Can Takeover Losses Explain Spin-Off Gains?

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Abstract

This paper evaluates the conjecture that excess stock returns that have been documented
around the announcement of corporate spin-offs represent, at least in part, the re-creation of
value destroyed at the time of an earlier acquisition. We evaluate this question with a sample
of spin-offs that originated as earlier acquisitions. At the time of the original acquisition,
on average, announcement period returns to the bidder and the combined bidder and target
firm are negative and significant. Additionally, announcement period returns at the time
of the spin-off are negatively and significantly correlated with acquisition announcement
period returns.

I. Introduction

Hite and Owers (1983), Miles and Rosenfeld (1983), and Schipper and Smith
(1983) document significant positive excess stock returns of approximately 2 per-
cent to 3 percent during the two-day interval surrounding announcements of cor-
porate spin-offs. These authors investigate a number of hypotheses to explain the
increases in shareholder wealth that accompany spin-offs. Among these are the hy-
pothesis that shareholder gains represent wealth transfers from senior claimholders
(Hite and Owers (1983); Schipper and Smith (1983)), that gains derive from the
relaxation of regulatory or tax constraints (Schipper and Smith (1983)), that gains
result from enhanced contracting efficiency between the parent and the subsidiary
and between the parent, the subsidiary, and other third-party entities (Hite and
Owers (1983)), and that gains come about because the spin-off reorganizes and
streamlines an unwieldy managerial structure (Schipper and Smith (1983)).

The wealth expropriation hypothesis is rejected by the data. The other hy-
potheses receive some support, but do not appear to explain fully the shareholder
wealth gains associated with corporate spin-offs. This paper investigates an alter-
native explanation—that the wealth gains associated with corporate spin-offs result
from the correction of a prior mistake. The mistake was an unprofitable earlier

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acquisition and the spin-off represents the undoing of that unwise takeover. The roots of this explanation can be found in Porter (1987), Ravenscraft and Scherer (1987), Scherer (1988), and Kaplan and Weisbach (1992).

In particular, Porter studies 33 major U.S. corporations over the period 1950 through 1986 and finds that more than half of their acquisitions were subsequently divested. He states:

> Recognizing past diversification mistakes, some companies have initiated large-scale restructuring programs (Porter (1987), p. 43).

In a detailed analysis of acquisitions that occurred between 1971 and 1982, Kaplan and Weisbach (1992) classify acquisitions that are later divested as being either successful or unsuccessful. Among other things, they compare the announcement period stock returns of the acquirer and the combined returns of the acquirer and the acquired firms for those acquisitions in the unsuccessful group with those in the successful group. They find that average announcement period returns to the acquirer are significantly lower for the unsuccessful than for the successful set of acquisitions. They interpret these results to indicate that when an unwise acquisition is undertaken, investors revise their expectations downward for the performance of the combined entity and the stock price of the acquirer declines appropriately. They do not distinguish between spin-offs and divestitures by other means in their analysis.

In a related study, Mitchell and Lehn (1990) examine the announcement period returns of the acquisitions of a large sample of firms, some of which later became acquisition targets themselves and some of which did not. They find that acquisition announcement period returns are more negative for subsequently divested acquisitions than are announcement period returns for acquisitions that are not divested regardless of whether the acquirer later became an acquisition target. In short, both targets and nontargets tend to divest unsuccessful takeovers. Mitchell and Lehn do not relate acquisition announcement period returns to subsequent divestiture announcement period returns nor do they distinguish their sample according to whether the divestitures were by means of a sell-off or a spin-off.

To motivate the investigation in this paper, suppose that the motive for some corporate spin-offs is to unwind an unsuccessful prior acquisition. Further, suppose that unsuccessful acquisitions are, on average, accompanied by a negative stock price reaction. Finally, suppose that when the spin-off is eventually announced, the market responds by rewarding the shareholders of the then combined firm. If so, the average positive stock price reaction that has been observed around the announcements of corporate spin-offs generally may merely represent the recreation of wealth that was destroyed (or expected to be destroyed) as a result of the earlier (unwise) acquisition.

In this paper, we investigate the "correction-of-a-mistake" hypothesis as an alternative explanation for the positive excess returns that accompany corporate spin-off announcements generally. Support for this hypothesis does not mean, of course, that all spin-offs are undertaken to correct an unwise acquisition. It only means that the average positive stock price response across a large sample of spinoffs contains a component that represents the re-creation of wealth dissipated in

the subset of unwise acquisitions and, as a consequence, provides an upward bias to the average stock price response around spin-off announcements.

We conduct the investigation with a sample of 94 spin-offs in which the spun-off entity had been previously acquired by the parent firm. The predictions of the hypothesis are threefold: first, the acquirer's stock price reaction around the announcement of a takeover that becomes spin-off is negative. A stronger version of this prediction is that not only are the stock returns to the acquiring firm negative, but that the loss in value to the shareholders of the acquiring firm is greater than the gain to the shareholders of the target such that the post-announcement value of the combined firm is actually less than the sum of the preannouncement values of the separate entities. That is, not only do the shareholders of the acquiring firm lose value, but there is a net loss in value to the shareholders of both firms at the time of the acquisition. Second, the average stock price reaction around spin-offs of prior acquisitions is more positive than the average stock price reaction around spin-offs generally. That is, if the value gain documented for spin-offs generally is attributable to the re-creation of value from the undoing of unwise acquisitions, then the spin-off announcement period returns for the spin-offs in this sample should be greater than those for a random sample of spin-offs—some of which represent the divestiture of an internally generated subsidiary and some of which represent the divestiture of a prior acquisition. Third, the stock price reaction around the announcement of spin-offs of prior acquisitions is positive, but is negatively correlated with the stock price reaction around the original acquisition. That is, the "bigger" the acquisition "mistake," the greater the rebound in price when the spin-off is announced.

Both the first and third of these predictions are supported by the data: over a two-day interval that encompasses the acquisition announcement date and the prior day, over a nine-day interval that surrounds the date of the initial acquisition announcement, and over the interval from 10 days prior to the date of the initial announcement through the date on which the acquisition agreement is announced, the average excess returns to the acquiring firm are negative and significantly different from zero. The magnitudes of the average excess returns over the three intervals are −0.68 percent, −1.06 percent, and −3.07 percent, respectively, with associated p-values of 0.05, 0.10, and 0.00. Furthermore, even the stronger variation of the first prediction is supported by the data: for a subsample of 40 cases in which stock price data are available for both the acquirer and the target firm, the *combined* average excess return is negative and significantly different from zero over the two-day interval that encompasses the initial announcement and the prior day, over the nine-day interval surrounding the acquisition announcement, and over the interval from 10 days before the initial announcement through the date of the acquisition agreement. The magnitudes of the combined bidder and target excess returns for these three intervals are −0.65 percent, −1.91 percent, and −2.14 percent, respectively, with p-values of 0.10, 0.04, and 0.06.

