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TIM LOUGHRAN and ANAND M. VIJH*

ABSTRACT

Using 947 acquisitions during 1970–1989, this article finds a relationship between the postacquisition returns and the mode of acquisition and form of payment. During a five-year period following the acquisition, on average, firms that complete stock mergers earn significantly negative excess returns of −25.0 percent whereas firms that complete cash tender offers earn significantly positive excess returns of 61.7 percent. Over the combined preacquisition and postacquisition period, target shareholders who hold on to the acquirer stock received as payment in stock mergers do not earn significantly positive excess returns. In the top quartile of target to acquirer size ratio, they earn negative excess returns.

CORPORATE ACQUISITIONS ARE IMPORTANT events. An examination of delistings from the Center for Research in Security Prices (CRSP) tapes shows that over half a trillion dollars worth of equity in publicly-traded firms was acquired by other publicly-traded firms during 1970–1989. Many researchers have addressed the question of wealth gains from acquisitions. They typically find three patterns: (i) target shareholders earn significantly positive abnormal returns from all acquisitions, (ii) acquiring shareholders earn little or no abnormal returns from tender offers, and (iii) acquiring shareholders earn negative abnormal returns from mergers.[1] The evidence is usually based on returns computed over a preacquisition period starting immediately before the announcement date and ending on or before the effective date. This assumes that prices fully adjust to the likely efficiency gains from acquisitions.

A few studies also examine the assumption of market efficiency by measuring abnormal returns after the acquisition effective date. These findings are mixed. Franks, Harris, and Titman (1991) find no evidence of significant abnormal returns over a three-year period after the last bid date. However,

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[1] See Dodd and Ruback (1977), Kummer and Hoffmeister (1978), Dodd (1980), Asquith (1983), Bradley, Desai, and Kim (1983), Jensen and Ruback (1983), and Malatesta (1983).

Agrawal, Jaffe, and Mandelker (1992) find that tender offers are followed by insignificant abnormal returns, but mergers are followed by significant abnormal returns of −10 percent over a five-year period after the effective date.[2]

We reexamine the postacquisition returns by using a sample of 947 firms delisted from the New York Stock Exchange (NYSE), the American Stock Exchange (AMEX), and Nasdaq during 1970–1989. Our study differs from previous studies in two important respects. First, the previous studies recognize that postacquisition abnormal returns are inconsistent with market efficiency. They also recognize that these excess returns imply that wealth gains from corporate acquisitions are overstated if measured simply over the preacquisition period. But they do not report the overall wealth gains by combining the preacquisition and postacquisition returns. The importance of this question from a public policy perspective can hardly be overstated. We examine this question in detail.

The second difference between the previous studies and our study lies in the computation of excess returns. The methodology of Franks, Harris, and Titman (1991) and Agrawal, Jaffe, and Mandelker (1992) may be considered equivalent to forming equally weighted portfolios of sample companies in event time or calendar time and rebalancing portfolios every month.[3] Monthly rebalanced returns may not be a good estimate of how a buy-and-hold strategy performs over five years. Reluctance to sell shares and incur capital gains taxes is often cited as a motive in stock mergers, which makes rebalancing a less likely description of the usual portfolio strategy in cases where the acquirer's stock is used for payment. A rebalancing strategy also incurs excessive transaction costs. Further, it transfers money from overperforming stocks to underperforming stocks on each rebalancing date, which may be of concern if the assumed overvaluation or undervaluation dissipates gradually over time. We therefore measure abnormal returns by the difference between five-year holding period returns of sample stocks and matching stocks (chosen to control for size and book-to-market effects). We also report abnormal returns realized by an annual rebalancing strategy.

We classify our sample based on the mode of acquisition (merger or tender offer) and the form of payment (stock or cash). Both variables have been examined in the context of wealth gains from acquisitions.[4] The mode of

[2] Other studies of postacquisition returns include Mandelker (1974), Langetieg (1978), Jensen and Ruback (1983), Loderer and Martin (1992), and Rau and Vermaelen (1996).

[3] More completely, Franks, Harris, and Titman (1991) measure abnormal returns by the intercept of a regression of monthly returns of sample stocks on various factors. Agrawal, Jaffe, and Mandelker (1992) measure abnormal returns by first calculating abnormal performance for individual stocks by using the Dimson and Marsh (1986) procedure, then averaging the abnormal performance across all firms in an event month, and finally adding the monthly performance over 60 months. Both procedures give equal weight to all firms included in any month.

[4] Most studies of preacquisition returns examine mergers and tender offers separately. Agrawal, Jaffe, and Mandelker (1992) find (but do not report) that both the mode of acquisition and the form of payment affect postacquisition returns.

acquisition may be related to the expected wealth gains resulting from operating synergies and the disciplining of target managers. Mergers are usually friendly deals that enjoy the cooperation of incumbent managers. Tender offers are made directly to target shareholders, often to overcome resistance from incumbent managers, and indicate greater confidence in the acquirer's ability to realize efficiency gains from the acquisition. Martin and McConnell (1991) document a large turnover of target managers during the two years following tender offers, which suggests that the acquirers in tender offers attempt to create wealth gains by removing inefficient managers.

The form of payment may also be related to the target managers' private information about their stock price. In a world where managers possess private information that shareholders do not, Myers and Majluf (1984) show that firms will issue stock only when it is overvalued. It follows that firms will prefer to pay cash if their stock is undervalued. However, the two variables are not orthogonal. For example, Martin (1996) shows that the form of payment is partly endogenous to the mode of acquisition. Mergers are more often financed with acquirer's stock whereas tender offers are predominantly cash financed. Martin (1996) also shows that stock acquirers have lower book-to-market ratios and a superior historical growth record, which raises the possibility that the acquirer's managers may become overly optimistic about their firm's growth opportunities.

We find that postacquisition returns of acquirer's stock are related to both the mode of acquisition and form of payment. In the overall sample of 947 cases, acquirers that make merger bids earn, on average, 15.9 percent less than matching firms whereas acquirers that make tender offers earn 43.0 percent more than matching firms during a five-year period after acquisition. Similarly, stock acquirers earn 24.2 percent less than matching firms whereas cash acquirers earn 18.5 percent more than matching firms. Bivariate tests show that the two variables act independently. Yet looking across subsets formed by both the mode of acquisition and form of payment, only stock mergers earn significantly negative excess returns of −25.0 percent and cash tender offers earn significantly positive excess returns of 61.7 percent. The cash mergers perform about the same as their matching firms, and the stock tender offers are too few to make a meaningful inference.

We emphasize that our tests of long-term returns are joint tests of market efficiency and wealth gains from mergers and tender offers. The large postacquisition returns are inconsistent with market efficiency. They suggest that markets systematically overestimate or underestimate the efficiency gains from acquisitions. They also suggest that markets underreact to information conveyed by whether stock or cash is used to pay for acquisitions. Our results are consistent with recent studies of long-term stock returns following stock issues and repurchases. Loughran and Ritter (1995) and Spiess and Affleck-Graves (1995) show that firms making seasoned stock issues underperform similar size matching firms for a period of five years. Stock repurchases are the opposite of stock issues, and Ikenberry, Lakonishok, and Vermaelen

(1995) show that firms buying back their stock overperform for a period of four years.

We examine whether our results on stock acquisitions are different from stock issues. Stock mergers earn lower returns than a sample of matching initial public offerings (IPOs) and seasoned equity offerings (SEOs), but the difference is insignificant. In both cases the managers may possess timing ability or the markets may overestimate their growth potential. A casual comparison of our results with Ikenberry, Lakonishok, and Vermaelen (1995) also shows that cash tender offers (nonissues of stock) earn bigger returns than stock repurchases (negative issues of stock), which outperform matching firms by an average of 12 percent. It is possible that some of the excess returns earned by cash tender offers may be the result of investors underestimating the possible gains from disciplinary actions associated with tender offers, such as the appointment of new managers.

We next examine the cumulative abnormal returns from holding the target stock from two days before the first announcement date to effective date and then rolling over the proceeds for another five years by investing in the acquirer's stock. On average, the target shareholders who follow this strategy do not earn significantly positive excess returns from stock acquisitions. Some of their earlier gains are reversed and what remains is not significant. In the two diagonal cases of stock mergers and cash tender offers, the target shareholders earn, on average, 14.9 and 138.3 percent more than matching stocks over the combined preacquisition and postacquisition period.

Bradley, Desai, and Kim (1983) show that the abnormal gains realized by target companies after the announcement of a tender offer disappear if the bid does not succeed and no subsequent bid materializes within five years. Asquith (1983) finds that the announcement of an unsuccessful merger bid generates an immediate increase in the price of target shares, but the entire gain disappears within a year after the termination of the bid. Our results suggest that in the case of stock mergers, the gains tend to dissipate within five years even if the acquisition succeeds.

