. Using a 3-factor market model (beta, zero-beta asset and industry index), he finds that the target's cumulative average abnormal return is a statistically significant -55.6% over months (-120, -1) relative to the announcement date. These results support the inefficient management hypothesis.

Dodd and Ruback (1977) examine targets in 136 successful tender offers during 1958-76. Their Table 3 shows statistically insignificant abnormal returns (computed using the market model) over months (-60, -13) relative to the month of the tender offer announcement. Abnormal returns are actually positive over months (-12, -3). Thus, their results are not supportive of the inefficient management hypothesis.

Langetieg (1978) examines return performance in the 72 months before merger completion for a sample of 149 mergers between 1929 and 1969 selected from the Center for Research in Security Prices (CRSP) data file. He simultaneously adjusts the stock return performance by (1) relative risk (β), (2) an industry index and (3) a control firm in the acquired firm's 2-digit SIC industry. After this three-factor adjustment, Langetieg finds that the acquired firm's pre-merger performance is not significantly different from zero. He states (p. 379), "On closer examination, we must discount the inefficient management hypothesis since the non-merging control firm also exhibited negative excess returns in the time interval (-72, -19). Furthermore, the 'paired-difference' test shows excess returns insignificantly different from zero in two of the three tests. We can infer that some external influence has affected both the merging firms and the control firms in a similar way, but we can not infer that the influence is managerial inefficiency, nor can we infer that the negative excess return behavior is attributable to the merger."

Asquith (1983) examines 211 firms acquired by merger over the period from 1962 to

1976. After adjusting for beta using the daily CRSP excess return file, Asquith finds that the average abnormal return on the stocks of these firms is -14.8% over days (-480, -60) around the announcement. This large negative abnormal return is consistent with the inefficient management hypothesis.

Malatesta (1983) examines 85 merger targets between 1969 and 1974 involving acquisitions of at least \$10 million. The cumulative average abnormal return (calculated using the market model) of the target firm over months (-60, -25) relative to the announcement is a statistically significant 12.6%. The cumulative average abnormal return over months (-60, -3) is 4.9%.² These positive returns are somewhat surprising. They do not support the inefficient management hypothesis.

Martin and McConnell (1991) examine 253 tender offer targets over the period from 1958 to 1984. They measure abnormal performance using both the market model and an industry adjustment. Over months (-48, -3) around the announcement, the authors find that the average abnormal return under either adjustment is insignificantly different from zero. This evidence is inconsistent with the hypothesis that managers of target firms are, on average, inefficient.

However, the authors find that pre-takeover returns are significantly lower for firms where managers are replaced following the tender offer than for firms where managers are not replaced. The authors state (p. 680), "On this basis, the data support the hypothesis that takeovers are a device for disciplining the top managers of poorly performing firms. However, over the same pre-takeover period, the cumulative market model prediction error for the sample of targets which experienced a change in the top manager is not significantly less than zero whereas, the

²This is our calculation from Malatesta's Table 4.

cumulative industry-adjusted return is significantly negative. On this basis, the conclusions drawn depend upon the performance benchmark employed."

Agrawal and Walkling (1994) identify 189 Forbes 800 firms that became targets of 344 separate acquisition attempts over the period from 1980 to 1986. The authors state (p. 995), "The size and market-adjusted abnormal returns over months (-60, -13) relative to the month of bid announcement average -4.6 percent for firms that do not retain their CEOs and -2.9 percent for firms that do. These returns are insignificantly different from each other and from zero." This lack of significance does not support the inefficient management hypothesis.

Agrawal and Jaffe (1995) examine 132 mergers between NYSE acquirers and NYSE targets over the period from 1941 to 1961. They find that the cumulative average abnormal return (adjusted for size and beta) to targets over months (-60, -13) relative to the month of merger announcement is insignificantly different from zero. This result is not consistent with the inefficient management hypothesis.

Kini, Kracaw and Mian (1995) examine 244 successful tender offers over the period from 1958 to 1984. They find that the cumulative average abnormal return (using the market model) over months (-48, -3) around the announcement is 2.44%³ This result is inconsistent with the inefficient management hypothesis.

Franks and Mayer (1996) examine 33 successful hostile takeovers in the United Kingdom that were first announced during 1985 and 1986. They find that the abnormal return performance (using the market model) for this sample in the five years before the announcement is insignificantly different from the abnormal performance of a non-merging control group matched

³This number is our calculation from their Table 3.

on size and industry. Results with alternative benchmarks are qualitatively similar. The authors state (p. 164), “We therefore reject the view that hostile takeovers perform a disciplinary role”.

2.2. Other evidence

Hasbrouck (1985) examines 86 mergers from 1977 to 1982 taken from *Mergers and Acquisitions*. He finds that the average q-ratio of the acquired firms is significantly below the average q-ratio of both a control group matched by size and a control group matched by industry.

Palepu (1986) develops a model to predict acquisition targets using public data. Using a sample of 163 firms that were acquired from 1971 to 1979, he finds that the likelihood of takeover is negatively related to a firm’s abnormal stock return (calculated from the market model) over the previous four years. Though this result is consistent with the inefficient management hypothesis, Palepu states (p. 32), “While the estimated model is found to be statistically significant, its explanatory power is quite small... The strategy of investing in firms identified by the model as potential targets is found to result in statistically insignificant excess returns. Hence, the estimated model’s ability to predict targets is not superior to that of the stock market. Since the market does not seem to identify targets very accurately long before the takeover announcements, it is concluded that the model also does not predict targets accurately.”

Using a sample of 371 firms from the 1980 Fortune 500, Morck, Shleifer, and Vishny (MSV) (1988) estimate a probit model of the probability of hostile and friendly takeovers. They find that a firm’s probability of hostile takeover is significantly negatively related to the q-ratio of the firm’s industry but not to the firm’s q-ratio relative to that of the industry. The probability of friendly takeover is unrelated to either of these two attributes. The fact that the probability

of hostile takeover, but not the probability of friendly takeover, is negatively related to the q-ratio is consistent with the inefficient management hypothesis. However, this consistency is weakened since only the industry q, and not the firm's q relative to the industry, is a significant explanatory variable. This consistency is further weakened since Martin and McConnell (1991) find no difference between the pre-takeover abnormal return performance of hostile targets and friendly targets. Furthermore, using a sample of 87 successful tender offers made between October 1968 and December 1980, Lang, Stulz and Walkling (1989) find that the average q-ratio of target firms one year before the takeover is insignificantly different in friendly vs. hostile offers. Finally, using a sample similar to that in MSV (1988), Morck, Shleifer and Vishny (1989) find that the probability of neither hostile nor friendly acquisition is significantly affected by the target's abnormal stock return relative to the industry over a 3-year period prior to the acquisition.⁴

2.3. Interpretation of the evidence

Taking the above set of studies together, we believe the following two conclusions are warranted. First, the literature does not provide strong evidence that targets, as a whole, have underperformed prior to takeover. Table 1 summarizes the results of the 12 studies discussed in section 2.1 that examine abnormal stock price returns. Of these, only two studies (Smiley (1976), and Asquith (1983)) find statistically significant underperformance for the average target.