As regards the second prediction, both the two-day and the nine-day announcement period average excess returns surrounding the *spin-off* announcement are positive (+2.15 percent and +2.49 percent, respectively) and highly significant (p-value = 0.00 for both), but the average excess returns for this sample of spin-offs is not much different from that of spin-offs generally or from that of a matched

sample of spin-offs that did not originate as takeovers. The average excess returns over the two-day and nine-day announcement periods for the matched sample of spin-offs are +1.85 percent and +2.94 percent, respectively.

Finally, as regards the third prediction, when a cross-sectional regression is estimated in which the dependent variable is the two-day (or nine-day) spin-off announcement period return and the independent variables include the acquirer's announcement period return, measured over the two-day or nine-day announcement interval or over the interval from 10 days before the initial announcement through the acquisition agreement date (and several control variables), the coefficient of the acquirer's announcement period excess return is always negative and typically significantly different from zero. Similarly, when the dependent variable is the spin-off announcement period return and the independent variable is the *combined* excess return of the bidder and target firms at the acquisition (and certain control variables), the coefficient of the combined bidder and target excess return is always negative and typically significantly different from zero (regardless of the interval over which acquisition excess returns are measured). In short, the bigger the acquisition mistake (i.e., the more negative the acquisition returns), the greater the wealth creation at the announcement of the spin-off.

We interpret the results to indicate that, at least in part, the positive stock price reaction around the announcement of corporate spin-offs that has been documented by Hite and Owers (1983), Miles and Rosenfeld (1983), and Schipper and Smith (1983) represents the recapturing of wealth that is lost (or expected to be lost) as the result of an unwise acquisition, rather than a wealth gain associated with the spin-offs, per se. In a recent analysis, Seward and Walsh (1992) focus on organizational change as the explanation of the gains in corporate spin-offs generally and meet with only limited success in their efforts. It is possible that their analyses (and those of others who seek to explain the stock price increases associated with the announcement of corporate spin-offs) would prove more powerful if they were to control for the increase in share price due to the re-creation of value lost in those spin-offs that began as acquisitions. The results do not indicate that all gains in corporate spin-offs are the result of undoing unwise acquisitions. Indeed, our failure to support the second prediction of the "correction-of-a-mistake" hypothesis points in the opposite direction. But, the results do indicate that studies that attempt to explain spin-off announcement period returns should control for this effect.

There are some managerial implications that follow from the results as well. First, the negative correlation between acquisition returns and spin-off returns suggests that managers who ignore negative stock market returns at the time of an acquisition can redeem themselves, at least partially, by divesting the same acquisition. Second, the results indicate that one potential source of gains in "bust-up" takeovers is the recapturing of stock market losses that were sustained earlier in value-reducing acquisitions undertaken by the firm that later becomes the target of the bust-up takeover.

In the next section, we provide further background discussion of spin-offs and acquisitions to motivate the empirical analysis that follows. Section III describes the sample and Section IV reports the empirical results. The final section summarizes and concludes the paper.

II. Background

In a corporate takeover—whether by means of a merger or an acquisition—two free-standing companies are joined to comprise one entity. In those cases in which the acquired firm is later spun-off, the combined enterprise once again becomes two free-standing companies.

In the typical corporate spin-off, a corporation (customarily called the "parent") forms a new, separate corporation and ownership to a subset of the assets of the parent is transferred to the newly created corporate entity. The shares in the new corporation are then distributed on a pro rata basis to the shareholders of the parent firm. When the spin-off involves the divestiture of a previous acquisition, it is often the case that the acquired firm had been operating as a wholly owned subsidiary of the parent firm. In these cases, the parent need not create a new corporate entity. Rather, the shares in the wholly owned subsidiary are distributed directly to shareholders of the parent firm—again on a pro rata basis.

Evidence from the stock market indicates that the shareholders of acquiring firms do not gain and, perhaps, lose a little at the time of the acquisition. Evidence to this effect is presented in Dennis and McConnell (1986), Bradley, Desai, and Kim (1988), Asquith, Bruner, and Mullins (1983), and Jarrell and Poulsen (1989), among others. However, with a comprehensive sample of mergers and acquisitions that took place over the period 1965 through 1988, Loderer and Martin (1990) report an apparent time dependency in the stock market reaction to corporate takeovers. Roughly speaking, during the 1960s, acquirers earned positive abnormal returns; during the 1970s, acquirer returns are not significantly different from zero; and during the 1980s, takeover announcements were accompanied by significantly negative announcement returns to acquiring firms.

Explanations that have been postulated to explain the lack of a positive valuation effect for acquirers include the inability of the acquirer's management to foresee the undesirable effects of the acquisition or managerial motives to undertake the acquisition despite the undesirable consequences for shareholders. These motives include hubris (Roll (1986)), growth-based compensation (Jensen (1986)), entrenchment (Shleifer and Vishny (1989)), and other forms of self-serving behavior (Morck, Shleifer, and Vishny (1990)). These explanations offer a corollary that is tempting to apply when interpreting the documented positive returns that accompany spin-off announcements—a correction-of-a-mistake hypothesis. According to this hypothesis, the negative effect of an acquisition is unwound by a spin-off, thereby "causing" a positive effect on stock price, when the spin-off of a previously acquired company is announced. In a large sample, of course, only a fraction of the spin-offs derive from prior acquisitions. Still, if the wealth gains associated with this subset are substantial enough, it could "cause" an average positive announcement period return for an entire sample of spin-offs even if the spin-off of subsidiaries that did not previously result from a prior acquisition generate a zero wealth effect. Specifically, it is possible that "generic" spin-offs do not create value, per se, rather it is the subset of spin-offs made up of prior acquisitions that is responsible for the average positive stock price reaction across a large sample of spin-offs. If so, then the average announcement period abnormal return for this subset of spin-offs would be larger than the average return across a

random sample of spin-offs. More specifically, announcement period returns to a sample of spin-offs that originate with a takeover should be larger than those to a sample of spin-offs that arise from the spin-off of "home-grown" subsidiaries.

Additionally, if it is assumed that the re-creation of value at the spin-off is roughly proportional to the value lost at the announcement of the original takeover, the spin-off announcement period returns should be negatively correlated with the acquisition announcement period returns. That is, if bigger acquisition mistakes result in larger negative wealth effects at the announcement of the acquisition, then correction of these mistakes should give rise to larger positive wealth effects at the announcement of the spin-off.