In an effort to see whether the overall wealth gains to target shareholders can even become negative, we examine the influence of the relative size of target to acquirer firms within stock mergers. The relative size may proxy for the magnitude of anticipated efficiency gains from merger. We find that abnormal returns become smaller and eventually negative as the relative size of target to acquirer firm increases. In the top quartile of this ratio, the combined preacquisition and postacquisition abnormal returns average -47.4 percent. The median buy-and-hold and annually rebalanced abnormal returns equal -17.2 and -28.3 percent. At least in this subset of stocks, formed by ex ante selection criteria, the wealth gains to target shareholders are negative.

Section I describes the data and methodology. Section II presents our main results relating to the postacquisition excess returns of acquirers. Section III examines the aggregate wealth gains to target shareholders from acquisitions and Section IV concludes.

I. Data and Methodology

A. The Sample of Acquisitions

To identify the sample of acquisitions, we search the CRSP tapes for all NYSE, AMEX, and Nasdaq firms delisted during 1970–1989. CRSP identifies firms delisted by reason of acquisition with a delisting code between 200 and 203 and a last dividend payment code starting with 32, 37, or 38. The delisting date is the effective date of acquisition. We check the *Capital Adjustments Register* to identify the acquiring firm for each delisted firm. American Depository Receipts (ADRs), Real Estate Investment Trusts (REITs), and closed-end funds are excluded from our sample. Also excluded are cases in which the target or the acquirer stock was trading at less than three dollars on the effective date, which eliminates firms that are very small or in distress.

We search the *Wall Street Journal Index* to identify whether an acquisition was a merger or a tender offer. Following the guidelines suggested by Jensen and Ruback (1983), an acquisition is classified as a merger if some of the following characteristics were present: the tone was friendly, the target's managers were favorable, the board of directors and the shareholders voted and approved the deal.[5] An acquisition is classified as a tender offer if some of the following characteristics were present: the tone was aggressive, there was no shareholder meeting or approval, the word tender was used, a percentage of shares sought was mentioned (unlike mergers, tender offers may not be all or none type of deals). Sometimes characteristics of both merger and tender offers are present. For example, a deal may start out as a tender offer but end up as a merger. In such cases, we classify based on the final outcome. Sometimes the press reports are inadequate for any satisfactory classification, in which case we classify the mode of acquisition as ambiguous.

We obtain the payment terms from the *Capital Adjustments Register* and then divide our sample into three subsets based on the form of payment. The first subset is called stock payment and includes cases where only the acquirer's common stock was used to pay for an acquisition (for example, Raytheon Company paid 0.775 shares of common for each share of Beech Aircraft Corp. on February 28, 1980). The second subset is called cash payment and includes cases where only cash was used (for example, Allis-Chalmers Corp. paid $34 for each share of American Air Filter, Inc., on September 29, 1978). The third subset is called mixed payment and includes all other cases in which the payment terms were neither pure stock nor pure cash. In some cases both stock and cash were used (for example, Key Banks, Inc., paid 0.96 shares of common or $27 in cash, or a mixture of two, for each share of Alaska Pacific Bancorp. on July 1, 1985), and in other cases cash and senior securities were used (for example, Turner Broadcasting System, Inc., paid $20 cash plus one share of

[5] Jensen and Ruback (1983) remark: "Mergers are negotiated directly with target's managers and approved by the target's board of directors before going to a vote of target shareholders for approval. Tender offers are offers to buy shares made directly to target shareholders who decide individually whether to tender their shares for sale to the bidding firm."

Series A preferred stock for each share of MGM/UA Entertainment Company on March 25, 1986).

The first announcement dates are collected by scanning the *Wall Street Journal Index* for two years before the effective date. The net result is a sample of 947 acquisitions made by 639 firms.

B. Summary Statistics

Panel A of Table I reports the annual number and aggregate market value of target stock for acquisitions completed during 1970–1989. Our sample includes a total of 947 acquisitions with a market value of over half a trillion dollars. A noticeable trend is present in the data. In the early and mid 1970s, few acquisitions of NYSE, AMEX, or Nasdaq firms took place. For example, only 16 acquisitions occurred in 1975. During the late 1980s, the number of acquisitions increased to approximately 75 per year. Figure 1 plots the number of acquisitions and the aggregate dollar value in 1994 dollars. Both the number and dollar value of acquisitions generally increased over time during 1970–1989.

Panel A of Table I categorizes the sample by the mode of acquisition and form of payment. We find 788 mergers, 135 tender offers, and 24 ambiguous cases. The smaller percentage of tender offers is consistent with other studies, such as Agrawal, Jaffe, and Mandelker (1992) and Rau and Vermaelen (1996). There is some tendency for tender offers to be clustered in later years. We also find 405 stock payments, 314 cash payments, and 228 mixed payments. There is a similar tendency for cash payment cases to be clustered in later years.

Panel B of Table I shows more clearly that the mode of acquisition is correlated with the form of payment. The correlation is far from perfect, however. Almost half of all mergers are financed with stock and the remaining half are about evenly split between cash and mixed. Consistent with Martin (1996), the tender offers are predominantly cash financed. Almost five of six tender offers are financed with cash and the remaining one in six are split between stock and mixed.

C. Computation of Abnormal Returns

The selection of a proper benchmark is always problematic when examining long-term returns. Our article, in the spirit of Fama and French (1992), uses a matching procedure that adjusts for size (market value of equity) and book-to-market effects as the chosen benchmark for abnormal returns. Adjusting for size and book-to-market effects is important since acquisition samples are not distributed equally across the size and book-to-market spectrum. For example, Martin (1996) reports that stock payments are associated with low book-to-market ratios (growth firms) while cash payments are associated with high book-to-market ratios (value firms). Given their size and book-to-market characteristics, our matching procedure pairs acquirers with matching firms by their required returns on equity.

Table I

Number of Acquisitions by Calendar Year, Mode of Acquisition, and Form of Payment, 1970–1989

The sample consists of 947 U.S. operating firms delisted from the Center for Research in Security Prices (CRSP) tapes due to an acquisition. The acquiring firm must be listed on CRSP on the takeover date. There are three modes of acquisition: merger, tender offer, and ambiguous. An acquisition is categorized as ambiguous if press reports are inadequate for any satisfactory classification. There are three forms of payment for the acquisition: pure stock, pure cash, and mixed. The mixed payment subset includes all acquisitions in which payment terms are neither pure stock nor pure cash. The market capitalization values of the targets are as of the acquisition date in billions of 1994 dollars.

Panel A: Number of Acquisitions by Calendar Year

Year	Total Number of Acquisitions	Aggregate Dollar Value of All Acquisitions	Number of Mergers	Number of Tender Offers	Number of Ambiguous	Number of Stock	Number of Cash	Number of Mixed
1970	37	9.7	37	0	0	25	1	11
1971	27	8.5	24	1	2	19	3	5
1972	20	7.9	20	0	0	14	0	6
1973	32	7.6	31	0	1	23	4	5
1974	17	2.8	16	0	1	14	1	2
1975	16	4.0	16	0	0	8	4	4
1976	27	13.7	25	2	0	12	8	7
1977	50	16.8	40	10	0	25	13	12
1978	47	13.8	41	5	1	15	15	17
1979	53	23.2	41	12	0	14	17	22
1980	45	24.7	41	4	0	15	11	19
1981	46	37.7	36	10	0	14	19	13
1982	40	36.0	35	5	0	13	16	11
1983	41	24.5	32	9	0	16	10	15
1984	52	62.6	43	9	0	15	23	14
1985	78	62.1	59	18	1	28	35	15
1986	76	58.3	64	10	2	30	32	14
1987	71	27.7	62	4	5	34	23	14
1988	94	44.7	71	18	5	34	48	12
1989	78	53.9	54	18	6	37	31	10
Total	947	540.4	788	135	24	405	314	228

Panel B: Mode of Acquisition

Form of Payment	Merger	Tender Offer	Ambiguous	All
Stock	385	8	12	405
Cash	196	111	7	314
Mixed	207	16	5	228
All	788	135	24	947

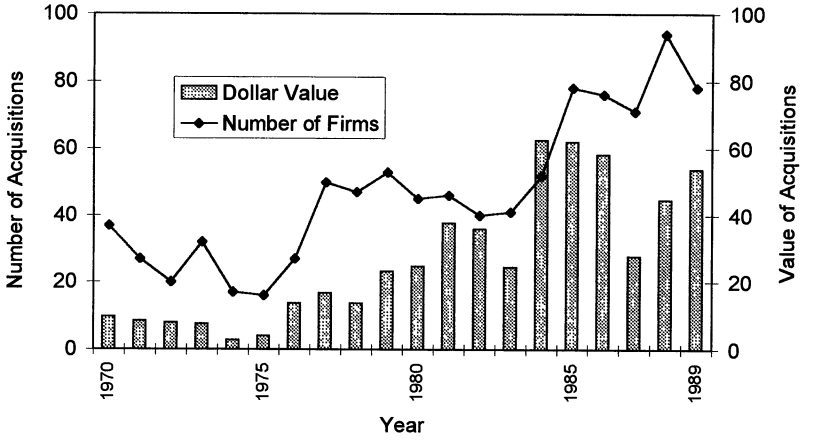

Figure 1. The number of acquisitions and dollar value of acquisitions in billions of 1994 dollars. The sample consists of 947 U.S. operating firms delisted from the CRSP tapes due to an acquisition. The acquiring operating firm must be listed on CRSP on the takeover date. The market capitalization values of the targets are on the acquisition date and are in billions of 1994 dollars.