Second, in both Martin and McConnell (1991) and MSV (1988), the behavior of certain subsamples is consistent with the inefficient management hypothesis. Martin and McConnell

⁴MSV (1989) measure stock returns over the period 1978 to 1980 for acquisitions taking place from 1981 to 1985. Thus, the time between measurement of past stock returns and the acquisition date is not uniform across targets.

show that targets where management is replaced have poorer pre-takeover performance than do targets where management is not replaced. MSV (1988) show that the q-ratio has some predictive power for hostile targets. However, neither of these studies shows statistically significant underperformance for the target sample as a whole.⁵ And, as discussed above, the work of both Martin and McConnell (1991) and MSV (1989) weaken the conclusions of MSV (1988).

The literature reviewed above does not provide strong evidence in support of the inefficient management hypothesis. In addition, since an investigation of long-run pre-acquisition returns to targets is often a sideline to these papers and because many of these papers are not recent, the methodologies are not state-of-the-art. Thus, a re-examination of the inefficient management hypothesis is merited. This paper tests whether the average target exhibits long-run underperformance prior to takeover. In other words, we test whether the inefficient management hypothesis applies to the target population as a whole.

3. Data

This paper examines the pre-acquisition stock price performance of target firms. The sample of acquisitions is obtained by a two-step process. First, we compile a list of all NYSE firms that were delisted from the CRSP monthly files due to a merger, tender offer, or reorganization over the period from 1930 to 1987. Second, we determine the announcement date of the merger or tender offer using the Wall Street Journal Index (WSJI) for announcements that

⁵MSV's Table 4.3a indicates that acquired firms have lower q-ratios than does the full sample, but no significance tests are presented.

occurred in 1956 or later, and the New York Times Index (NYTI) for announcements that occurred prior to 1956.⁶ The announcement date is defined as the date of the first public announcement about the acquisition of a target firm by either the target or a bidder.⁷

An acquisition is classified as a tender offer if the acquiring firm purchased at least 60% of the target firm's shares by tender. The sample consists of 809 mergers and 262 tender offers. This represents nearly the entire population of acquisitions of NYSE firms by NYSE firms over the period from 1930 to 1987.

Table 2 presents the distribution of acquisitions by the decade of announcement and the form of acquisition. There are approximately three mergers for every tender offer. Both mergers and tender offers occur more frequently in the later decades than in the earlier decades, a phenomenon explained partly by the increase in the number of firms listed on the NYSE. The increase in the frequency of acquisitions is particularly noticeable for tender offers, where none occurred prior to the 1960s. This point is discussed in prior studies (e.g., Knoeber (1986)).

Each target is placed into the appropriate size decile of NYSE firms as of 12 months before the month of acquisition announcement. We classify an acquisition as conglomerate if the bidder and target are in different two-digit SIC industries; otherwise it is classified as non-conglomerate. Table 3 presents the distribution of targets by the form and type of acquisition and by size. The bottom row indicates that conglomerate acquisitions occur approximately four times as frequently as do non-conglomerate acquisitions. This ratio holds for both mergers and tender offers. The last column on the right presents the marginal distribution by size. Though the

⁶The WSJI was not published prior to 1956.

⁷The sample of firms acquired in mergers during 1955 to 1987 was kindly provided by Professor Robert Harris. We collected the sample from 1930 to 1954 using the same procedure.

targets are well-represented in each NYSE size decile, they are more likely to appear in deciles 2-6 than in the other deciles. This pattern of target size is observed in each column of the table.

4. Pre-Acquisition Performance

This section examines the long-run performance of target firms before their acquisition. Section 4.1 analyzes the entire sample, section 4.2 examines various subsamples, and section 4.3 investigates the relation between pre-acquisition performance and bid premia.

4.1. The Entire Sample

In this section, we measure the long-run performance of the entire sample of target firms using three methods: a size and beta adjustment; a size, price and beta adjustment; and a size and industry adjustment. A summary and interpretation of our results is deferred until section 4.1.4.

4.1.1. Adjustment for Size and Beta

Event studies in finance traditionally measure stock return performance after subtracting a benchmark return based on beta risk. This adjustment seems to be sufficient for studies examining short-run returns over several *days* surrounding an event. However, when investigating long-run returns over several *years*, Dimson and Marsh (1986) present persuasive evidence that measured performance can be significantly affected by the firm size effect.

In order to adjust for both beta and size, we measure a stock's abnormal performance, ϵ_{it} , as:⁸

⁸A similar approach has been used by a number of studies, e.g., Dimson and Marsh (1986), Lakonishok and Vermaelen (1990), and Agrawal, Jaffe and Mandelker (1992).

$$\varepsilon_{it} = r_{it} - r_{st} - \gamma_{1t} (\beta_i - \beta_s), \quad (1)$$

where r_{it} is the return on security i over month t ; r_{st} is the equally-weighted average return during month t on the control portfolio of all firms on the NYSE in the same size decile as firm i ; β_i and β_s are the beta of security i and the beta of the size control group, respectively. Abnormal returns, ε_{it} , over months (-120, -61) are computed using the beta estimate from this period. Abnormal returns over months (-60, 0) are computed using the beta estimated from the period (-60, -3). The empirical estimate of the market risk premium, γ_{1t} , is calculated according to the methodology of Fama and MacBeth (1973).⁹

The pre-acquisition abnormal returns with the above size and beta adjustment are presented in Table 4. Panel A shows the performance over the announcement period. Target firms experience an abnormal return of approximately 24% over months (-2, 0), where 0 is the month of announcement. This result is broadly consistent with the existing finance literature.

Long-run pre-acquisition performance is presented in Panel B of the table. Column 3 shows cumulative average abnormal returns (CAARs) over each of the ten years prior to announcement. Row 1 stops at month -3 rather than month -1, since the large returns over months (-2, -1) in both our Panel A and in previous studies are likely due to the leakage of information about the acquisition. Column 6 shows CAARs calculated from the beginning of each of the ten years before the announcement to month -3. The CAARs are all negative here. However, the CAARs are not significant over the four-year period prior to announcement. Statistical significance is obtained only for periods beginning at least five years prior to announcement. Target firms have a statistically significant abnormal performance of -4.1% over

⁹The estimates of γ_1 for periods subsequent to 1968, the last year in the Fama and MacBeth study, were kindly provided by Professor Richard Sloan.

the five-year period before the takeover and -6.7% over the ten years before the takeover. A large part of this abnormal performance occurs in the fifth and sixth years prior to the announcement, with CAARs of -2.6% and -1.2%, respectively.

