

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

## **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. Although we find insignificant abnormal returns over the four years prior to the acquisition announcement, a result consistent with the previous literature, the abnormal returns are significantly negative when a longer time period prior to acquisition is used. Our results suggest that takeovers discipline managers, but with a delay that may protect them through much of their normal tenures.

# **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 studies 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. 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 presumption among financial economists is that targets generally have poor management. For example, Brealey and Myers state in the next sentence, "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.

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 used in prior studies.

While we find insignificant abnormal returns over the four years prior to the acquisition announcement, a result consistent with the previous literature, the abnormal returns are significantly negative when a longer time period prior to acquisition is used. These results are robust to a number of specifications. Our findings support the inefficient management hypothesis. However, managers seem to be disciplined with a delay that may protect them for much of their normal tenures.

The structure of the paper is as follows. We review the literature in the next section. The data are described in section 3. Our empirical results are presented in section 4. The final section concludes the paper.

## **2. Review of the Literature**

### **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). Mandelker concludes (p.324), "Our results for the acquired firms are consistent with the hypothesis that mergers are a mechanism by which the market system replaces incompetent management." However, his results constitute only weak evidence in favor of the hypothesis. His Table 2 shows cumulative average residuals of only -3% over months (-40, -9) relative to the month of merger completion.<sup>1</sup> This appears to be an economically insignificant number. In addition, t-tests are not reported, so that statistical significance can not be assessed. Furthermore, the cumulative average residual would be closer to zero if a surrounding month, such as month -10 or -8, were selected instead of -9.

Ellert (1976) examines 311 mergers from 1950 to 1970 involving acquisitions of at least \$10 million. The abnormal return (calculated using the two-factor market model) of the target firm over months (-100, -49) relative to the acquisition is a statistically significant -9.5 percent. The abnormal return over months (-100,-8) is -11.7 percent, though no t-values are reported over this interval. 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

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<sup>1</sup>Since 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.

model) over months (-60, -13) relative to the month of the tender offer announcement. Abnormal returns are actually positive from month -12 to month -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 ( $\beta$ ), (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% between day -480 and day -60 relative to the merger announcement. This large negative abnormal return is consistent with 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. From month -48 to month -3 relative to the tender offer 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 cumulative industry-adjusted return is significantly negative. On this basis, the conclusions drawn depend upon the performance benchmark employed. On the one hand, if the relevant benchmark is the industry peer group of the target firm, the results are consistent with the view that takeovers are a mechanism for removing the top managers of poorly performing firms. On the other hand, if the market is used as the benchmark, the evidence suggests that managers are replaced in firms that are performing about as well as would be expected."

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.

Franks and Mayer (1995) 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 on size and industry. Results with alternative benchmarks are qualitatively similar. The authors state (p. 1), “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 over the previous four years,



where abnormal returns are calculated from the market model. 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... 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-ratio, and not the firm’s q-ratio relative to the industry, is a significant explanatory variable. This consistency is further weakened since Martin and McConnell 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 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.<sup>2</sup>

### **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. Of the articles referenced in section 2.1 examining abnormal stock price returns, only Ellert (1976) and Asquith (1983) show statistically significant underperformance for the average target. However, Hasbrouck (1985) does find that the q-ratio is significantly lower for target firms than for control firms.

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 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.<sup>3</sup> And, as mentioned above, the work of both Martin and McConnell 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

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<sup>2</sup>MSV (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.

<sup>3</sup>MSV's Table 4.3a indicates that acquired firms have lower q-ratios than does the full sample, but no significance tests are presented.

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 occurred in 1956 or later, and the New York Times Index (NYTI) for announcements that occurred prior to 1956.<sup>4</sup> 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.<sup>5</sup>

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 1 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

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<sup>4</sup>The WSJI was not published prior to 1956.

<sup>5</sup>The 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.

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 2 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 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. Results**

The purpose of this paper is to measure the long-run performance of target firms before their acquisition.

### **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 an 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,  $\epsilon_{it}$ , as:<sup>6</sup>

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

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  $i$ ;  $\beta_i$  and  $\beta_s$  are the beta of security  $i$  and the beta of the size control group, respectively. Abnormal returns,  $\epsilon_{it}$ , 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,  $\gamma_{1t}$ , is calculated according to the methodology of Fama and MacBeth (1973).<sup>7</sup>

The pre-acquisition abnormal returns with the above size and beta adjustment are presented in Table 3. Panel A shows short-run performance prior to the announcement. The table indicates performance of approximately 24% over months (-2, 0), where 0 is the month

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<sup>6</sup>This 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).