Of course, acquirers can divest themselves of acquisition mistakes by means other than spin-offs. The most popular, but not the only alternative, is by sale of the subsidiary to another firm. For our purposes, though, that is not as clean an experiment because the positive abnormal returns that accrue to the seller in a "sell-off" may represent "overpayment" by the second acquirer.[1] More importantly, we are interested in whether the apparent inability of Hite and Owers (1983), Miles and Rosenfeld (1983), Schipper and Smith (1983), and Seward and Walsh (1992) to discover the "cause" of the positive abnormal returns around spin-off announcements is because they have not looked in the all the right places or, at least, have not controlled for all factors that contribute to spin-off announcement period returns.

III.   Sample Selection

To conduct our investigation, an initial list of 1142 stock distributions that took place over the period 1962 through 1991 was identified from a search of the S&P Quarterly Dividend Record.[2] To be considered a spin-off, we require that the distribution be a pro rata distribution of the stock of a wholly owned subsidiary. Thus, this criterion excluded 451 distributions of stock in publicly-traded companies and 131 distributions that involved a voluntary self-liquidation. We also eliminated 92 distributions in which the spin-off could not be confirmed in CCH's Capital Changes Reporter and 38 nonvoluntary spin-offs. These criteria reduced the sample to 430 confirmed voluntary spin-offs. To be included in the sample for further analysis, we require that the spin-off be announced in the WSJ and that the parent firm's shares be traded on the NYSE, the AMEX, or the OTC/NASDAQ System at the time of the spin-off. These criteria reduced the sample to 342. Of these, eight were deleted because the spin-off announcement was accompanied by an earnings announcement (three), a change in dividend policy (two), or the spin-off was used as a takeover defense (three).[3] We further determined that 13 of these

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[1] Analyses of the wealth effects of corporate sell-off have been conducted by Alexander, Benson, and Kampmeyer (1984), Hite, Owers, and Rogers (1987), Jain (1986), Klein (1986), and Rosenfeld (1984), among others.

[2] These sources identify many share distributions as spin-offs that do not qualify as spin-offs for our purposes. To qualify as a spin-off for possible inclusion in our sample, we require that the spin-off be a tax-free pro rata distribution of a wholly owned subsidiary. This criterion excludes partial distributions and the return of capital contributions.

[3] We determined that the spin-off was used as a takeover defense if the WSJ article announcing the spin-off indicated that the spin-off was intended to thwart a hostile takeover (two) or if a hostile bidder discontinued a bid shortly after the spin-off announcement (one).

spin-offs were undertaken expressly for the purpose of facilitating the acquisition of the subsidiary by another company. Because our focus is on spin-offs that give rise to two free-standing entities, these 13 observations (both the spin-off and the acquisition) are deleted from the analysis. If the spin-off is undertaken to facilitate acquisition of the subsidiary by another company, the positive announcement period stock price returns may merely represent "overpayment" by the *new* acquirer of the spun-off subsidiary. Or, to put it another way, the second acquisition may be a mistake. We exclude these from the sample to avoid contaminating the results with such a possibility.[4]

For the 321 spin-offs that remain in the sample, three avenues of inquiry were pursued to determine whether the spun-off entity originated with an earlier acquisition. First, the WSJ article describing the spin-off was read to discover whether it contained any reference to an original acquisition.

The second avenue of inquiry was Moody's Manuals. The entry for each company in the Manuals includes a "corporate history" section that presents an abbreviated history of the company's origins, its acquisitions, and certain other significant events in the life of the corporation. The history also gives the year in which the acquisition was consummated. Because the corporate history is updated at regular intervals and because certain events, especially events that occurred a number of years earlier, are occasionally dropped from the most recent history, each parent company's history was read at three-year intervals retrogressively from the year of the spin-off through 1955 to identify whether a spun-off entity originated with an earlier acquisition.

The third, and most fruitful, source of such information is the "company history" section of the spun-off subsidiary's 10K filings following the spin-off. Of the 321 spin-offs with stock returns data and with an "uncontaminated" announcement in the WSJ, 94, or nearly 30 percent of the sample, were identified from the various sources as having originated with an acquisition.

To determine whether an announcement of the acquisition appeared in the WSJ, both the acquiring and the acquired firm's entry in the WSJ Index was searched for the year of and (if necessary) the two years prior to the takeover consummation date identified in the Moody's Manuals or the spun-off company's 10K. Because the Index begins in 1958, for the years 1955–1957, the WSJ itself was searched to identify acquisition announcement dates.

As is well known, the initial announcement date of some acquisitions is ambiguous because some acquisitions are first announced as "talks have begun" followed by subsequent progress reports on the status of negotiations until an "agreement in principle" is announced. In other cases, the first announcement is the announcement of an "agreement in principle." In some cases, the ambiguity regarding the initial "information" date is heightened because there appears to be "leakage" of information regarding the takeover prior to any public announcement. There is, thus, the question as to when the market first learns of the acquisition and the related question as to when the full valuation effect of the takeover is impounded in the stock price. Because of this ambiguity, care must be taken in

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[4]We concluded that a spin-off was undertaken to facilitate acquisition of the subsidiary if the WSJ article indicated that the purpose of the spin-off was to facilitate acquisition of the subsidiary by another firm or if the subsidiary was acquired by another company within 60 days of the spin-off.

identification of acquisition announcement dates. For acquirers, we identify the initial announcement date as the first date that the bidder and target are mentioned in the same WSJ article. For targets, the initial announcement date is the first date that the target is mentioned as a takeover candidate prior to the takeover by the successful bidder firm. We follow this procedure because there are some instances in which the target is identified as an acquisition candidate prior to any identification of the bidder.

Finally, to enter the *acquisition* sample, we require that either the acquirer or the target firm have shares listed on the NYSE, the AMEX, or the OTC/NASDAQ System at the time of the acquisition and that there be no "contaminating" information about the firm in the WSJ over the three-day interval surrounding the initial acquisition announcement.[5]

Of the 94 spin-offs that could be identified as having originated with an acquisition, 78 have uncontaminated acquisition announcement dates in the WSJ and stock price data are available for 73 of the acquirers and for 40 of the acquired firms at the time of the initial acquisition announcement. For all 40 cases in which stock price data are available for the target, stock price data are also available for the acquirer. Thus, the acquisition sample includes 40 observations in which it is possible to calculate the combined announcement effect for the bidder and target firms.