Our potential matching universe includes all operating firms (excluding ADRs, closed-end funds, and REITs) that were listed on either the NYSE, AMEX, or Nasdaq exchanges for at least five calendar years.[6] In order to get regression coefficients that explain long-term returns, each year we run a regression of one-year buy-and-hold returns on the natural logarithm of size (market value as of the last day of December of the previous year) and the natural logarithm of book-to-market.[7] We use the size and book-to-market coefficients from the yearly regressions to form a function that ranks all firms according to their yearly required returns on equity (i.e., $F = b_0 + b_1 \times \text{size} + b_2 \times \text{book-to-market ratio}$).[8] Each year, from 1969 to 1989, all firms are ranked according to their F-value (required return on equity given their size and book-to-market ratio). Our matching procedure pairs the acquiring firms with adjacent control firms in terms of the required return on equity F-value.[9] Thus,

[6] A seasoning screen is not unusual in the literature. For example, Fama and French (1992) require two years on CRSP before entering their sample while Loughran and Ritter (1995) require five years on CRSP before entering their matching universe. Lakonishok, Shleifer, and Vishny (1994) require five years on the COMPUSTAT tapes before entering their sample universe.

[7] We start the year in July of year t to allow the book value (COMPUSTAT data item 60) from the previous year to be available. Thus, the one-year buy-and-hold returns are from July 1 of year t to June 30 of year $t + 1$.

[8] We do not include betas in regressions as Fama and French (1992) show that they have no explanatory power in the cross-section of expected stock returns. The estimation of betas is also subject to many errors. For example, Vijh (1994) shows that the measured betas of the same stock depend to a large extent on whether it is included in or excluded from the S&P 500 index.

[9] For this purpose, the size of acquiring firm is computed with the stock price and number of shares outstanding on the effective date plus one day.

our pairing mechanism controls for the size and book-to-market patterns present during this time period.[10]

For acquiring firms missing COMPUSTAT book values, we select matching firms solely on the basis of size (market value of equity). Using the effective date plus one day to determine the market value of the acquirers, the acquiring firm is paired with a matching firm from the NYSE/AMEX/Nasdaq matching pool with the closest market value.

No look-ahead bias is present in our matching procedure. The five-year buy-and-hold returns are calculated for the acquirers and matching firms over an identical time interval starting on the effective date plus one day. If an acquirer is delisted from CRSP prior to the five-year anniversary of the acquisition, both the acquirer and matching firm buy-and-hold returns stop on that date. If a matching firm is delisted before the delisting date of acquirer, the next firm from the NYSE/AMEX/Nasdaq sample with the closest required return on equity (or market value if no book value is present) is chosen as the additional matching firm. Returns for the additional matching firms are spliced in on a point forward basis. Only 18 percent of our acquiring sample needs a second matching firm.

II. Main Results

A. The Mode of Acquisition, Form of Payment, and Postacquisition Returns

We start our analysis by examining the postacquisition returns as a function of both the mode of acquisition and form of payment. We report the raw returns for the sample and matching firms and the following measures of excess or abnormal returns: (i) the average difference between buy-and-hold returns over the entire five-year period for acquirer and matching firms, (ii) the median difference between five-year returns for acquirer and matching firms, and (iii) the difference between five-year returns on portfolios of acquirer and matching firms which are rebalanced at the beginning of each year to give equal weights to each firm (also called excess rebalanced returns).

Table II shows that the overall sample of 947 acquisitions has an average five-year buy-and-hold return of 88.2 percent compared to 94.7 percent for their matching firms. The difference equals -6.5 percent (t-statistic -0.96).[11] The 788 mergers earn an average buy-and-hold return of 81.2 percent compared to 97.1 percent for their matching firms. The average return difference between the mergers and matching firms is -15.9 percent (t-statistic -2.36). The 135 tender offers have an average buy-and-hold return of 131.7 percent compared to 88.7 percent for their matching firms. The average return differ-

[10] We check our results by controlling for size and book-to-market effects in the spirit of Barber and Lyon (1996). Each sample firm is paired with a matching firm that had the closest market value within the appropriate book-to-market quintile. The results are similar.

[11] As argued by Barber and Lyon (1996), the t-statistics in this article may be understated due to the truncation of many holding periods to less than five years. The right skewness of longer period returns may also weaken the t-statistics.

Table II

Acquirer Returns Sorted by the Mode of Acquisition and Form of Payment for All Cases, 1970–1989

The sample consists of 947 U.S. operating firms delisted from the Center for Research in Security Prices (CRSP) tapes due to an acquisition. The acquiring firm must be listed on CRSP on the takeover date. There are three modes of acquisition: merger, tender offer, and ambiguous. An acquisition is categorized as ambiguous if press reports are inadequate for any satisfactory classification. There are three forms of payment for the acquisition: pure stock, pure cash, and mixed. The mixed payment subset includes all acquisitions in which payment terms are neither pure stock nor pure cash. Starting on the day after the acquisition date, a buy-and-hold return is calculated for both the acquirer and its matching firm (selected on the basis of market value of equity and book-to-market ratio) for up to five years after the acquisition. This is reported in lines 2 and 3. The next three lines report different measures of excess return. Line 4 reports the difference between average buy-and-hold returns over the entire five-year period for acquirer and matching firms. Line 5 reports the median difference between five-year returns for acquirer and matching firms. Line 6 reports the difference between five-year returns on portfolios of acquirer and matching firms which are rebalanced at the beginning of each year to give equal weight to each firm. Numbers in parentheses represent the *t*-statistics.

Form of Payment	Statistic	Mode of Acquisition: Mergers	Tender Offers	Ambiguous	All Acquisitions
Stock	1. Sample size	385	8	12	405
	2. Acquirer return	61.9	4.8	68.5	61.0
	3. Matching return	86.9	40.9	57.4	85.2
	4. Difference 2–3	**−25.0 (−2.94)†**	**−36.1 (−1.18)**	**11.1 (0.18)**	**−24.2 (−2.92)**
	5. Median difference 2–3	−11.9	−44.1	−64.1	−12.4
	6. Rebalanced returns	−26.5	−55.8	−3.0	−26.9
Cash	1. Sample size	196	111	7	314
	2. Acquirer return	97.7	145.6	32.7	113.2
	3. Matching return	102.6	83.9	47.0	94.7
	4. Difference 2–3	**−4.9 (−0.32)**	**61.7 (2.03)‡**	**−14.3 (−0.59)**	**18.5 (1.27)**
	5. Median difference 2–3	−2.3	53.1	6.8	12.7
	6. Rebalanced returns	−15.4	57.9	−82.4	8.4
Mixed	1. Sample size	207	16	5	228
	2. Acquirer return	101.4	99.4	137.6	102.1
	3. Matching return	110.7	145.4	44.7	111.7
	4. Difference 2–3	**−9.3 (−0.65)**	**−46.0 (−1.02)**	**92.9 (0.94)**	**−9.6 (−0.72)**
	5. Median difference 2–3	−1.7	−68.1	12.9	−2.0
	6. Rebalanced returns	−11.1	−62.6	2.7	−14.7
All	1. Sample size	788	135	24	947
	2. Acquirer return	81.2	131.7	72.5	88.2
	3. Matching return	97.1	88.7	51.7	94.7
	4. Difference 2–3	**−15.9 (−2.36)**	**43.0 (1.67)**	**20.8 (0.51)**	**−6.5 (−0.96)**
	5. Median difference 2–3	−7.5	29.4	−26.0	−4.1
	6. Rebalanced returns	−19.9	36.1	−31.8	−12.3

† The stock mergers earn average annual excess returns of −4.9, −8.0, −4.2, 1.8, and −0.5 percent during year 1 to year 5 (*t*-statistics −1.84, −3.25, −1.63, 0.67, and −0.19).