4.1.2. Adjustment for Size, Price and Beta

While studies on long-run performance generally adjust for only size and beta, it has long been known that an upward bid-ask bias can affect the measurement of long-run returns. In maintaining an equally-weighted portfolio, one must rebalance by selling stocks which have been past winners and buying stocks which have been past losers. Blume and Stambaugh (1983) show that, in simulated portfolios, a stock whose last trade was at the ask price is more likely to be "sold" and less likely to be "bought" for rebalancing purposes than is a stock whose last trade was at the bid price. This leads to an upward bias which is likely to be positively related to the size of the bid-ask spread, measured as a percent of price. Since the percentage bid-ask spread appears to be inversely related to price, the bias is likely to be the greatest for low-priced stocks. A control portfolio based on price offsets this bias.

Since Blume and Stambaugh show that a size effect exists even after adjustment for the bid-ask bias, we form a control group based on both size and price. The abnormal return for stock i in month t is now computed as:

$$\varepsilon_{it} = r_{it} - r_{ct} - \gamma_{it} (\beta_i - \beta_c), \quad (2)$$

where r_{ct} is the month t return on the equal-weighted control portfolio of all NYSE firms that are in the same size quintile as firm i and, within that quintile, the same stock price quintile as firm i ; and β_c is the beta of the control portfolio.

The pre-announcement performance of target firms using this control group is presented in Table 5. Panel A shows performance over months (-2, 0) relative to the announcement. The results in Panel A of Table 5 are quite similar to those in Panel A of Table 4.

Long-run pre-acquisition performance is presented in Panel B of the table. The CAARs in column 6 are somewhat more negative in Table 5 than in Table 4, consistent with an upward bid-ask bias in the residuals of Table 4. Stockholders of target firms lost a statistically significant 5.2% over the five years before the takeover announcement (up to month -3) and 9.5% over the ten pre-takeover years. However, we draw the same three general conclusions from both tables. First, the CAARs are insignificantly different from zero over months (-48, -3). Second, statistical significance is obtained only for periods beginning at least five years prior to the announcement. Third, a large part of the abnormal performance occurs in the fifth and sixth years prior to announcement.

4.1.3. Adjustment for Size and Industry

Morck, Shleifer and Vishny (1988, p. 116) point out that "mismanagement can come in two forms. It can be a firm-specific or an industry-wide phenomenon." Under the assumption that mismanagement is industry-wide, an industry adjustment to the acquired firm's stock returns would be inappropriate. However, if mismanagement is firm-specific, either an industry-adjustment or one of the adjustments described in Sections 4.1.1 and 4.1.2 would be sensible. For our industry adjustment, the abnormal return on firm i in month t is computed as:

$$\varepsilon_{it} = r_{it} - r_{ct} \quad (3)$$

where r_{it} is the stock return for firm i in month t and r_{ct} is the stock return in month t for the

control firm that is closest in market capitalization to firm i in month -120 (or the month of NYSE listing, if not listed in month -120) in the two-digit SIC industry of firm i .

The pre-announcement performance of target firms using this industry control group is presented in Table 6. Panel A shows performance over months (-2, 0) relative to the announcement. These results are quite similar to those of Panel A in Tables 4 and 5.

Long-run pre-acquisition performance is presented in Panel B of this table. For the first 4 years prior to announcement, the results are slightly more negative in this table than in Tables 4 and 5. However, for longer periods, the differences between this table and the previous two are much larger. For example, the abnormal return over months (-120, -3) is -17.6% with an industry adjustment but only -6.7% and -9.5% in the previous two tables. This difference implies that the industry of acquired firms outperforms the market prior to the acquisition, a somewhat surprising result but one that has also been documented by Martin and McConnell (1991). However, this result is different from Morck, Shleifer and Vishny's (1988) findings based on q . They find that takeovers occur in industries that have been underperforming. As with Tables 4 and 5, a large part of the abnormal performance occurs in the fifth and sixth years before the announcement.

4.1.4. Summary of Results for the Entire Sample

Tables 4, 5, and 6 provide a few basic results.¹⁰ Returns in the first four years prior to the takeover announcement are negative, but insignificantly different from zero. Returns over longer periods are significantly below zero. For example, cumulative abnormal returns over months (-120, -3) relative to the announcement range from -6.7% (size and beta adjustment) to

¹⁰While we employed a number of other methodologies as well, we do not report these results since they are qualitatively similar to those of Tables 4-6.

-17.6% (size and industry adjustment). Over months (-60, -3), they range from -4.1% to -10.1%. Since the long-run residuals are significantly negative, our results are consistent with the inefficient management hypothesis. Furthermore, the lack of significant underperformance from year -4 forward need not imply that managers have corrected their poor management. Rather, stock market efficiency implies that the market's initial forecast of long-term bad management should be immediately impounded into prices. Abnormal returns at later dates will be positive (negative) if the improvement in management performance is greater (less) than had originally been anticipated.

Our results differ from those of previous studies examining the inefficient management hypothesis. We pointed out in Section 2 that the literature has not generally found significantly negative long-run returns prior to takeover announcements. Our methodology improves upon previous papers in a number of ways. Our sample, which covers acquisitions of over a thousand NYSE firms over six decades, is larger than that employed by the existing literature. We explicitly adjust for the size effect, the bid-ask bias, the empirical market risk premium, and the industry effect. Finally, we examine a full ten years prior to the announcement, a period longer than that generally covered in previous studies.

Recent papers by Barber and Lyon (1995) and Kothari and Warner (1995) suggest that a number of commonly-used methodologies create biased long-run abnormal returns in event studies. However, the methodology in these two papers that is most closely related to ours, the size decile portfolio technique of Barber and Lyon, tends to produce a positive bias.¹¹ This finding strengthens our conclusion of significantly negative pre-acquisition returns.

¹¹See their Table 12.

Furthermore, Barber and Lyon find that a control firm provides a better benchmark for returns than does a control portfolio. Our size and industry-adjustment approach of Table 6 uses a control firm as a benchmark. The pre-acquisition returns with this benchmark are even lower than the return from the other two approaches.