In 52 of the 73 cases for which we have returns for the acquiring firm, the initial announcement is an announcement of an agreement in principle. These 52 include 19 of the 40 cases in which stock price data are available for both the bidder and the target firms. In 21 cases, the first article mentions that negotiations are underway, but an agreement on terms is not reached until a later date. We identify this later date as the "acquisition agreement" date.[6] In those cases in which the initial announcement is the announcement of an agreement in principle, we use the initial announcement date as the acquisition agreement date.

In 36 of the 40 cases for which we have returns for the target, both the bidder and target firm are identified in the same initial announcement. As noted above, in 19 of these, the initial announcement is an announcement that an agreement in principle has been reached by the two parties. In 17 other cases, the initial announcement indicates that talks have begun, but terms of the agreement are not announced until a later date—the acquisition agreement date. Finally, for four cases, only the target is identified in the initial article discussing the takeover and the bidder is not identified until a later date. In these four cases, the initial announcement date differs for the bidder and the target firms. For all the acquisitions in the sample, the time elapsed between the initial announcement date and the acquisition agreement date ranges from one day to 162 days with a mean of 60 days and a median of 43 days.

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[5]Two observations were deleted because of concurrent announcements of dividend increases by the acquiring firm.

[6]In all 33 acquisitions in which the target was not publicly-traded, the initial article in the WSJ states that the target "has been acquired" or "has agreed to be acquired." In 19 of the 40 cases in which the target is publicly traded and the initial announcement is an announcement of an agreement in principle, the WSJ article cites either "board approval by both firms," "an agreement in principle between both firms," the signing of a "definitive agreement," or "agreement on the terms of a proposed merger."

As might be expected, the mean and median market values of bidder firms ($804 million and $381 million, respectively) are substantially larger than those of target firms ($118 million and $60 million, respectively). One other interesting statistic is the time interval between acquisition and spin-off. The mean (median) time elapsed between acquisition and spin-off is 88 months, the maximum is 356 months, and the minimum is nine months.

IV.   Statistical Analysis

To conduct the analysis of stock price reaction to the announcements of takeovers and spin-offs, the CRSP daily stock returns file is used in conjunction with the market model procedure as described, for example, in Brown and Warner (1985) or Linn and McConnell (1983). When sufficient data are available, market model parameters are estimated over the period from 160 days before through 61 days before the announcement. In two cases, stock data are not available for this entire time period. In those cases, all available data prior to 61 days before the event are used. In five cases, daily stock data are not available on the CRSP file. These are events that occurred prior to the beginning date of the NYSE/AMEX daily file (i.e., prior to 1962) for firms listed on the NYSE or the AMEX or prior to the beginning date of the OTC/NASDAQ daily file for firms listed on the OTC/NASDAQ System (i.e., prior to 1972). For these observations, daily stock price data were collected from the WSJ. For both spin-offs and acquisitions, announcement period excess returns are computed over a two-day interval (which includes the day in which the initial announcement appeared in the WSJ and the prior day) and over a nine-day interval centered on the initial WSJ publication date. For acquisition announcements, excess returns are also calculated over the interval, which begins 10 days before the initial announcement date and ends on the acquisition agreement date. This longer time interval is used to capture the "full" valuation effect of the takeover. By beginning 10 days prior to the initial announcement, the interval should capture any preannouncement leakage of information. By ending on the acquisition agreement date, this interval should account for the resolution of any residual uncertainty that may occur between the time the negotiations commence and the time at which they are completed.

A.   Stock Valuation Effects for Acquiring Firms

As reported in Table 1, for the sample of acquiring firms for which stock price data are available, the average announcement period returns over the two-day and nine-day intervals surrounding the initial acquisition announcement and over the interval from 10 days before the initial announcement through the acquisition agreement date are −0.68 percent, −1.06 percent, and −3.07 percent, respectively, with p-values of 0.05, 0.10, and 0.00. Thus, the announcement period returns of takeovers that become spin-offs are negative and significantly different from zero regardless of the acquisition announcement interval considered. These results are consistent with the hypothesis that the documented shareholder gains surrounding corporate spin-offs *merely* represent the re-creation of value destroyed at the time of the acquisition.

TABLE 1

Announcement Period Excess Returns to Acquirers for Acquisitions during the Period 1955–1991 that Became Spin-Offs during the Period 1962–1991

(p-values in parentheses)

Sample	Sample Size	Day −1 through Day 0	Fraction Positive	Day −4 through Day +4	Fraction Positive	Day −10 through Agreement Date[a]	Fraction Positive
Full sample	73	−0.68% (0.05)	0.45	−1.06% (0.10)	0.44	−3.07% (0.00)	0.32
1955–1969	27	1.02% (0.24)	0.56	0.15% (0.56)	0.44	−0.67% (0.40)	0.30
1970–1979	29	−1.10% (0.16)	0.55	−0.21% (0.44)	0.55	−2.61% (0.11)	0.45
1980–1990	17	−2.14% (0.00)	0.12	−4.09% (0.00)	0.24	−6.89% (0.00)	0.12
Target firm's operations related to those of the acquiring firm[b]	24	0.12% (0.77)	0.50	−0.63% (0.31)	0.46	−2.55% (0.14)	0.33
Target firm's operations unrelated to those of the acquiring firm	49	−1.06% (0.02)	0.43	−1.27% (0.12)	0.43	−3.29% (0.00)	0.31
Acquisitions with stock data for both acquiring and target firms	40	−1.61% (0.00)	0.35	−2.72% (0.01)	0.35	−4.76% (0.00)	0.30

[a] Average cumulative excess return from 10 days before the first announcement in the WSJ through the date the merger or acquisition was approved by both firms.

[b] The parent and target firms are considered to be related if any of the SIC codes of the four primary lines of business in each firm overlap at the two-digit level. SIC information was obtained from Dun and Bradstreets' Million Dollar Directory for the year prior to the acquisition.

There are, however, other ways to consider the stock price reaction for acquisitions that later become spin-offs. One is according to the time interval in which the takeover occurred. When the takeover sample is divided into three time periods—1955–1969, 1970–1979, and 1980–1989—the announcement period returns, also displayed in Table 1, can be compared to those documented by Loderer and Martin (1990) over roughly similar time periods. For example, using a two-day interval, for the period 1955–1969, the average announcement period return is +1.02 percent (p-value = 0.24); for the period 1970–1979, the announcement period return is −1.10 percent (p-value = 0.16); and for the period 1980–1989, it is −2.14 percent (p-value = 0.00). For the interval beginning 10 days prior to the initial announcement and ending with the acquisition agreement date, the returns are more negative, but display a similar time series pattern: for the period 1955–1969, the average announcement period return is −0.67 percent (p-value = 0.40); for the period 1970–1979, it is −2.51 percent (p-value = 0.11); and for the period 1980–1989, it is −6.89 percent (p-value = 0.00). Over roughly similar time periods, Loderer and Martin (1990) report higher announcement period returns for each "decade" for a large sample of various types of takeovers. For their three time intervals, the announcement period excess returns are +1.72 percent (t-statistic = 8.52), +0.57 percent (t-statistic = 5.49), and −0.07 percent (t-statistic = −0.34).[7] Thus, the market reaction to the takeovers in our sample is more negative than for the population of takeovers generally.