‡ The cash tender offers earn average annual excess returns of 15.2, 7.0, 6.2, −3.7, and 7.5 percent during year 1 to year 5 (*t*-statistics 2.21, 1.44, 0.99, −0.77, and 1.89).

ence between tender offers and matching firms is 43.0 percent (t-statistic 1.67). The 24 ambiguous cases show no strong pattern of abnormal returns.

The univariate evidence on mode of acquisition suggests that mergers underperform matching firms whereas tender offers outperform matching firms. The average return differences equal −15.9 and 43.0 percent, the median return differences equal −7.5 and 29.4 percent, and the rebalanced return differences equal −19.9 and 36.1 percent.

Mergers are usually friendly to the target managers, but our evidence suggests that, on average, they are not in the best interests of shareholders. Tender offers are typically hostile to the target managers, but seem to benefit shareholders. Martin and McConnell (1991) point out that operational synergies and the disciplining of target managers are the two broad explanations of wealth gains from mergers. They document that tender offers are followed by a 42 percent turnover of top manager in the first year and 19 percent turnover in the second year (as compared with 10 percent during any of the five years before acquisition). Our evidence on postacquisition returns suggests that the disciplining of target managers may affect the shareholder wealth gains from acquisitions.

Table II also shows the five-year postacquisition returns for acquirers and their matching firms categorized by the form of payment. Stock acquirers have an average return difference of −24.2 percent (t-statistic −2.92) compared to 18.5 percent (t-statistic 1.27) for cash acquirers. The median return differences equal −12.4 and 12.7 percent and the excess rebalanced returns equal −26.9 and 8.4 percent. The 228 cases of mixed payment have an average return difference of −9.6 percent (t-statistic −0.72).

The weak performance of stock acquirers and the strong performance of cash acquirers is consistent with a combination of the Myers and Majluf (1984) asymmetric information hypothesis and the market underreaction hypothesis. The managers of acquiring firms maximize the welfare of their existing shareholders by paying with stock when their stock is likely to be overvalued and by paying with cash when their stock is likely to be undervalued. If the market underreacts to the news conveyed by the announcement of payment terms, then a large part of the presumed overvaluation or undervaluation could show up as postacquisition abnormal returns.

Despite significant evidence in favor of the asymmetric information hypothesis in the context of stock issues and repurchases, we would emphasize that this is not the only plausible explanation of our results related to the form of payment. First, the form of payment is partly endogenous to the mode of acquisition, which may be the real driving force behind the results. Second, stock acquirers tend to be growth firms, hence it is possible that both the managers and the market were overly optimistic about the firm's growth potential. Third, as discussed below, the positive excess returns of cash acquirers are confined to cash tender offers and are negative but insignificant for cash mergers and ambiguous cases.

Table II shows that the 385 stock mergers earn an average excess return of −25.0 percent whereas the 111 cash tender offers earn an average excess

return of 61.7 percent (t-statistics −2.94 and 2.03). The median return differences and the excess rebalanced returns show a similar trend. Looking across all subsets formed by the mode of acquisition and form of payment, stock mergers and cash tender offers are also the only subsets for which the excess returns are significant. The 196 cash mergers earn insignificant excess returns of −4.9 percent and the 8 cases of stock tender offer are too few to make an inference. Note that our hypotheses make unambiguous predictions for the sign of excess returns in only the two diagonal cases of stock mergers and cash tender offers (mergers and stock payment both indicate negative returns and tender offers and cash payments both indicate positive returns).

A question arises as to why we use a long window, such as five years, to measure excess returns. We are not aware of any model that predicts how long it should take for possible undervaluation or overvaluation effects to disappear.[12] However, Loughran and Ritter (1995) and Spiess and Affleck-Graves (1995) use a five-year window to measure excess returns after equity issues. Besides, the effect of restructuring decisions related to the appointment of new managers, combining operations of both companies, and pursuing new investment opportunities should take a few years. An examination of the annual returns provides some evidence in favor of using a longer window. For example, Table II mentions that the 111 cash tender offers earn average annual excess returns of 15.2, 7.0, 6.2, −3.7, and 7.5 percent during years 1 to 5 (t-statistics 2.21, 1.44, 0.99, −0.77, and 1.89). The excess return during the fifth year after the acquisition is quite significant.

B. Subset of Nonoverlapping Acquisitions

In our sample, 214 firms acquire more than one target during any five-year period. To examine the independence of our findings, Table III reports the results after removing the overlapping cases as well as ambiguous mode of acquisition and mixed form of payment cases. If an acquisition occurs within five years of a previously included acquisition by the same firm, then we remove the later observation. No look ahead bias is present in this restriction.

The empirical findings of Tables II and III are quite similar. Table III reports an average return difference between acquiring firms and their matching firms of −14.2 percent (t-statistic −1.69) for the 434 mergers and 61.3 percent (t-statistic 1.86) for the 100 tender offers. The 300 stock acquirers have a return difference of −24.0 percent (t-statistic −2.67) compared to 30.5 percent (t-statistic 1.73) for the 234 cash acquirers. Looking across the diagonal cases, the 292 stock mergers have an average return difference of −23.6 percent (t-statistic −2.57) and the 92 cash tender offers have an average return

[12] The only direct empirical evidence on this issue is provided by Healy and Palepu (1995). In a case study of CUC International, they argue that managers face considerable difficulty in communicating their private valuation to the stock market. It was not until CUC made accounting changes, leverage recapitalization, accelerated debt payments, and a stock repurchase, spread over a period of 16 months, that the market was convinced of higher stock value. Their study suggests that excess returns should be measured over at least 16 months (and possibly more).

Table III

Acquirer Returns Sorted by the Mode of Acquisition and Form of Payment for Nonoverlapping Cases, 1970–1989

This table includes the 534 firms that are a subset of the overall sample of 947 firms and satisfy the following additional criteria. 1. Whether the acquisition was a merger or a tender offer can be unambiguously identified from the *Wall Street Journal Index*. 2. The payment terms were either pure stock or pure cash. 3. Overlapping cases are removed (i.e., if an acquisition occurred within five years of a previously included acquisition by the same firm, then the latter observation is excluded). Starting on the day after the acquisition date, a buy-and-hold return is calculated for both the acquirer and its matching firm (selected on the basis of market value of equity and book-to-market ratio) for up to five years after the acquisition. This is reported in lines 2 and 3. The next three lines report different measures of excess return. Line 4 reports the difference between average buy-and-hold returns over the entire five-year period for acquirer and matching firms. Line 5 reports the median difference between five-year returns for acquirer and matching firms. Line 6 reports the difference between five-year returns on portfolios of acquirer and matching firms which are rebalanced at the beginning of each year to give equal weights to each firm. Numbers in parentheses represent the *t*-statistics.

		Mode of Acquisition		
Form of Payment	Statistic	Mergers	Tender Offers	All Acquisitions
Stock	1. Sample size	292	8	300
	2. Acquirer return	60.4	4.8	58.9
	3. Matching return	84.0	40.9	82.9
	4. Difference 2–3	**−23.6 (−2.57)**	**−36.1 (−1.18)**	**−24.0 (−2.67)**
	5. Median difference 2–3	−12.3	−44.1	−12.4
	6. Rebalanced returns	−28.2	−55.7	−29.4
Cash	1. Sample size	142	92	234
	2. Acquirer return	103.1	151.6	122.1
	3. Matching return	98.0	81.8	91.6
	4. Difference 2–3	**5.1 (0.29)**	**69.8 (1.96)**	**30.5 (1.73)**
	5. Median difference 2–3	−5.1	56.8	21.5
	6. Rebalanced returns	−6.6	60.6	20.8
All	1. Sample size	434	100	534
	2. Acquirer return	74.4	139.8	86.6
	3. Matching return	88.6	78.5	86.7
	4. Difference 2–3	**−14.2 (−1.69)**	**61.3 (1.86)**	**−0.1 (−0.01)**
	5. Median difference 2–3	−10.4	47.7	4.4
	6. Rebalanced returns	−21.9	48.9	−8.9

difference of 69.8 percent (*t*-statistic 1.96). Each figure is significant at the 10 percent level in two tailed tests, or better. For all relevant subsets, the median return difference and the rebalanced excess returns exhibit the same pattern as the average return difference. The postacquisition returns of acquirer's stock appear to be related to both the mode of acquisition and form of payment.[13,14]

[13] We also test whether our results hold true using two other procedures of removing overlapping observations. The first procedure includes only firms that did not make any additional

In the remainder of this article, we report the results for only one acquisition per five years per firm. We also remove acquisitions for which we were unable to determine the mode of acquisition and all mixed forms of payment. However, our results are quite similar if we repeat our tests with the aggregate sample of all acquisitions.