4.2. Subsamples

In this section, we analyze pre-announcement performance for various subsamples of our data. To avoid repetition, we present our results only under the size, price and beta-adjusted methodology of Table 5.¹²

4.2.1. Mergers vs. Tender Offers

Table 7 presents the long-run pre-takeover performance of targets in both mergers and tender offers. To save space, only the CAARs up to month -3 are presented. One might expect performance to be worse prior to tender offers, since poor performance is likely to precipitate hostile takeovers, which are more likely to be accomplished through tender offers rather than mergers. However, if anything, the results suggest worse performance before mergers. The CAARs are generally similar for the two acquisition forms, though there is greater underperformance for mergers over the longest two time periods (months -120 to -3 and months -108 to -3). While many of the t-values are significant for mergers and none are significant for tender offers, all of the differences in CAARs between mergers and tender offers are statistically insignificant. Thus, the common belief that tender offers are more disciplinary than mergers is

¹²Similar results are obtained under the size and beta adjustment of Table 4 and the size and industry adjustment of Table 6.

not borne out by our data.

4.2.2. Differences in Time Periods

Since the studies we reviewed in Section 2 use different time periods, it is not surprising that they have differing results. To investigate this issue, Table 8 presents the performance of targets acquired during 1930-59 and 1960-87. There is clearly a difference in long-run pre-acquisition performance between the two subsamples. The CAARs are all insignificantly positive for the period from 1930 to 1959, a result inconsistent with the inefficient management hypothesis. By contrast, the CAARs are significantly negative over the later period, a result consistent with the hypothesis. The CAARs for the two subgroups are significantly different from each other over most of the intervals. Thus, it appears that takeovers have become more disciplinary over time. The cause of this change is not obvious. While the frequency of tender offers increased over time, the results in Table 7 suggest that the CAARs before tender offers are actually less negative than are the CAARs before mergers.

4.2.3. Conglomerate vs. Non-Conglomerate Acquisitions

While one can make the case that the gains from conglomerate acquisitions are smaller than the gains from non-conglomerate acquisitions, research (see Morck, Shleifer and Vishny (1990, Table III) and Agrawal, Jaffe and Mandelker (1992)) has not shown significantly different abnormal returns between the two types of acquisitions either around the time of the announcement or in the years following the acquisition. However, there may be differences in the pervasiveness of inefficient management between the targets in conglomerate and non-

conglomerate takeovers. We find that the long-run performance before the takeover is somewhat worse for non-conglomerate targets than for conglomerate targets. However, the results (which we do not present) are not significantly different for the two subsamples.

4.2.4. Size of the Target

The extent of inefficient management may be a function of firm size. We examine this idea by placing all targets into one of five size quintiles based on the market capitalization of the firm as of month -120 (or the month of listing on the NYSE, if not listed by month -120) relative to the announcement. Targets in quintiles 1 and 2 are labeled small, targets in quintile 3 are labeled mid-cap, and those in quintiles 4 and 5 are labeled large. The long-run pre-announcement performance for the three subsamples (which we do not present) do not appear to be significantly different from each other.

4.2.5. Friendly vs. Hostile Acquisitions

Finally, Morck, Shleifer and Vishny (1988) argue that hostile takeovers are more likely than friendly takeovers to occur for disciplinary reasons. This implies that poor performance is more likely to precede hostile rather than friendly takeovers. We classify a takeover as hostile (friendly) if the target management initially opposed (did not oppose) the bid. For our sample of takeovers from 1930 to 1987, we are able to classify 196 acquisitions as hostile and 451 as friendly. Our results (not presented) show no difference in pre-takeover performance between the two samples. These results are similar to those in Martin and McConnell (1991).

4.3. Pre-Acquisition Performance and Bid Premia

In a disciplinary takeover, the acquirer desires to reverse the suboptimal operating performance of the target. Thus, the bid premia might be inversely related to the target's pre-acquisition performance. To test this possibility, we estimate the following regression:

$$CAR_{ann,i} = a + b CAR_{preacq,i} + e_i \quad (4)$$

where $CAR_{ann,i}$ is the cumulative abnormal return for the stock of target firm i around the takeover announcement date, a measure of the effective takeover premium. $CAR_{preacq,i}$ is the pre-acquisition cumulative abnormal return for the stock of target firm i . A negative sign on b is consistent with the hypothesis that the bid premia are negatively related to the magnitude of the target's underperformance. The announcement period was measured over 3 intervals: months (-2,0), (-1,0), and 0. The pre-acquisition period was measured over ten intervals: (-120,-3), (-108,-3),..., (-12,-3). Out of 30 different regressions, only one had a t -value for b below -2.

Of course, it is unlikely that all the takeovers in our sample are disciplinary in nature. Since firms where $CAR_{preacq,i} \geq 0$ are less likely to have inefficient management, we re-estimated equation (4) for the subsamples where $CAR_{preacq,i} < 0$. Here, none of the 30 different regressions have a t -value for b below -2. Because our regressions are insignificant for the most part, we do not include them in a table. Our regressions are consistent with the null hypothesis of no relationship between pre-acquisition performance and bid premia.

5. The Lag Between Poor Performance and Takeover

The results of Tables 4 through 6 suggest that changes in corporate control occur well

after the market learns of poor performance. In section 5.1, we investigate the length of this lag. Sections 5.2 through 5.4 examine the potential causes of this lag.

5.1. The Length of the Lag

One can examine the extent of the delay by focussing on periods beginning with month -120 relative to the acquisition. Using this approach, Table 9 presents abnormal performance for our three different adjustments. Panel A shows that, under the size and beta adjustment, performance over months (-120, -49) is significantly negative ($t = -2.77$), while performance for all periods ending before month -49 is insignificantly different from zero. Similarly, the last two adjustments show significantly negative abnormal performance over months (-120, -61) and months (-120, -85), respectively. Thus, evidence from these adjustments indicates that the market observes poor performance somewhere between four and seven years prior to the announcement. (Poor performance may actually have been observed earlier, though one can not tell since our data begins with month -120.)

Warner, Watts and Wruck (1988) indicate that the annual turnover rate for top executives is 9.3%, implying an average tenure of about 10.75 ($=1/.093$) years. Similarly, Weisbach (1988) finds a 7.8% turnover rate for CEOs, implying an average tenure of about 12.8 ($=1/.078$) years. Since bad performance likely begins well before the market observes it, the delayed response to poor performance in our study may well protect bad managers for much, if not most, of their normal tenures. Our results are consistent with those of Denis and Denis (1995), who study changes in top management. They write (p. 1055), "Forced top management changes do not appear to be very timely; managers appear to be forced out only after an extended period of poor

performance involving substantial stockholder losses.”

Our findings are consistent with the view of Fama (1980) and Fama and Jensen (1983) that the market for corporate control, while effective in disciplining managers, is a mechanism of last resort. Alternatively, while the results of Table 9 show significantly poor performance well before a takeover for our sample as a whole, abnormal performance for any individual firm may not be detected so quickly. Thus, the takeover market might actually be disciplining managers soon after detecting poor performance.