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[7] Loderer and Martin employ a six-day announcement period to compute excess returns.

Another way in which to consider acquisitions is whether the bidder and target come from the same industry. Porter (1987) argues that diversifying takeovers are more likely to result in failure than are those in which the bidder and target come from the same industry. Kaplan and Weisbach (1992) find scant support for this contention. They classify a sample of acquisitions into diversifying acquisitions and related acquisitions. A related acquisition is one in which the acquirer and target share a two-digit SIC code in any of their four primary lines of business. All others are classified as diversifying acquisitions. They report that the announcement period returns to the acquirer and target are not significantly different between the two samples. When we use the same classification scheme for our sample, we have 24 related and 49 diversifying acquisitions. As shown in Table 1, announcement period returns are mildly different between the two samples with the mean announcement period return being modestly lower for diversifying acquisitions than for related acquisitions, but the p-values for the differences between the mean returns of the two samples over the three time intervals considered are only 0.45, 0.81, and 0.78.

B. Stock Valuation Effects for Target Firms

A third way in which to consider takeovers is by analyzing returns to the shareholders of the target firm. Announcement period returns for target firms are reported in Table 2. These results are similar to those reported for target firms in prior studies.[8] Specifically, announcement period returns are significantly positive for every announcement period considered, for the full sample of target firms, for acquisitions during the 1960s, the 1970s, and the 1980s, and regardless of whether the acquisition is classified as related or diversifying. Additionally, the target's announcement period excess returns are much larger when measured over the interval from 10 days before the initial announcement through the acquisition agreement date than when measured over the announcement periods, suggesting that this interval more accurately gauges the full valuation effect of the takeover.

C. Stock Valuation Effects for Combined Acquirer and Target Firms

To this point, the analysis considers returns separately for bidder and target firms. As we noted at the outset, a stronger test of the "correction of a mistake" hypothesis is whether the combined value of the bidder and the target decline at the time of the acquisition. To consider this question, we compute a value-weighted excess return for the combined acquirer and target firms where the weights are the market values of the bidder and target firms measured five days prior to the takeover announcement. Equivalently, we have computed the market-adjusted change in the aggregate market values of the bidder and target firm during the acquisition announcement period and divided that by the sum of their market values five days prior to the takeover announcement. This value is computed for the 40 cases in which stock price data are available for both the bidder and the target firm. The results are reported in Table 3.

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[8]See, for example, Bradley, Desai, and Kim (1988) and Dennis and McConnell (1986).

TABLE 2

Announcement Period Excess Returns to Targets in Acquisitions during the Period 1955–1991 that Became Spin-Offs during the Period 1962–1991

(p-values in parentheses)

Sample	Sample Size	Day −1 through Day 0	Fraction Positive	Day −4 through Day +4	Fraction Positive	Day −10 through Acquisition Agreement Date[a]	Fraction Positive
Full sample	40	6.44% (0.00)	0.70	9.04% (0.00)	0.72	16.21% (0.00)	0.85
1955–1969	9	5.11% (0.02)	0.67	7.75% (0.02)	0.78	15.43% (0.00)	0.89
1970–1979	16	4.84% (0.07)	0.63	8.29% (0.04)	0.63	15.08% (0.00)	0.81
1980–1990	15	8.93% (0.00)	0.80	10.60% (0.00)	0.80	18.84% (0.00)	0.87
Target firm's operations related to those of the acquiring firm[b]	12	5.24% (0.00)	0.50	8.86% (0.00)	0.75	13.65% (0.00)	0.83
Target firm's operations unrelated to those of the acquiring firm	28	6.95% (0.00)	0.79	9.11% (0.00)	0.71	17.40% (0.00)	0.86

[a]Average cumulative excess return from 10 days before the first announcement in the WSJ through the date the merger or acquisition was approved by both firms.
[b]The parent and target firms are considered to be related if any of the SIC codes of the four primary lines of business in each firm overlap at the two-digit level. SIC information was obtained from Dun and Bradstreets' Million Dollar Directory for the year prior to the acquisition.

TABLE 3

Combined Value-Weighted Announcement Period Excess Returns to the Bidder and Target Firms for Acquisitions that Became Spin-Offs during the Period 1962–1991

(p-values in parentheses)

Sample	Sample Size	Day −1 through Day 0	Fraction Positive	Day −4 through Day +4	Fraction Positive	Day −10 through Acquisition Agreement Date[a]	Fraction Positive
Full sample	40	−0.65% (0.10)	0.48	−1.91% (0.04)	0.48	−2.14% (0.06)	0.45
1955–1969	9	1.69% (0.06)	0.67	1.07% (0.26)	0.67	4.28% (0.05)	0.67
1970–1979	16	−1.72% (0.02)	0.38	−3.42% (0.05)	0.38	−4.74% (0.02)	0.38
1980–1990	15	−0.91% (0.08)	0.47	−2.09% (0.10)	0.47	−3.18% (0.09)	0.40
Target firm's operations related to those of the acquiring firm[b]	12	0.00% (0.98)	0.50	−0.99% (0.25)	0.50	−2.92% (0.13)	0.42
Target firm's operations unrelated to those of the acquiring firm	28	−0.93% (0.08)	0.46	−2.30% (0.06)	0.46	−1.79% (0.17)	0.46

[a]Average cumulative excess return from 10 days before the first announcement in the WSJ through the date the merger or acquisition was approved by both firms.
[b]The parent and target firms are considered to be related if any of the SIC codes of the four primary lines of business in each firm overlap at the two-digit level. SIC information was obtained from Dun and Bradstreets' Million Dollar Directory for the year prior to the acquisition.

Regardless of the announcement period considered, the average excess return is negative and statistically significantly different from zero. The average values of this statistic for the two-day announcement period, for the nine-day announcement period, and for the interval from 10 days before the initial announcement through the acquisition agreement date are −0.65 percent (*p*-value = 0.10), −1.91 percent (*p*-value = 0.04), and −2.14 percent (*p*-value = 0.06). On average, it appears that acquisitions that result in spin-offs actually destroy value in the combined firms—keeping in mind, of course, that this analysis is conducted with only the 40 observations for which data are available for both the bidder and the target firm.