<sup>7</sup>The estimates of  $\gamma_1$  for periods subsequent to 1968, the last year in the Fama and MacBeth study, were kindly provided by Professor Richard Sloan.

of announcement, a result 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 0, since the large returns over months (-2, 0) 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 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 -2.63% and -1.2%, respectively.

#### **4.1.2. Adjustment for Size, Price and Beta**

While event studies 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:

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

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  $\beta_c$  is the beta of the control portfolio.

The pre-announcement performance of target firms using this control group is presented in Table 4. Panel A shows performance over months  $(-2, 0)$  relative to the announcement. The results in Panel A of Table 4 are quite similar to those in Panel A of Table 3.

Long-run pre-acquisition performance is presented in Panel B of the table. The CAARs in column 6 are somewhat more negative in Table 4 than in Table 3. 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 announcement. Third, a large part of the abnormal performance occurs in the fifth and sixth years prior to announcement.

### 4.1.3. Adjustment for 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:

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

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  $-120$  (relative to the announcement) 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 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 of Panel A in Table 3 and 4.

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 3 and 4. 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  $-17.63\%$  with an industry adjustment but only  $-6.69\%$  and  $-9.51\%$  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 3 and 4, 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 3, 4, and 5 provide a few basic results.<sup>8</sup> 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 -6.69% (size and beta adjustment) to -17.63% (size and industry adjustment). 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.

The results of Tables 3 through 5 suggest that changes in corporate control occur well after the market learns of poor performance. However, one can determine the extent of this delay more accurately by focussing on periods beginning with month -120 relative to the acquisition. Using this approach, Table 6 presents abnormal performance for our three different

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<sup>8</sup>While we employed a number of other methodologies as well, we do not report these results since they are qualitatively similar to those of Tables 3-5.

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 6 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.

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 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.

## **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 4.<sup>9</sup>

### **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, and tender offers are more likely than mergers to be hostile. However, if anything, the results suggest worse performance before mergers. The CAARs are generally

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<sup>9</sup>Similar results are obtained under the size and beta adjustment of Table 3 and the size and industry adjustment of Table 5.

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, none of the differences in CAARs between mergers and tender offers are statistically significant. Thus, the common belief that tender offers are more disciplinary than mergers is 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. 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, we examine the conjecture that poor performance is more likely to precede hostile 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).

## 5. 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 presumption among financial economists is that targets generally have poor management. 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 negative 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. 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 acquisitions.

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 6 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.

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**Table 1**

**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.

<b>Decade of Announcement</b>	<b>Number of</b>		<b>Total</b>
	<b>Mergers</b>	<b>Tender offers</b>	
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**

**Pre-acquisition Performance of All Targets Using Size and  $\beta$ -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:

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

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  $i$ .  $\beta_i$  and  $\beta_s$  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.  $\gamma_{1t}$  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-merger 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 4**

**Pre-acquisition Performance of All Targets Using  
Size, Price and  $\beta$ -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:

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

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, in the same stock price quintile as firm  $i$ .  $\beta_i$  and  $\beta_c$  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.  $\gamma_{1t}$  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-merger 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 5**

**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-merger 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 6****Pre-Acquisition Performance of All Targets**

The table presents abnormal stock returns of targets in acquisitions by merger or tender offer 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.

<b>Months around announcement</b>	<b>Panel A</b>			<b>Panel B</b>		
	<b><u>Size and beta adjustment</u></b>			<b><u>Size, price and beta adjustment</u></b>		
	<b>CAAR(%)</b>	<b>t-stat</b>	<b>n</b>	<b>CAAR (%)</b>	<b>t-stat</b>	<b>n</b>
-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

  

<b>Months around announcement</b>	<b>Panel C.</b>		
	<b><u>Size and industry adjustment</u></b>		
	<b>CAAR (%)</b>	<b>t-stat</b>	<b>n</b>
-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 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*.  $\beta_i$  and  $\beta_c$  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.  $\gamma_{1t}$  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*.  $\beta_i$  and  $\beta_c$  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.  $\gamma_{1t}$  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