5.2. The Effect of Anti-trust Enforcement on the Lag

While anti-trust laws have governed acquisitions in the United States for our entire sample period, the level of enforcement has not been uniform. The pre-acquisition performance of target firms should be affected by the level of enforcement in two ways. Suppose that the market suddenly realizes at date t that managers of a firm either have low ability or have poor incentives, a situation likely leading to a disciplinary takeover. First, the lag between announcement and takeover would presumably be longer under a regime of tighter anti-trust enforcement. Second, while the stock price would likely fall at date t under either regime, the fall should be greater with tight enforcement. That is, the market should anticipate that existing management’s poor performance would last longer here.

We identify three intervals¹³ of lax anti-trust enforcement during our sample period:

- 1) The Second World War years of 1942-1945, when the Roosevelt administration felt that strong enforcement would hamper military production.

¹³Based on discussions with George Bittlingmayer.

- 2) The Johnson administration years of 1964-1967
- 3) 1982-1987, when the Reagan administration's free-market orientation led to a reduction in enforcement.

Table 10 presents the pre-acquisition performance during periods of tight and lenient anti-trust enforcement. As with Tables 7 and 8, we present our findings only under the size, price and beta-adjusted methodology. Panel B shows that the lag between poor performance and takeover is as long as nine years during periods of tight enforcement. That is, the first interval with a significant t-value is (-120, -97) relative to the announcement. Conversely, the lag is shorter during weak anti-trust enforcement periods. Here, the t-values first become significant over the interval (-120,-49). The sample sizes in the two periods are roughly equal, so that the differences in t-values are not likely due to the differences in the number of observations. The longer lag during periods of tight enforcement supports the hypothesis that anti-trust enforcement is a barrier to disciplinary takeovers.

However, as stated above, if tight enforcement is a barrier, return performance should be worse during these periods. This implication is not borne out in the data. For example, the CAAR over the interval (-120,-3) is actually more negative during periods of lenient enforcement than during periods of tight enforcement.

5.3. The Lag and Merger Waves

It is well-known that mergers occur in waves. Although there is no generally-accepted economic theory explaining merger waves, they presumably occur when the benefits of acquisitions are high and/or the costs of acquisitions are low. If the costs of acquisition are low

during waves, the lag between the inception of poor performance and a disciplinary takeover should be short.

To examine this possibility, we consider the period in our sample containing the two biggest merger waves, 1967-1969 and 1978-1987.¹⁴ Table 11 presents pre-acquisition performance for acquisitions occurring during wave and non-wave periods. The lag between poor performance and takeover is shorter during the merger wave periods. For example, the t-value in Panel B for the period (-120,-73) is significant for non-wave years, while no t-value in Panel A is significant for acquisitions occurring during the merger waves. This disparity in t-values occurs even though more acquisitions in our sample occur during merger waves than at other times.

While stronger, these results are similar to those in Table 10, a result to be expected since the merger wave periods overlap the lenient enforcement periods. This overlap itself is not surprising, since tight anti-trust enforcement presumably raises the cost of acquisition, thereby reducing the number of mergers.

5.4. The Lag and Regulation

Since regulators have the power to impede acquisitions, the delay in correcting poor performance may be longer in regulated firms. Table 12 shows pre-acquisition performance separately for targets in regulated and unregulated industries. We classify public utilities, banking, finance, insurance, and railroads as regulated industries. As can be seen, the CAARs are much more negative for targets in regulated industries. However, the t-statistics for the regulated firms

¹⁴See Weston, Chung and Hoag (1990, Table 1.5, p. 15).

are all insignificant. This lack of significance is probably due to the small sample size, caused by the infrequency of takeovers of regulated firms. Thus, our findings, while interesting, are only suggestive that regulation increases the lag between poor performance and takeover.

6. Conclusions

One generally-accepted motive for acquisitions is that the acquirer can improve the management of the target. While all firms, even those with good management, can be improved by better management, the potential for improvement is clearly more in firms that are performing poorly. The literature has tested this inefficient management hypothesis by examining abnormal performance prior to takeovers. Our Section 2 indicates that previous studies generally find that the abnormal returns to targets are insignificantly different from zero in the years prior to acquisition, a result offering little support for the hypothesis.

Our paper thoroughly re-examines this issue with a number of methodological improvements. In particular, we make adjustments to the long-run abnormal stock returns for the firm size effect (Dimson and Marsh (1986)), the bid-ask bias (Blume and Stambaugh (1983) and Conrad and Kaul (1993)) and an industry effect. We use the empirical estimate of the market risk premium (Fama and MacBeth (1973) and Chopra, Lakonishok and Ritter (1992)). In addition, we use a large sample of acquisitions spanning six decades and examine performance over ten years before the acquisition announcement.

We find insignificant abnormal returns for targets in the four years prior to acquisition, a result consistent with the literature. However, abnormal returns are significantly negative when a longer time period prior to acquisition is used. These conclusions hold whether returns are

adjusted for size and beta; for size, price and beta; or for size and industry. Across the three methodologies, the abnormal returns range from -7% to -18% over the ten year pre-bid period and from -4% to -10% over the five year pre-bid period; all are statistically significant. Since the long-run residuals are significantly negative, our results support the inefficient management hypothesis. Furthermore, the lack of significant underperformance from year -4 forward does not imply that poor management has been corrected. Rather, stock market efficiency implies that the market's initial forecast of long-term bad management should be immediately impounded into prices. Abnormal returns at later dates should differ from zero only if the improvement in management differs from anticipations.

We examined various subsamples as well. If anything, pre-takeover performance is slightly worse before mergers than before tender offers, a result inconsistent with the common belief that tender offers are more disciplinary than are mergers. Performance is better in the period 1930 to 1959 than in the period 1960 to 1987. There is no difference in pre-takeover performance between targets of conglomerate and non-conglomerate acquisitions, between small and large targets, and between the targets of friendly and hostile bids.

While our evidence suggests that the improvement of inefficient management is an important motive for takeovers, takeovers do not appear to be timely. The results of Table 9 indicate that a target's poor performance is known to the market, on average, between four and seven years before the acquisition. Why the market for corporate control waits years before attempting to correct poor performance is an interesting issue for future research. Perhaps, as Fama (1980) and Fama and Jensen (1983) argue, the market for corporate control is truly a mechanism of last resort. Alternatively, poor performance for any individual firm may not be

detected as quickly as for target firms as a group. In any event, the delayed response to poor performance in our study may well protect bad managers for much of their normal tenures.