We also separate this sample into those that occurred during the periods 1955–1969, 1970–1979, and 1980–1989 and according to whether the acquisitions are related or diversifying. As shown in Table 3, the combined average excess returns to acquirers and targets are negative and significantly different from zero during the 1970s and the 1980s and they are positive and (generally) significantly different from zero during the 1955–1960 period. Finally, Table 3 also shows combined average excess returns tend to be negative, although not always significantly different from zero, regardless of whether the acquisition is related or diversifying.

D. Stock Valuation Effects of Spin-Offs

The results to this point are generally consistent with the first prediction of the "correction of a mistake" hypothesis—on average, acquisitions that end up as spin-offs generate stock valuation losses at the time of the original acquisition. We now turn to the second prediction—that announcement returns are more positive for spin-offs that originated as a takeover than for spin-offs generally. To test this prediction, announcement period excess returns are calculated for our sample of spin-offs for the two-day and the nine-day announcement intervals surrounding the spin-off announcement. The results are presented in Table 4.

As shown, the average announcement period returns are +2.15 percent and +2.49 percent for the two-day and the nine-day intervals, respectively, with associated *p*-values of 0.00 and 0.00. Thus, the spin-off announcement period returns for takeovers that become spin-offs are comparable to those reported by Hite and Owers (1983), Miles and Rosenfeld (1983), and Schipper and Smith (1983) for a more comprehensive set of spin-offs that may include some spin-offs that began as acquisitions and some that are the result of a divestiture of an internally developed subsidiary.

For a more direct look at the question of concern here, we assemble a sample of spin-offs that did not originate as acquisitions and that occurred over the same time period and are of roughly the same relative size as those in the sample of spin-offs that did begin as takeovers. Specifically, we reviewed all spin-offs not identified as beginning with an acquisition for evidence that the subsidiary was internally developed. In those cases in which there is ambiguity, the spin-off was dropped from further consideration. Of the remaining set, a sample of 120 spin-offs was constructed such that the relative sizes of the spin-offs in this sample and the decades in which the spin-offs occurred match those of the spin-offs in the original sample of spin-offs that began as acquisitions. The two-day and the nine-day announcement period returns for the "nonacquisition" sample of spin-offs are

TABLE 4

Announcement Period Excess Returns to Parent Firms for Spin-Offs during the Period 1962–1991 of Acquisitions that Occurred during the Period 1951–1991

(*p*-values in parentheses)

Sample	Sample Size	Day −1 through Day 0	Fraction Positive	Day −4 through Day +4	Fraction Positive
Full sample	94	2.15%	0.73	2.49%	0.71
(*p*-values)		(0.00)		(0.00)	
1962–1969	7	2.31%	0.86	5.05%	0.71
		(0.02)		(0.00)	
1970–1979	16	1.04%	0.50	1.54%	0.56
		(0.23)		(0.35)	
1980–1991	71	2.38%	0.77	2.48%	0.75
		(0.00)		(0.00)	
Target firms' operations related to acquiring firm[b]	31	1.07%	0.71	2.72%	0.71
		(0.00)		(0.00)	
Target firms' operations unrelated to acquiring firm	63	2.68%	0.75	2.38%	0.71
		(0.00)		(0.04)	
Acquisitions with stock data for both acquiring and target firms	40	1.77%	0.72	2.88%	0.75
		(0.00)		(0.02)	
Two-day acquisition announcement period:					
Positive excess returns to the parent at acquisition announcement	33	1.69%	0.58	3.26%	0.58
		(0.00)		(0.00)	
Negative excess returns to the parent at acquisition announcement	40	2.62%	0.63	3.38%	0.63
		(0.00)		(0.00)	
Value-increasing acquisitions[b]	19	1.02%	0.63	3.08%	0.68
		(0.42)		(0.01)	
Value-decreasing acquisitions[c]	21	2.39%	0.81	3.33%	0.81
		(0.11)		(0.00)	
Day −10 through acquisition agreement date:					
Positive excess returns to the parent at acquisition announcement	25	1.60%	0.56	3.17%	0.60
		(0.02)		(0.01)	
Negative excess returns to the parent at acquisition announcement	48	2.37%	0.63	3.63%	0.60
		(0.00)		(0.00)	
Value-increasing acquisitions[b]	18	0.25%	0.56	1.67%	0.61
		(0.83)		(0.38)	
Value-decreasing acquisitions[c]	22	3.02%	0.86	4.44%	0.86
		(0.00)		(0.00)	

[a] The parent and target firms are considered to be related if any of the SIC codes of the four primary lines of business in each firm overlap at the two-digit level. SIC information was obtained from Dun and Bradstreets' Million Dollar Directory for the year prior to the acquisition.

[b] For this sample, the combined weighted average excess return of the bidder and target firms was positive during the acquisition announcement period.

[c] For this sample, the combined weighted average excess return of the bidder and target firms was negative during the acquisition announcement period.

+1.85 percent and +2.94 percent, respectively, and neither is significantly different from the corresponding statistic for the sample of spin-offs that began with an acquisition. The *p*-values for the differences between the average announcement period returns for the two samples over the two-day and nine-day announcement periods are 0.84 and 0.71, respectively.

Given the apparent time dependency in announcement period returns to acquirers and the lack of any difference in returns for related and diversifying acqui-

sitions, it is interesting to conduct a parallel analysis for spin-offs. These results are presented in Table 4. There does not appear to be any pronounced periodicity in the announcement period returns or, at least, not one that parallels that for acquisitions. For spin-offs, the average announcement period returns are lower during the 1970s than in either the 1960s or the 1980s, but all are positive and significantly different from zero. Similarly, the classification of spin-offs as related or unrelated to the parent does not reveal any strong pattern in returns. For the two-day announcement period, the average excess return to unrelated spin-offs (i.e., those that undo diversifying takeovers) is greater then the two-day return for related spin-offs (+2.68 percent vs. +1.07 percent), but this pattern is not sustained over the nine-day interval in which the excess return to unrelated spin-offs is slightly greater than the excess return to related spin-offs (+2.72 percent vs. +2.38 percent).

The primary concern of this study, however, is whether the observed wealth gains at spin-off announcements represent the re-creation of value destroyed (or expected to be destroyed) at the time of the acquisition. To this point, based on average announcement period returns, the data provide only modest support for that contention. We consider that issue further by separating the sample of spin-offs into those for which the acquirer's announcement period return at *acquisition* was positive and those for which it was negative and then examine the announcement period returns at *spin-off*. In so doing, we are conditioning spin-off announcement period returns on the market's reaction at the time of the acquisition. If the correction-of-a-mistake hypothesis is correct, spin-off announcement period returns should be significantly more positive for those spin-offs in which the acquisition return is negative than those for which the acquisition announcement period return is positive.