Table III does not clearly show whether the mode of acquisition and the form of payment are significant determinants of postacquisition returns in the presence of each other. Further, it does not report the statistical significance of the difference between merger and tender offer excess returns (or the stock and cash acquirer excess returns). Using the sample of 534 nonoverlapping acquisitions, we test for both effects with regression analysis in Table IV. In each regression, the dependent variable is the postacquisition excess return. The independent variables are a tender offer dummy (1 for tender offers and 0 for mergers), a cash payment dummy (1 for cash payment and 0 for stock payment), and 19 calendar year dummy variables (one for each year of acquisition from 1970 to 1988).

Panel A of Table IV shows that a regression with the tender offer dummy as an explanatory variable has a coefficient of 70.0 percent (t-statistic 2.83). Similarly, a regression with the cash payment dummy as an explanatory variable has a coefficient of 50.8 percent (t-statistic 2.52). The third regression includes both tender offer and cash payment dummy variables. The tender offer dummy has a coefficient of 52.7 percent while the cash payment dummy has a coefficient of 32.0 percent (with t-statistics of 1.91 and 1.43). The calendar year dummy variables for all regressions are insignificant at conventional levels and are not reported.

Panel B of Table IV shows that our results are quite similar if we exclude the smaller acquirers in our sample (defined as firms with a market value of less than $250 million in 1994 dollars). Since our sample consists of mainly large firms, this restriction excludes less than a fourth of all observations. In the remaining sample, the tender offer dummy becomes somewhat more significant whereas the cash payment dummy becomes somewhat less significant.

C. The Postacquisition Returns and the Equity Issuance Puzzle

Stock acquisitions can be viewed as a combination of two events: first, a stock issue, and, second, a merger or tender offer. In view of the well-documented new issues puzzle, this raises the question of whether stock acquirers perform better or worse than other issuers of stock. To test this, we match each sample acquiring firm with a firm from the Loughran and Ritter (1995) dataset of IPOs and SEOs that satisfies the following criteria: (i) the IPO/SEO match-

acquisitions within the next five years. The second procedure includes only firms that did not make any acquisitions within the last five or the next five years. The evidence in either case is similar to Table III. However, both of these procedures suffer from a look-ahead bias and may not be descriptive of implementable trading strategies.

[14] Our results are similar if we calculate value-weighted average excess returns instead of equally weighted average excess returns as suggested by Brav and Gompers (1997).

Table IV

Regression Analysis of Postacquisition Excess Returns on the Mode of Acquisition and Form of Payment, 1970–1989

This table includes the 534 firms that are a subset of the overall sample of 947 firms and satisfy the following additional criteria. 1. Whether the acquisition was a merger or a tender offer can be unambiguously identified from the *Wall Street Journal Index*. 2. The payment terms were either pure cash or pure stock. 3. Overlapping cases are removed (i.e., if an acquisition occurred within less than five years of a previously included acquisition by the same firm, then the latter observation is excluded). We compute buy-and-hold returns over the five years following the effective date for the acquiring firm and a matching firm that controls for the size and book-to-market effects. The excess returns reported below are the difference between the former and the latter cases. The tender offer dummy equals 0 if the target was acquired in a merger and 1 if acquired in a tender offer. The cash payment dummy equals 0 if the acquirer paid in stock and 1 if paid in cash. In each regression, there are 19 calendar year dummy variables, one for each year of acquisition from 1970 to 1988. For example, regression 3 has the following specification:

$$\text{Post-acquisition excess return}_i = \text{Intercept} + b_1 \times \text{Tender offer dummy}_i + b_2 \times \text{Cash payment dummy}_i + \sum_{j=1970}^{1988} b_j \times \text{Calendar year dummy}_t + e_t$$

The calendar year dummy variables for all regressions are insignificant at conventional levels and are not reported. Numbers in parentheses represent t-statistics.

	Dependent Variable: Postacquisition Excess Return		
Independent Variable	1	2	3
Panel A: All Firms (N = 534)			
Intercept	0.1 (0.01)	0.9 (0.03)	−9.2 (−0.26)
Tender offer dummy	70.0 (2.83)		52.7 (1.91)
Cash payment dummy		50.8 (2.52)	32.0 (1.43)
Panel B: All Firms Above $250 Million in 1994 Dollars (N = 413)			
Intercept	−7.3 (−0.19)	−2.2 (−0.06)	−12.7 (−0.33)
Tender offer dummy	95.7 (3.44)		86.4 (2.79)
Cash payment dummy		46.9 (2.11)	16.8 (0.68)

ing firm issued new equity to the public some time during the preceding two years before the acquisition effective date, (ii) the IPO/SEO matching firm did not make an acquisition during the five years before stock issue, and (iii) the IPO/SEO matching firm has the closest F-value (which controls for the size and book-to-market effects) to the sample firm. As before, in cases where the book value of an acquiring firm is not available we match by the firm with the closest market value.[15]

[15] The choice of a two-year window for matching IPO/SEO firms becomes necessary as there are few equity-issuing firms, especially in the mid-1970s, of size comparable with the typical acquiring firm.

Table V

Acquirer Versus Equity Issuer (IPO/SEO) Returns Sorted by the Mode of Acquisition and Form of Payment, 1970–1989

This table includes the 534 firms that are a subset of the overall sample of 947 firms and satisfy the following additional criteria. 1. Whether the acquisition was a merger or a tender offer can be unambiguously identified from the *Wall Street Journal Index*. 2. The payment terms were either pure stock or pure cash. 3. Overlapping cases are removed (i.e., if an acquisition occurred within five years of a previously included acquisition by the same firm, then the latter observation is excluded). The matching firms in this table are equity issuers who made an initial public offering (IPO) or a seasoned equity offering (SEO), but did not make an acquisition of another public company during the past five years. The matching firms are chosen to control for size and book-to-market effects. Starting on the day after the acquisition date, a buy-and-hold return is calculated for both the acquirer and equity issuer firms for up to five years after the acquisition. This is reported in lines 2 and 3. The next three lines report different measures of excess return. Line 4 reports the difference between average buy-and-hold returns over the entire five-year period for acquirers and equity issuers. Line 5 reports the median difference between five-year returns for acquirer and equity issuer firms. Line 6 reports the difference between five-year returns on portfolios of acquirer and equity issuer firms which are rebalanced at the beginning of each year to give equal weight to each firm. Numbers in parentheses represent the *t*-statistics.

Form of Payment	Statistic	Mode of Acquisition: Mergers		Tender Offers		All Acquisitions	
Stock	1. Sample size	292		8		300	
	2. Acquirer return	60.4		4.8		58.9	
	3. Equity issuer return	66.3		66.0		66.3	
	4. Difference 2–3	**−5.9**	**(−0.55)**	**−61.2**	**(−0.82)**	**−7.4**	**(−0.69)**
	5. Median difference 2–3	12.5		11.5		12.5	
	6. Rebalanced returns	7.3		−22.5		6.5	
Cash	1. Sample size	142		92		234	
	2. Acquirer return	103.1		151.6		122.1	
	3. Equity issuer return	69.2		85.2		75.5	
	4. Difference 2–3	**33.9**	**(1.93)**	**66.4**	**(1.94)**	**46.7**	**(2.72)**
	5. Median difference 2–3	22.4		7.2		20.2	
	6. Rebalanced returns	31.8		28.0		30.7	
All	1. Sample size	434		100		534	
	2. Acquirer return	74.4		139.8		86.6	
	3. Equity issuer return	67.2		83.6		70.3	
	4. Difference 2–3	**7.1**	**(0.77)**	**56.2**	**(1.75)**	**16.3**	**(1.69)**
	5. Median difference 2–3	15.2		8.6		15.1	
	6. Rebalanced returns	15.1		22.2		16.3	

Table V shows that the average return difference between all 300 stock acquirers and IPO/SEO matching firms equals −7.4 percent (*t*-statistic −0.69). The corresponding figure for 292 stock mergers is −5.9 percent (*t*-statistic −0.55). We infer that stock mergers were just as poor performers as firms that issued stock for other reasons. This evidence is consistent with our belief that the form of payment is important in postacquisition returns. However, since the difference between stock merger and IPO/SEO returns is statistically

insignificant, Table V by itself does not provide incremental evidence on the importance of the mode of acquisition.