We next investigate the lag between poor performance and takeover for various subsamples. The lag appears to be longer for acquisitions that occur during periods of tight anti-trust enforcement than for those that occur during periods of lenient anti-trust enforcement. This finding is consistent with the hypothesis that anti-trust enforcement impedes takeovers. However, the pre-bid abnormal returns are actually more negative for acquisitions done during periods of lenient enforcement, a result inconsistent with this hypothesis.

The lag appears to be shorter for acquisitions occurring during merger waves than for acquisitions made in other periods, suggesting that the presumably lower acquisition costs during merger waves facilitate disciplinary takeovers. Finally, we find a long lag for acquisitions in regulated industries, a result consistent with the hypothesis that regulation impedes acquisitions. However, the small sample size here makes the result suggestive at best.

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Table 1

Prior studies of the pre-acquisition performance of target firms

Study	Merger or Tender offer	Sample		Months around Announcement	CAAR (%)	Method
		Period	Size			
Mandelker (1973)	M	1941-62	252	(-40, -9) ^a	-3.0	Fama-MacBeth (1973)
Ellert (1976)	M	1950-70	311	(-100, -8) ^a	-11.7	2-factor market model
Smiley (1976)	T	1956-70	95	(-120, -1)	-55.6*	3-factor market model
Dodd and Ruback (1977)	T	1958-76	136	(-60, -4)	+2.0	Market model
Langetieg (1978)	M	1929-69	149	(-72, -7) ^a	-1.0	3-factor model
Asquith (1983)	M	1962-76	211	(-24, -2)	-14.8*	CRSP excess returns
Malatesta (1983)	M	1969-74	85	(-60, -3)	+4.9 ^b	Market model
Martin and McConnell (1991)	T	1958-84	253	(-48, -3)	+4.3	Market model
Agrawal and Walkling (1994)	M, T ^c	1980-86	182	(-60, -13)	-3.8	Size and β -adjustment
Agrawal and Jaffe (1995)	M	1941-61	132	(-60, -13)	-1.1	Size and β -adjustment
Kini, Krackaw and Mian (1995)	T	1958-84	244	(-48, -3)	+2.4 ^d	Market model
Franks and Mayer (1996)	T	1985-86	32 ^e	(-60, -1)	-0.3	Size-ind. control firm

^aAround completion^bCalculated from their Table 4^cBids^dOur calculation from their Table 3^eHostile takeovers in UK

*Stat. significant at 5%

Table 2**Distribution of the sample of acquisitions by
the decade of announcement and by the form of acquisition.**

The sample consists of NYSE targets that were acquired by NYSE acquirers during the period from 1930 to 1987. The announcement date is defined as the date of the first public announcement about the acquisition of a given target by either the target or the acquirer.

Decade of Announcement	Number of		Total
	Mergers	Tender offers	
1930-1939	9	0	9
1940-1949	16	0	16
1950-1959	82	0	82
1960-1969	246	38	284
1970-1979	171	58	229
1980-1987	285	166	451
	<u>809</u>	<u>262</u>	<u>1071</u>
	—	—	—

Table 3
Distribution of the target sample by the form and type of acquisition and by target size

The sample consists of targets in mergers and tender offers between New York Stock Exchange (NYSE) acquirers and NYSE targets over the period from 1930 to 1987. Each target is placed into the appropriate size decile of NYSE firms as of 12 months before the month of announcement of the acquisition. An acquisition is classified as a tender offer if the acquirer purchased at least 60% of the target's shares by tender. An acquisition is classified as conglomerate if the two-digit primary SIC industry code of the target and acquirer are different; otherwise, it is classified as non-conglomerate.

Size Decile	Mergers		Tender Offers		Total	
	Conglomerate	Non-Conglomerate	Conglomerate	Non-Conglomerate	Conglomerate	Non-Conglomerate
Unknown	36	7	10	0	10	46
Smallest	61	11	11	2	13	72
2	81	22	25	7	32	106
3	86	26	27	8	35	113
4	85	20	30	6	36	115
5	80	20	31	7	38	111
6	78	17	25	6	31	103
7	52	14	20	2	22	72
8	42	17	14	5	19	56
9	25	7	12	1	13	37
Largest	15	7	11	2	13	26
Total	641	168	216	46	262	857
						214
						1071

Table 4

**Pre-acquisition Performance of All Targets Using
Size and β -adjustment**

The table presents size and beta-adjusted abnormal stock returns of targets in acquisitions by merger or tender offer over the period from 1930 to 1987. The abnormal return on firm i in month t is computed as:

$$\epsilon_{it} = r_{it} - r_{st} - \gamma_{it} (\beta_i - \beta_s),$$

where r_{it} is the return on firm i 's stock in month t , r_{st} is the return on the equal-weighted portfolio of all NYSE firms that are in the same size (market capitalization) decile as firm i . β_i and β_s are the betas of security i and size portfolio s , respectively. Abnormal returns over months (-120, -61) are computed using the beta estimate from this period. Abnormal returns over months (-60, 0) are computed using beta estimated from the period (-60,-3). Month 0 is the month of announcement of the acquisition. γ_{it} is the empirical market risk premium computed as in Fama and MacBeth (1973).

Panel A. Performance over the announcement period

Months around announcement		AR(%)	t-stat.	n
t_1	t_2			
0	0	18.79	75.54	1041
-1	0	22.51	64.68	1043
-2	0	24.03	56.08	1044

Panel B. Long-run pre-acquisition performance

Months around announcement		Over period shown			Over months ($t_1, -3$)		
t_1	t_2	CAAR(%)	t-stat.	n	CAAR(%)	t-stat.	n
-12	-3	-0.52	-0.61	1047	-0.52	-0.61	1047
-24	-13	-0.02	0.07	1000	-0.55	-0.36	1022
-36	-25	-0.84	-1.19	952	-1.39	-1.00	997
-48	-37	-0.07	-0.06	901	-1.45	-0.89	972
-60	-49	-2.63	-3.21	852	-4.09	-2.25	947
-72	-61	-1.20	-1.38	817	-5.28	-2.38	925
-84	-73	0.66	-0.32	783	-4.63	-2.32	904
-96	-85	-0.37	-0.74	756	-5.00	-2.44	885
-108	-97	-0.37	-0.55	715	-5.37	-2.48	866
-120	-109	-1.32	-0.95	685	-6.69	-2.65	847

Table 5

**Pre-acquisition Performance of All Targets Using
Size, Price and β -adjustment**

The table presents size, price and beta-adjusted abnormal stock returns of targets in acquisitions by merger or tender-offer over the period from 1930 to 1987. The abnormal return on firm i in month t is computed as:

$$\epsilon_{it} = r_{it} - r_{ct} - \gamma_{it} (\beta_i - \beta_c),$$

where r_{it} is the return on firm i 's stock in month t , r_{ct} is the return on the equal-weighted control portfolio of all NYSE firms that are in the same size (market capitalization) quintile as firm i and, within that quintile, in the same stock price quintile as firm i . β_i and β_c are the betas of security i and control portfolio c , respectively. Abnormal returns over months (-120, -61) are computed using the beta estimate from this period. Abnormal returns over months (-60, 0) are computed using beta estimated from the period (-60,-3). Month 0 is the month of announcement of the acquisition. γ_{it} is the empirical market risk premium computed as in Fama and MacBeth (1973).