As shown in Table 4, spin-off announcement period returns are positive and significantly different from zero regardless of whether the acquisition announcement period return is positive or negative and regardless of the interval over which acquisition or spin-off returns are measured. Additionally, and consistent with the correction-of-a-mistake hypothesis, the average spin-off announcement period return is larger for acquirers that experienced a negative market response at the acquisition announcement than for acquirers that experienced a positive announcement period return at acquisition. For example, for the set of acquirers for which the two-day acquisition announcement period return is positive, the average two-day spin-off announcement period return is +1.69 percent (p-value = 0.00) and the average nine-day spin-off announcement period return is +3.26 percent (p-value = 0.00). For the sample of acquirers for which the two-day acquisition announcement period return is negative, the average two-day spin-off announcement period return is +2.62 percent (p-value = 0.00), and the average nine-day return is +3.38 percent (p-value = 0.00). However, the p-values for the differences between the spin-off announcement period returns for two samples are only 0.58 and 0.98. When acquirer returns are measured over the interval from 10 days before the initial announcement date through the acquisition agreement date and the sample is separated into those with positive and negative acquisition announcement period returns, the two-day spin-off announcement period return for the former set is +1.60 percent and the two-day spin-off announcement period return for the latter set is +2.37 percent, but the p-value for the difference between the two is only 0.54.

Similarly, when the spin-off announcement returns are measured over the nine-day interval, the average excess return is higher for the sample for which the acquirer experienced a negative excess return at the acquisition than for the sample that experienced a positive excess return at the acquisition, but the difference between the two has a *p*-value of only 0.89. Thus, while the average spin-off announcement period return is higher when the bidder experiences a negative excess return at acquisition than when the bidder experiences a positive excess return at the time of acquisition, the differences are not statistically significant.

The same experiment is conducted for the 40 takeovers in which stock returns are available for both the bidder and target firms at the acquisition date. That is, the 40 takeovers in this sample are separated according to whether the combined excess return of the bidder and target was positive or negative during the various acquisition announcement periods. As shown in Table 4, the spin-off announcement period returns are higher for the "value-decreasing" acquisitions than for the "value-increasing" acquisitions when acquisition announcement period returns are measured over the two-day interval around the acquisition announcement, but the differences between the spin-off announcement period returns (whether measured over two days or nine days) are often not significantly different from each other at the 0.10 level. The differences between the samples are larger at the spin-off announcement date when the acquisition returns are measured over the interval from 10 days before the initial announcement through the acquisition agreement date, but they are still not significantly different from each other at the 0.10 level. For the set with negative acquisition announcement period excess returns for this interval, the two-day average spin-off announcement period excess return is +3.02 percent; for the set with positive excess returns over this interval, the two-day average spin-off announcement period excess return is only +0.25 percent.[9] The *p*-value for the difference between the two is only 0.18. Similar results are obtained when the spin-off announcement period returns are measured over the nine-day interval surrounding the spin-off announcement. In this case, the *p*-value for the difference between the two samples is 0.26.[10]

E. Multivariate Tests

Although the differences are not statistically significant, the univariate tests suggest that value-decreasing takeovers are associated with larger spin-off returns than are value-increasing takeovers. However, there may be other phenomena at work in the data as well (for example, a periodicity effect) that may influence the apparent relation between acquisition announcement returns and spin-off announcement returns. To control for other factors that may influence returns, we estimate two sets of cross-sectional multivariate regressions using the maximum likelihood regression procedure of Eckbo, Maksimovic, and Williams (1990). In the first set of regressions (reported in Table 5), the dependent variable is the two-day spin-off announcement period excess return. In the second set of regressions

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[9] For the set with negative acquisition announcement period returns, the average acquisition announcement period excess return is −8.99 percent. For the set with positive acquisition announcement period excess returns, the average acquisition announcement period return is +5.24 percent.

[10] Although not reported in the table, when the sample is split according to the acquirer's nine-day (or combined firm nine-day) announcement period return, the results are very similar to those in Table 4.

(reported in Table 6), the dependent variable is the nine-day spin-off announcement period excess return. Parallel regressions are estimated for each of the two dependent variables. In the first regression in each set, the independent variables include dummy variables to indicate whether the spin-off occurred during the 1970s or the 1980s, the dollar market value of the spun-off subsidiary as a fraction of the dollar market value of the pre-spin-off parent firm (i.e., to control for differences in the relative sizes of the parent and the subsidiary), and a dummy variable to indicate whether the acquirer and the target are in the same industry according to their two-digit SIC code (i.e., to answer the question of whether the original acquisitions are diversifying or related). One other factor that may influence the relation between the spin-off and acquisition announcement period excess returns is the relative length of time between the original acquisition and the spin-off. For example, the effect may be stronger for acquisitions and spin-offs that occur relatively closer in time to each other. To control for this effect, two dummy variables are included in the regressions. The first indicates whether the number of months that elapsed between the acquisition and the spin-off is 0 to 44. The second indicates whether the number of months lies between 45 and 88. Recall that the median number of months between the acquisition and the spin-off is 88.

The independent variables in the second regression in both Tables 5 and 6 include all those in the first regression plus the acquirer's two-day acquisition announcement period excess return. The independent variables in the third regression in each table include all those in the second except that the acquirer's nine-day announcement period excess return replaces the acquirer's two-day announcement period excess return. In the fourth regression, the independent variables are the same as those in the second, except that the acquirer's excess return calculated over the interval from 10 days before the initial announcement through the acquisition agreement date replaces the acquirer's two-day excess return. The sample size for these four regressions is 73. The results are reported in columns (1) through (4) of Tables 5 and 6.

According to the tables, relative size is a significant explanatory variable in each regression (all p-values < 0.01). The time period of the spin-off and the dummy variable for whether the parent and the subsidiary are related is not statistically significant in any of the regressions. There is some modest evidence that the relative time that has elapsed between the takeover and the spin-off is important when the dependent variable is the two-day excess return (Table 5), but not when the dependent variable is the nine-day spin-off excess return (Table 6).[11] Most importantly for the question addressed in this paper, the coefficient of the acquisition announcement period return is negative in each of the relevant regressions, indicating that higher spin-off returns are associated with lower returns to the acquiring firm at the acquisition. The significance level of this relation differs across the regressions. The relation is most significant in the regressions in Table 6 in which the dependent variable is the nine-day spin-off announcement period excess return. The p-values here are 0.02, 0.04, and 0.06. In Table 5, the p-values are 0.37, 0.08, and 0.02.