D. The Confounding Leverage Effects and Postacquisition Returns

Acquisitions can lead to changes in the debt-to-equity ratios of sample firms. This is best explained by an example. Suppose the target has debt and equity valued at \$50 and \$100 million and the acquirer has debt and equity valued at \$200 and \$700 million. In a stock acquisition, the acquirer may assume the target's debt and substitute its own stock for the target stock. The combined entity would have debt and equity valued at \$250 and \$800 million. Because either the target or the acquirer may have the greater debt-to-equity ratio before the acquisition, on average, there is no reason to believe that stock acquisitions would systematically increase or decrease the leverage of acquirer firms. This may not be true of cash acquisitions. In a cash acquisition, the acquirer may assume additional debt of \$100 million to replace the target stock. The combined entity would then have debt and equity valued at \$350 and \$700 million. This is perhaps the maximum increase in leverage for the given values, since many cash acquirers may use internally generated funds or other sources of financing. In computing excess returns, the picture is further complicated by whether the cash acquirers had previously higher or lower debt-to-equity ratios than matching firms and by whether they subsequently have higher or lower operating leverage.

We test for this influence by forming subsets of cash acquirers based on whether their combined debt-to-equity ratio (following the above example) was smaller or greater than the corresponding value for matching firms. The market value of debt is proxied by the book value of long-term debt (COMPUSTAT item 9) as of the last fiscal year end and the market value of equity is calculated by the stock price prevailing and the number of shares outstanding just before the acquisition effective date.

We find no significant difference between the performance of cash acquirers with higher or lower debt-to-equity ratios than the matching firms. The 58 cash acquirers with debt-to-equity ratios lower than their matching firms earn abnormal returns of 23.0 percent (t-statistic 0.98) whereas the 126 cash acquirers with debt-to-equity ratios higher than their matching firms earn abnormal returns of 35.3 percent (t-statistic 1.27). The COMPUSTAT data are unavailable for the acquirer or matching firm in the remaining 50 cash acquisitions. Furthermore, the leverage effect works in opposite directions across the two subsets of cash mergers and cash tender offers (in unreported results). Thus we find no evidence to suggest that our basic results for cash acquirers are confounded by the changes in debt-to-equity ratios.

III. Reexamining the Wealth Gains of Target Shareholders from Corporate Acquisitions

Do long-term target shareholders benefit from corporate acquisitions? The importance of this question can be understood by the vast published research

in this area. By and large, researchers unanimously agree that target shareholders gain from corporate acquisitions. Jensen and Ruback (1983) summarize the results of thirteen studies that show the target shareholders are offered a premium over the prevailing market price of stock. They document average abnormal returns during the month or two surrounding successful tender offers of 29.1 percent. The average one-month return for merger offers is 15.9 percent. In a sample of 151 mergers, Dodd (1980) finds that the target shareholders do not vote against the merger proposal even once. We do not know of any study that documents that acquisitions are not in the interests of target shareholders.

Bradley, Desai, and Kim (1983) examine the source of wealth gains in tender offers. They document that excess returns to target stock disappear within five years if the current bid fails and no subsequent bid materializes and succeeds. If acquisitions by tender offers were only the result of the acquirer having discovered superior information about the true value of the target's resources, then the abnormal returns should have been permanent. It follows that acquisitions by tender offers are attempts to create shareholder wealth by reasons that require the completion of tender offer. The literature seems to accept operational synergies and the disciplining of target managers as two such reasons. Asquith (1983) provides similar evidence on the preacquisition returns of mergers.

Whether the wealth gains materialize is another matter. A few cautious opinions are expressed by authors who investigate the postacquisition returns. Jensen and Ruback (1983) remark: "These post-outcome negative abnormal returns are unsettling because they are inconsistent with market efficiency and suggest that changes in stock prices during takeovers overestimate the future efficiency gains from mergers." In view of the evidence on postacquisition returns in this article and others, it becomes necessary to reexamine the aggregate wealth gains from acquisitions. Perhaps the negative postacquisition returns can undo the preacquisition returns of stock mergers. This would be important information for the investing public in deciding whether to hold on to acquirer shares received as payment.

We do not know of any study that explicitly measures the cumulative wealth gains to long-term buy-and-hold shareholders, who, for example, hold target shares from before the announcement date to five years after the effective date. There should be many such shareholders in stock acquisitions as this arrangement defers capital gains taxes and transaction costs. For reasons previously mentioned, the sum of monthly rebalanced returns in the preacquisition and postacquisition periods may not be a good estimate of the wealth gains experienced by long-term shareholders. Of course, there is no tax reason for target shareholders in cash acquisitions to hold the acquirer shares after acquisition (something that would require a separate transaction). But, for the sake of completeness, we report the cumulative returns to target shareholders who follow a rollover strategy in cash acquisitions.

In 516 cases of the total 534 nonoverlapping cases, the first announcement date of acquisition could be identified from the *Wall Street Journal Index*. In

the remaining 18 cases, there was either no mention of acquisition or just one final report of completion. Table VI presents the buy-and-hold abnormal returns to target shareholders over three periods spanning, from AD − 2 days to ED, from ED + 1 day to ED + 5 years, and from AD − 2 days to ED + 5 years. AD denotes the publication date of first announcement and ED denotes the effective date. The abnormal returns are computed by the difference between the target or acquiring firm returns and the matching firm returns. Two different size and book-to-market based matching firms are used over AD − 2 days to ED and over ED + 1 day to ED + 5 years. To compute the cumulative buy-and-hold abnormal returns from AD − 2 days to ED + 5 years, the proceeds are rolled over from the target firm into the acquiring firm, and from the first matching firm into the second matching firm on ED. All tax considerations are ignored.[16]

Table VI shows that for the 228 cash acquisitions, on average, the buy-and-hold shareholders earn abnormal returns of 26.1 percent during the preacquisition period and 29.6 percent during the postacquisition period. The cumulative preacquisition and postacquisition buy-and-hold returns average a significant 90.1 percent (median 57.6 percent, rebalanced 71.7 percent). In contrast, the buy-and-hold shareholders in stock acquisitions do not come out ahead. For all 288 stock acquisitions, regardless of merger or tender offer, the preacquisition and postacquisition buy-and-hold excess return average 25.1 and −24.3 percent. The cumulative excess return average an insignificant 14.5 percent (median 25.5 percent, rebalanced 15.8 percent). Together, these results have an interesting implication. The target shareholders who receive acquirer stock in exchange for their holding should sell out for cash when they receive that stock. Shareholders who receive cash in exchange for their holding should go to the market and buy the acquirer's stock.

Looking across the subsets of mergers and tender offers in Table VI, stock mergers earn cumulative returns of 14.9 percent, cash mergers earn 59.2 percent, and cash tender offers earn 138.3 percent (t-statistics 1.23, 2.45, and 3.09). Once again, we find that stock mergers have the worst returns and cash tender offers have the best returns.

Table VII and Figure 2 show the buy-and-hold returns over different holding periods starting with the first announcement date. By the effective date, the performance of target shareholders from all acquisitions is about the same, regardless of the mode of acquisition or the form of payment. The evidence changes considerably after the effective date. Panel A shows that the excess returns of buy-and-hold shareholders from all mergers remain about where they were on the effective date whereas the excess returns from all tender offers increase from 24.5 percent on the effective date to 48.4 percent by the

[16] Unless the marginal investor is tax-exempt, taxes could understate the returns from stock acquisitions in comparison with cash acquisitions. The difference arises because the capital-gains taxes on the accrued gain are deferred until the new shares are sold in stock acquisitions, but are immediately payable in cash acquisitions. Of course, some acquisitions may not result in any capital gains.

Table VI

Cumulative Excess Returns to Long-Term Target Shareholders over the Combined Announcement and Postacquisition Periods, 1970–1989

This table includes the 516 firms that are a subset of the overall sample of 947 firms and satisfy the following additional criteria. 1. Whether the acquisition was a merger or a tender offer can be unambiguously identified from the *Wall Street Journal Index*. 2. The payment terms were either pure cash or pure stock. 3. A first announcement date of acquisition can be identified from the *Wall Street Journal Index*. 4. Overlapping cases are removed (i.e., if an acquisition occurred within less than five years of a previously included acquisition by the same firm, then the latter observation is excluded). AD denotes the first announcement date of acquisition and ED denotes the effective date. We compute preacquisition buy-and-hold returns over AD − 2 days to ED for the target firm and the postacquisition buy-and-hold returns over ED to ED + 5 years for the acquiring firm. For each period, we also compute buy-and-hold returns for a matching firm that controls for the size and book-to-market effects. The combined period returns over AD − 2 days to ED + 5 years are computed by rolling over the invested capital from the target to acquiring firm in the former case and from the first matching firm to the second matching firm in the latter case. The excess returns reported in lines 2, 3, and 4 are the difference between the acquirer and matching firm returns for the preacquisition, postacquisition, and combined periods. Line 5 reports the difference between portfolio returns of acquirer and matching firms that are rebalanced to give equal weights to all securities on AD − 2, ED, and every year after ED. Numbers in parentheses represent the *t*-statistics.