Panel A. Performance over the announcement period

Months around announcement		AR(%)	t-stat.	n
t_1	t_2			
0	0	18.78	74.76	1041
-1	0	22.41	63.66	1043
-2	0	23.86	55.01	1044

Panel B. Long-run pre-acquisition performance

Months around announcement		Over period shown			Over months ($t_1, -3$)		
t_1	t_2	CAAR(%)	t-stat.	n	CAAR(%)	t-stat.	n
-12	-3	-1.51	-1.95	1047	-1.51	-1.95	1047
-24	-13	-0.17	0.01	1000	-1.68	-1.30	1022
-36	-25	-1.13	-1.45	952	-2.81	-1.91	997
-48	-37	0.04	0.04	901	-2.77	-1.62	972
-60	-49	-2.45	-2.97	852	-5.23	-2.79	947
-72	-61	-1.52	-1.64	817	-6.75	-2.88	925
-84	-73	-0.02	-0.85	783	-6.77	-2.99	904
-96	-85	-0.42	-0.72	756	-7.19	-3.05	885
-108	-97	-0.57	-0.48	715	-7.75	-3.04	866
-120	-109	-1.76	-1.38	685	-9.51	-3.32	847

Table 6

**Pre-acquisition Performance of All Targets Using
Size and Industry-adjustment**

The table presents size and industry-adjusted abnormal stock returns of targets in acquisitions by merger or tender-offer over the period from 1930 to 1987. The abnormal return on firm *i* in month *t* is computed as:

$$e_{it} = r_{it} - r_{ct}$$

where r_{it} is the return on firm *i*'s stock in month *t*, r_{ct} is the return on the control firm that is closest in size (market capitalization) to firm *i* in month -120 in the two-digit SIC industry of firm *i*. If an acquired firm is not listed on NYSE in month -120, its returns are computed from the month of listing. If the control firm gets delisted from NYSE before month 0, it is replaced that month with the firm that is closest in size to firm *i* in the two-digit SIC industry of firm *i*. Month 0 is the month of announcement of the acquisition.

Panel A. Performance over the announcement period

Months around announcement		AR(%)	t-stat.	n
t ₁	t ₂			
0	0	18.78	45.31	1051
-1	0	21.97	37.68	1054
-2	0	23.89	33.47	1055

Panel B. Long-run pre-acquisition performance

Months around announcement		Over period shown			Over months (t ₁ , -3)		
t ₁	t ₂	CAAR(%)	t-stat.	n	CAAR(%)	t-stat.	n
-12	-3	-1.81	-0.99	1051	-1.81	-0.99	1051
-24	-13	0.48	-0.16	1013	-1.34	-0.55	1030
-36	-25	-1.50	-0.92	971	-2.84	-0.99	1009
-48	-37	-2.23	-1.62	920	-5.07	-1.67	986
-60	-49	-5.03	-3.61	868	-10.10	-3.13	961
-72	-61	-3.75	-2.45	828	-13.85	-3.64	939
-84	-73	1.35	0.60	796	-12.50	-3.13	918
-96	-85	-2.95	-1.94	768	-15.45	-3.62	899
-108	-97	-1.21	-0.57	730	-16.66	-3.60	879
-120	-109	-0.97	-0.70	691	-17.63	-3.63	860

Table 7

Pre-acquisition Performance of Targets by the Form of Acquisition

The table presents size, price and beta-adjusted abnormal stock returns of targets in mergers and tender offers over the period from 1930 to 1987. The abnormal return on firm i in month t is computed as:

$$\epsilon_{it} = r_{it} - r_{ct} - \gamma_{1t} (\beta_i - \beta_c),$$

where r_{it} is the return on firm i 's stock in month t , r_{ct} is the return on the equal-weighted control portfolio of all NYSE firms that are in the same size (market capitalization) quintile as firm i and, within that quintile, the same stock price quintile as firm i . β_i and β_c are the betas of security i and control portfolio c , respectively. Abnormal returns over months (-120, -61) are computed using the beta estimate from this period. Abnormal returns over months (-60, 0) are computed using beta estimated from the period (-60,-3). Month 0 is the month of announcement of the acquisition. γ_{1t} is the empirical market risk premium computed as in Fama and Macbeth (1973).

Months around announcement		Mergers			Tender Offers		
t_1	t_2	CAAR(%)	t-stat.	n	CAAR(%)	t-stat.	n
-12	-3	-2.13	-2.14	794	0.41	0.01	253
-24	-3	-1.85	-1.10	773	-1.13	-0.50	248
-36	-3	-2.14	-1.19	751	-4.76	-1.33	246
-48	-3	-2.49	-1.18	730	-3.62	-0.89	242
-60	-3	-4.81	-2.21	708	-6.44	-1.29	238
-72	-3	-7.34	-2.64	690	-5.16	-1.23	235
-84	-3	-7.08	-2.62	673	-5.93	-1.47	231
-96	-3	-7.55	-2.67	657	-6.22	-1.51	228
-108	-3	-8.71	-2.86	641	-5.24	-1.17	224
-120	-3	-11.80	-3.39	626	-3.56	-0.85	221

Table 8

Pre-acquisition Performance of Targets by the Sample Period

The table presents size, price and beta-adjusted abnormal stock returns of targets in acquisitions over the period 1930-59 and 1960-87. The abnormal return on firm *i* in month *t* is computed as:

$$\epsilon_{it} = r_{it} - r_{ct} - \gamma_{1t} (\beta_i - \beta_c),$$

where r_{it} is the return on firm *i*'s stock in month *t*, r_{ct} is the return on the equal-weighted control portfolio of all NYSE firms that are in the same size (market capitalization) quintile as firm *i* and, within that quintile, the same stock price quintile as firm *i*. β_i and β_c are the betas of security *i* and control portfolio *c*, respectively. Abnormal returns over months (-120, -61) are computed using the beta estimate from this period. Abnormal returns over months (-60, 0) are computed using beta estimated from the period (-60, -3). Month 0 is the month of announcement of the acquisition. γ_{1t} is the empirical market risk premium computed as in Fama and Macbeth (1973).