Form of Payment	Statistic	Mode of Acquisition: Mergers	Tender Offers	All Acquisitions
Stock	1. Sample size	280	8	288
	2. Preacquisition returns	25.0 (10.36)	29.5 (1.70)	25.1 (10.51)
	3. Postacquisition returns	−24.0 (−2.54)	−36.2 (−1.18)	−24.3 (−2.64)
	4. Combined returns			
	Average	**14.9 (1.23)**	**0.7 (0.01)**	**14.5 (1.22)**
	Median	26.9	−15.6	25.5
	5. Rebalanced returns	17.0	−19.9	15.8
Cash	1. Sample size	139	89	228
	2. Preacquisition returns	27.5 (7.86)	24.0 (7.38)	26.1 (10.56)
	3. Postacquisition returns	3.5 (0.20)	70.3 (1.98)	29.6 (1.68)
	4. Combined returns			
	Average	**59.2 (2.45)**	**138.3 (3.09)**	**90.1 (3.93)**
	Median	44.5	93.2	57.6
	5. Rebalanced returns	46.0	111.5	71.7
All	1. Sample size	419	97	516
	2. Preacquisition returns	25.8 (13.01)	24.5 (7.47)	25.6 (14.84)
	3. Postacquisition returns	−14.8 (−1.72)	61.5 (1.88)	−0.5 (−0.05)
	4. Combined returns			
	Average	**29.6 (2.59)**	**126.9 (3.07)**	**47.9 (3.93)**
	Median	31.7	82.7	39.6
	5. Rebalanced returns	26.4	97.7	38.9

Table VII

Cumulative Excess Returns to Long-Term Shareholders Starting with Announcement Date and Ending One to Five Years after the Effective Date, 1970–1989

This table includes firms that are a subset of the overall sample of 947 firms and satisfy the following additional criteria. 1. Whether the acquisition was a merger or a tender offer can be unambiguously identified from the *Wall Street Journal Index*. 2. The payment terms were either pure cash or pure stock. 3. A first announcement date of acquisition can be identified from the *Wall Street Journal Index*. 4. Overlapping cases are removed (i.e., if an acquisition occurred within less than five years of a previously included acquisition by the same firm, then the latter observation is excluded). AD denotes the first announcement date of acquisition and ED denotes the effective date. We compute preacquisition buy-and-hold returns over AD − 2 days to ED for the target firm and the postacquisition buy-and-hold returns over one, two, three, four, and five-year periods after effective date for acquirer firms. For every period, we also compute buy-and-hold returns for a matching firm that controls for the size and book-to-market effects. The combined period returns over AD − 2 days to ED + n years, n = 1 to 5, are computed by rolling over the invested capital from the target to acquiring firm in the former case and from the first matching firm to the second matching firm in the latter case. The excess returns reported below are the difference between the former and the latter cases. The t-statistic, in parentheses, tests the difference in excess returns between the two samples.

	Sample Size	AD − 2 to ED	Year 1	Year 2	Year 3	Year 4	Year 5
Panel A: Mergers vs. Tender Offers							
Merger	419	25.8	28.5	24.0	20.9	30.4	29.6
Tender offers	97	24.5	42.2	48.4	69.6	81.6	126.9
Difference		**1.3**	**−13.7**	**−24.4**	**−48.7**	**−51.2**	**−97.3**
		(0.30)	**(−1.36)**	**(−1.92)**	**(−2.65)**	**(−1.97)**	**(−3.15)**
Panel B: Stock vs. Cash Acquisitions							
Stock	288	25.1	26.1	18.9	11.5	13.4	14.5
Cash	228	26.1	37.5	40.7	53.5	73.7	90.1
Difference		**−1.0**	**−11.4**	**−21.8**	**−42.0**	**−60.3**	**−75.6**
		(−0.30)	**(−1.44)**	**(−2.17)**	**(−2.92)**	**(−2.96)**	**(−3.11)**
Panel C: Stock Mergers vs. Cash Tender Offers							
Stock mergers	280	25.0	25.9	19.8	12.2	13.6	14.9
Cash tender offers	89	24.0	43.0	53.7	76.9	88.4	138.3
Difference		**1.0**	**−17.1**	**−33.9**	**−64.7**	**−74.8**	**−123.4**
		(0.20)	**(−1.63)**	**(−2.46)**	**(−3.25)**	**(−2.80)**	**(−3.73)**

end of second year and 126.9 percent by the end of fifth year. Alternately, the difference between excess returns from mergers and tender offers decreases from 1.3 percent on the effective date to −24.4 percent by the end of second year and −97.3 percent by the end of fifth year (t-statistics 0.30, −1.92, and −3.15). Panel B shows a similar trend for stock versus cash acquirers.

Panel C of Table VII shows that the contrast between stock mergers and cash tender offers is particularly sharp. Both start with approximately equal preacquisition returns, but the additional gains to stock mergers after the

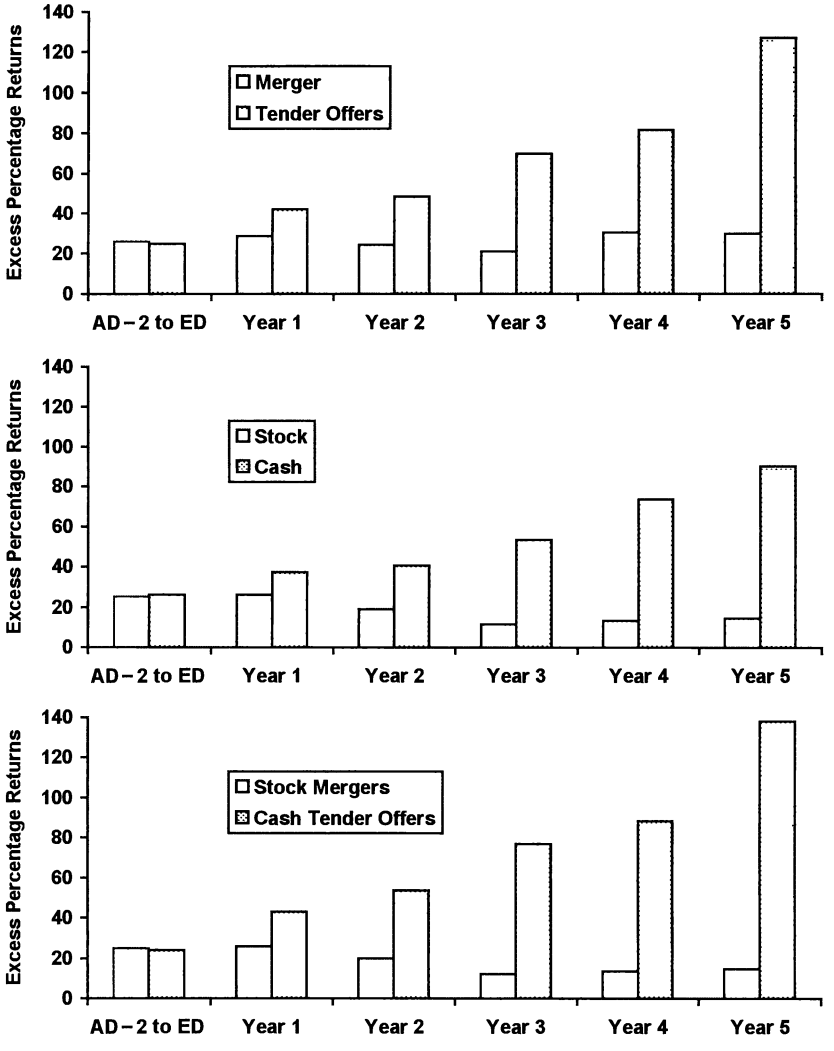

Figure 2. Cumulative Excess Returns to Long-Term Shareholders Starting with Announcement Date and Ending One to Five Years After the Effective Date, 1970–1989. The sample includes firms that are a subset of the overall sample of 947 firms and satisfy the following additional criteria. 1. Whether the acquisition was a merger or a tender offer can be unambiguously identified from the *Wall Street Journal Index*. 2. The payment terms were either pure cash or pure stock. 3. A first announcement date of acquisition can be identified from the *Wall Street Journal Index*. 4. Overlapping cases are removed. We compute preacquisition buy-and-hold returns over AD − 2 days to ED for the target firm and the post-acquisition buy-and-hold returns over one, two, three, four, and five-year periods after effective date for acquirer firms. AD denotes the first announcement date of acquisition and ED denotes the effective date. For every period, we also compute buy-and-hold returns for a matching firm that controls for the size and book-to-market effects. The combined period returns over AD − 2 days to ED + n years, n = 1 to 5, are computed by rolling over the invested capital from the target to acquiring firm in the former case and from the first matching firm to the second matching firm in the latter case. The excess returns are the difference between the former and the latter cases.

second year are flat whereas cash tender offers keep on consolidating their gains. Our explanation of these results is that tender offers, which are often hostile to incumbent managers, may create additional value as new managers are appointed. In the case of mergers, which are more friendly and enjoy the cooperation of incumbent managers, the additional value creation is less likely to occur.

None of the average cumulative excess returns presented thus far in Tables VI and VII are negative, however. Can corporate acquisitions ever result in long-term wealth losses to target shareholders? One may easily find individual cases where ex post the business combination did not work out, but it would be interesting to know if there is an ex ante variable that results in negative cumulative wealth gains averaged over a sufficiently large number of cases.

Such a classification variable is not difficult to find. Intuitively speaking, both the likely efficiency gains and the security issuance considerations should be stronger when the target is relatively large compared to the acquirer. Table VIII reports the cumulative abnormal returns to target shareholders classified by the ratio of target to acquiring firm value on the acquisition effective date. Within stock mergers, the cumulative buy-and-hold returns decrease monotonically across the relative size quartiles. The evidence is quite similar whether we look at the average, median, or rebalanced returns.[17] The top quartile of relative size ratio includes cases where the target firm was at least 64 percent as large as the acquirer firm.[18] The target shareholders in this quartile who hold stock from before the announcement date to until five years after the effective date earn 47.4 percent less than the shareholders of size and book-to-market based matching firms (median 17.2 percent less, rebalanced 28.3 percent less). However, there is no monotonic pattern across relative size quartiles for cash mergers and cash tender offers.

The results of Table VIII may be the first documented evidence of long-term wealth losses to target shareholders in a large subset of acquisitions formed by ex ante observable characteristics. The results assume that in the absence of an acquisition, the target stock would have earned normal returns (the same as the matching firm on average). We think this is a reasonable assumption. Hansen (1987) points out that stock payment may be used in cases where the target stock is more risky. However, greater risk should not imply overvaluation or undervaluation of target shares before the merger offer.

[17] In unreported results, a regression of cumulative returns on the log of relative size also produces a significantly negative coefficient.

[18] Notice the number of acquisitions in various size ratio quartiles differs between stock mergers, cash mergers, and cash tender offers. This occurs because we rank all 947 acquisitions before deleting overlapping cases or arranging them in subsets formed by the mode of acquisition and form of payment. This ranking procedure results in the same upper and lower bounds for size ratio quartiles across panels. An alternate procedure that ranks only the 516 nonoverlapping cases for which announcement dates are available produces similar results.

Table VIII

Cumulative Excess Returns to Long-Term Shareholders over the Combined Announcement and Postacquisition Periods Arranged by the Relative Size of Target to Acquirer Firm, 1970–1989

This table includes 508 firms that are a subset of the overall sample of 947 firms and satisfy the following additional criteria. 1. Whether the acquisition was a merger or a tender offer can be unambiguously identified from the *Wall Street Journal Index*. 2. The payment terms were either pure cash or pure stock. 3. A first announcement date of acquisition can be identified from the *Wall Street Journal Index*. 4. Overlapping cases are removed (i.e., if an acquisition occurred within less than five years of a previously included acquisition by the same firm, then the latter observation is excluded). 5. The stock-for-stock tender offers are removed as there are only 8 cases. AD denotes the first announcement date of acquisition and ED denotes the effective date. We compute preacquisition buy-and-hold returns over AD − 2 days to ED for the target firm and the postacquisition buy-and-hold returns over ED to ED + 5 years for the acquiring firm. For each period, we also compute buy-and-hold returns for a matching firm that controls for the size and book-to-market effects. The combined period returns over AD − 2 days to ED + 5 years are computed by rolling over the invested capital from the target to acquiring firm in the former case and from the first matching firm to the second matching firm in the latter case. The excess returns reported below are the difference between the former and the latter cases. The quartiles are formed by the ratio of the target to acquirer market values. The lowest quartile contains firms with relative size value between below 0.0938, the second quartile between 0.0939 and 0.2831, the third quartile between 0.2843 and 0.6389, and the highest quartile above 0.6424. These cutoff values are obtained by ranking all 947 acquisitions. Numbers in parentheses represent the *t*-statistics.

Target/Acquirer Market Value Quartile	Sample Size	Excess Announcement Period Returns to Target Shareholders	Excess Postacquisition Period Returns to Acquirer Shareholders	Excess Returns to Buy-and-Hold Shareholders Over the Combined Announcement and Postacquisition Periods			Excess Rebalanced Returns
				Average	*t*-stat	Median	
Panel A: Stock Mergers							
Low	90	34.4 (7.01)	−23.2 (−1.62)	**30.3**	**(1.67)**	53.3	45.6
2	73	30.5 (6.82)	−26.2 (−1.17)	**29.1**	**(1.02)**	21.7	22.6
3	73	19.2 (6.38)	−11.0 (−0.58)	**19.2**	**(0.90)**	19.1	7.0
High	44	6.0 (0.93)	−43.4 (−2.19)	**−47.4**	**(−1.48)**	−17.2	−28.3
All	280	25.0 (10.36)	−24.0 (−2.54)	**14.9**	**(1.23)**	26.9	17.0
Panel B: Cash Mergers							
Low	43	31.1 (5.27)	−25.8 (−0.83)	**18.1**	**(0.44)**	59.1	45.3
2	41	17.9 (2.30)	23.4 (0.73)	**85.1**	**(1.71)**	40.7	76.5
3	25	36.8 (4.20)	−12.9 (−0.37)	**47.6**	**(1.04)**	9.6	12.3
High	30	27.6 (5.95)	32.3 (0.72)	**92.3**	**(1.66)**	5.2	35.0
All	139	27.5 (7.88)	3.5 (0.20)	**59.2**	**(2.45)**	44.5	46.0
Panel C: Cash Tender Offers							
Low	14	19.1 (1.92)	31.8 (1.92)	**61.6**	**(1.60)**	92.8	88.6
2	21	21.2 (2.92)	68.8 (2.40)	**141.6**	**(2.56)**	115.7	131.7
3	15	27.7 (3.19)	253.1 (1.49)	**372.8**	**(1.79)**	185.7	302.9
High	39	25.9 (6.18)	14.7 (0.35)	**73.9**	**(1.44)**	12.7	42.6
All	89	24.0 (7.38)	70.3 (1.98)	**138.3**	**(3.09)**	93.2	111.5

IV. Conclusions

This paper examines the postacquisition returns in the context of shareholder wealth gains from 947 acquisitions. On average, the acquirer stock returns are greater than matching stock returns in cases where a tender offer is made and where cash is used for payment. The acquirer stock returns are smaller than matching stock returns in cases where a merger offer is made and where stock is used for payment. The difference is quite significant; ranging from −25.0 percent for stock mergers to 61.7 percent for cash tender offers.

This evidence is consistent with two hypotheses. First, the postacquisition wealth gains are greater for tender offers which are usually hostile to incumbent managers as compared with mergers. The wealth gains could occur because of the appointment of more efficient managers as proposed by Martin and McConnell (1991). Second, the acquirer's managers are likely to choose stock payment when their stock is overvalued and cash payment when it is undervalued. Apparently, the market does not react efficiently to the likely wealth gains from the business combination or to the news conveyed by the form of payment.

We examine the overall wealth gains of target shareholders from stock mergers by combining the preacquisition and postacquisition returns. That target shareholders gain from all types of acquisitions seems to be a generally accepted result in the finance literature. Our article casts some doubt on this result. Whereas target shareholders who sell out soon after the acquisition effective date gain from all acquisitions, those who hold on to the acquirer's stock received as payment find their gains diminish over time. Worse yet, target shareholders in the top quartile of target to acquirer firm size ratio find their gains reverse and become negative. Surprisingly, their wealth gains following the announcement of an acquisition do not disappear only in cases where the current bid fails and no subsequent bid materializes (as shown in Bradley, Desai, and Kim (1983) and Asquith (1983)), but also in cases where the bid succeeds and the target is large relative to the bidder.

Our results on postacquisition returns and the aggregate wealth gains to target shareholders from stock mergers raise many interesting questions. In particular, why the market does not react efficiently to the likely wealth gains on the acquisition effective date is an unanswered question that deserves future research.

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