Months around announcement		1930-59			1960-87		
t_1	t_2	CAAR(%)	t-stat.	n	CAAR(%)	t-stat.	n
-12	-3	2.04	1.28	130	-2.02	-2.70	917
-24	-3	0.97	0.82	124	-2.07	-1.80	897
-36	-3	0.05	0.49	117	-3.22	-2.34	879
-48	-3	3.59	1.10	112	-3.61	-2.22	859
-60	-3	2.70	0.60	108	-6.25	-3.34	839
-72	-3	0.08	0.47	104	-7.64	-3.16	820
-84	-3	3.33	0.83	102	-8.08	-3.38	802
-96	-3	7.19	1.15	100	-9.05	-3.54	785
-108	-3	7.66	1.22	98	-9.75	-3.55	768
-120	-3	4.62	1.26	96	-11.35	-3.85	751

Table 9

The 'Delay' in Completing Acquisitions following Poor Performance

Cumulative average abnormal returns (CAARs) of all targets over the period from 1930 to 1987. Abnormal returns are calculated in Panel A by the size and beta-adjustment approach of Table 3; in Panel B by the size, price and beta-adjustment approach of Table 4; and in Panel C by the industry-adjustment approach of Table 5. Month 0 is the month of announcement of the acquisition.

Months around announcement	Panel A <u>Size and beta adjustment</u>			Panel B <u>Size, price and beta adjustment</u>		
	CAAR(%)	t-stat	n	CAAR (%)	t-stat	n
-120 -109	-1.32	-0.95	685	-1.76	-1.38	685
-120 -97	-1.69	-1.06	700	-2.33	-1.32	700
-120 -85	-2.06	-1.30	718	-2.74	-1.49	718
-120 -73	-1.41	-1.28	735	-2.76	-1.72	735
-120 -61	-2.60	-1.76	751	-4.29	-2.27	751
-120 -49	-5.24	-2.77	768	-6.74	-3.13	768
-120 -37	-5.30	-2.58	787	-6.70	-2.88	787
-120 -25	-6.14	-2.79	808	-7.83	-3.14	808
-120 -13	-6.17	-2.61	829	-8.00	-2.96	829
-120 -3	-6.69	-2.65	847	-9.51	-3.32	847

Months around announcement	Panel C <u>Size and industry adjustment</u>		
	CAAR (%)	t-stat	n
-120 -109	-0.97	-0.70	691
-120 -97	-2.18	-0.98	710
-120 -85	-5.13	-2.02	730
-120 -73	-3.78	-1.42	746
-120 -61	-7.53	-2.46	762
-120 -49	-12.56	-3.72	780
-120 -37	-14.79	-4.06	800
-120 -25	-16.30	-4.12	821
-120 -13	-15.82	-3.83	843
-120 -3	-17.63	-3.63	860

Table 10

The 'Delay' in Acquisitions During 'Lenient' and 'Tight' Anti-trust Enforcement Periods

Cumulative average abnormal returns (CAARs) of targets of acquisitions announced during periods when anti-trust enforcement was relatively lenient (1942-45, 1964-67, and 1982-87) and periods when it was relatively tight (all other periods during 1930-87). Abnormal returns are calculated by the size, price and beta-adjustment approach of Table 4. Month 0 is the month of announcement of the acquisition.

Months around announcement	Panel A <u>Lenient Enforcement Periods</u>			Panel B <u>Tight Enforcement Periods</u>		
	CAAR(%)	t-stat	n	CAAR (%)	t-stat	n
-120 -109	-2.04	-0.62	324	-1.51	-1.27	360
-120 -97	-0.93	0.53	328	-3.53	-2.18	371
-120 -85	-0.52	0.24	336	-4.67	-2.15	382
-120 -73	-1.23	-0.45	343	-4.10	-1.86	391
-120 -61	-3.51	-1.14	349	-4.97	-1.99	401
-120 -49	-5.90	-1.95	356	-7.47	-2.41	411
-120 -37	-5.45	-1.62	364	-7.78	-2.36	422
-120 -25	-8.95	-2.27	373	-6.92	-2.16	434
-120 -13	-7.47	-1.80	382	-8.45	-2.31	447
-120 -3	-10.80	-2.48	390	-8.46	-2.21	457

Table 11

The 'Delay' in Acquisitions Announced During Merger Wave and Non-wave Periods

Cumulative average abnormal returns (CAARs) of targets of acquisitions announced during the merger-wave years (1967-69, and 1978-87) and non-wave years (all other years during 1930-87). Abnormal returns are calculated by the size, price and beta-adjustment approach of Table 4. Month 0 is the month of announcement of the acquisition.

Months around announcement	Panel A			Panel B		
	<u>Merger-wave Periods</u>			<u>Non-wave Periods</u>		
	CAAR(%)	t-stat	n	CAAR (%)	t-stat	n
-120 -109	-0.81	-0.61	448	-3.57	-1.52	236
-120 -97	-1.85	-0.79	458	-3.23	-1.16	241
-120 -85	-2.19	-0.76	470	-3.80	-1.52	248
-120 -73	-1.55	-0.61	479	-5.02	-2.11	255
-120 -61	-2.23	-0.73	489	-8.09	-2.89	262
-120 -49	-3.51	-0.98	499	-12.70	-4.00	268
-120 -37	-2.85	-0.60	511	-13.78	-4.10	276
-120 -25	-5.42	-1.23	523	-12.34	-3.68	284
-120 -13	-5.73	-1.26	535	-12.27	-3.32	293
-120 -3	-7.79	-1.76	546	-12.86	-3.26	301

Table 12

The 'Delay' in Acquiring Merger Targets in Regulated and Unregulated Industries

Cumulative average abnormal returns (CAARs) of acquisition targets in heavily regulated industries (public utilities, banking, finance, insurance and railroads) and all other industries. Abnormal returns are calculated by the size, price and beta-adjustment approach of Table 4. Month 0 is the month of announcement of the acquisition.

Months around announcement	Panel A <u>Regulated Industries</u>			Panel B <u>Unregulated Industries</u>		
	CAAR(%)	t-stat	n	CAAR (%)	t-stat	n
-120 -109	-9.72	-1.70	56	-1.05	-0.90	629
-120 -97	-9.21	-0.69	56	-1.71	-1.22	643
-120 -85	-15.03	-1.27	57	-1.67	-1.20	661
-120 -73	-14.75	-0.98	58	-1.72	-1.57	676
-120 -61	-15.34	-0.80	59	-3.32	-2.26	691
-120 -49	-19.56	-1.23	61	-5.62	-3.07	706
-120 -37	-19.24	-1.03	63	-5.61	-2.87	724
-120 -25	-20.19	-1.11	65	-6.75	-3.13	742
-120 -13	-22.76	-1.15	66	-6.71	-2.90	762
-120 -3	-20.59	-0.98	68	-8.55	-3.38	779