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[11]We also counted the number of months that elapsed between the takeover and the spin-off and included that as a measure of time between the two events. That variable also does not show up as significant in the regressions.

TABLE 5

Cross-Sectional Regression Analysis of Two-Day Announcement Period Excess Returns at the Spin-Off Announcement of Previously Acquired Subsidiaries, 1962–1991

Independent Variable	[1]	[2]	[3]	[4]	[5][a]	[6][a]	[7][a]
Intercept	0.0260 (0.27)	0.0262 (0.27)	0.0268 (0.25)	0.0285 (0.21)	0.0336 (0.56)	0.0387 (0.47)	0.0424 (0.45)
Spin-off in 1970s	−0.0220 (0.40)	−0.0222 (0.40)	−0.0195 (0.45)	−0.0238 (0.34)	−0.0213 (0.72)	−0.0289 (0.60)	−0.0365 (0.51)
Spin-off in 1980s	−0.0025 (0.91)	−0.0025 (0.91)	−0.0040 (0.85)	−0.0068 (0.76)	−0.0163 (0.76)	−0.0216 (0.66)	−0.0225 (0.68)
Relative size of spin-off[b]	0.1081 (0.00)	0.1080 (0.00)	0.1114 (0.00)	0.1065 (0.00)	0.0877 (0.21)	0.0954 (0.15)	0.0878 (0.12)
Related acquisition[c]	−0.0199 (0.12)	−0.0201 (0.12)	−0.0181 (0.15)	−0.0188 (0.13)	−0.0064 (0.73)	−0.0052 (0.76)	−0.0108 (0.55)
Interval from acquisition to spin-off: 0–44 months	−0.0262 (0.06)	−0.0260 (0.07)	−0.0327 (0.02)	−0.0320 (0.02)	−0.0248 (0.20)	−0.0320 (0.08)	−0.0281 (0.14)
Interval from acquisition to spin-off: 45–88 months	−0.0092 (0.53)	−0.0093 (0.52)	−0.0118 (0.41)	−0.0128 (0.36)	−0.0049 (0.80)	−0.0122 (0.52)	−0.0089 (0.66)
Acquirer's day 0 to day −1 excess return		−0.0310 (0.39)					
Acquirer's day −4 to day +4 excess return				−0.1485 (0.08)			
Acquirer's day −10 through agreement date excess return				−0.1317 (0.02)			
Acquirer and target combined day 0 to day −1 excess return					−0.1542 (0.52)		
Acquirer and target combined day −4 to day +4 excess return						−0.2398 (0.03)	
Acquirer and target combined day −10 through agreement date excess return							0.2412 (0.03)
Sample size	73	73	73	73	40	40	40
R^2	0.147	0.198	0.228	0.252	0.138	0.185	0.194

The dependent variable is the two-day spin-off announcement period excess return. Regressions are estimated using the maximum likelihood procedure of Eckbo, Maksimovic, and Williams (1990) (p-values are in parentheses).

[a] Includes the 40 observations where stock price data are available for the acquiring and target firms at the acquisition date.

[b] Calculated as the market value of the spun-off firm measured on the first day of trading following the spin-off divided by the market value of the parent firm on the day prior to the spin-off ex-date.

[c] The parent and target firms are considered to be related if any of the SIC codes of the four primary lines of business in each firm overlap at the two-digit level. SIC information was obtained from Dun and Bradstreets' Million Dollar Directory for the year prior to the acquisition.

The regressions in columns (5) through (7) of each table parallel those in columns (2) through (4), except that the acquirer's acquisition excess return is replaced as an independent variable by the *combined* excess return to the bidder and the target firm. As might have been anticipated from the univariate tests of Table 4, the relation between spin-off announcement period excess returns and takeover announcement period excess returns is slightly stronger when the independent variable is the combined change in value of the bidder and target firms. In Table 6, the p-values are 0.07, 0.01, and 0.05 and, in Table 5, they are 0.52, 0.03, and 0.03. The only regression in which the coefficient is not significant on at least the 0.10 level is the one in which both the spin-off and acquisition announcement period excess returns are measured over a two-day interval. The relation is much stronger when both the spin-off and the acquisition announcement period returns are measured over longer intervals. A plausible (although not airtight) argument could be made that, given the leakage that often surrounds corporate takeovers and

TABLE 6

Cross-Sectional Regression Analysis of Nine-Day Announcement Period Excess Returns at the Spin-Off Announcement of Previously Acquired Subsidiaries, 1962–1991

Independent Variable	[1]	[2]	[3]	[4]	[5][a]	[6][a]	[7][a]
Intercept	0.0182 (0.50)	0.0122 (0.65)	0.0183 (0.50)	0.0198 (0.48)	−0.0035 (0.94)	0.0027 (0.95)	0.0051 (0.92)
Spin-off in 1970s	0.0058 (0.85)	0.0120 (0.69)	0.0075 (0.80)	0.0070 (0.82)	0.574 (0.25)	0.0486 (0 30)	0.0440 (0.39)
Spin-off in 1980s	−0.0112 (0.65)	−0.0073 (0.77)	−0.0075 (0.76)	−0.0103 (0.68)	0.0074 (0.87)	0.0014 (0.97)	0.0013 (0.97)
Size of spin-off[b]	0.1467 (0.00)	0.1417 (0.00)	0.1378 (0.00)	0.1335 (0.00)	0.0915 (0.12)	0.0980 (0.07)	0.0900 (0.13)
Related acquisition[c]	−0.0083 (0.57)	0.0059 (0.69)	0.0004 (0.98)	0.0025 (0.89)	0.0255 (0.10)	0.0259 (0.07)	0.0213 (0.18)
Interval from acquisition to spin-off: 0–44 months	0.0074 (0.65)	0.0056 (0.74)	0.0054 (0.75)	0.0001 (0.99)	0.0023 (0.88)	−0.0040 (0.80)	0.0040 (0.81)
Interval from acquisition to spin-off: 45-88 months	−0.0021 (0.90)	−0.0014 (0.93)	−0.0076 (0.65)	−0.0074 (0.66)	0.0095 (0.57)	0.0022 (0.89)	0.0058 (0.52)
Acquirer's day 0 to day −1 excess return		−0.4903 (0.02)					
Acquirer's day −4 to day +4 excess return			−0.2074 (0.04)				
Acquirer's day −10 through agreement date excess return				−0.1843 (0.06)			
Acquirer and target combined day 0 to day −1 excess return					−0.2272 (0.07)		
Acquirer and target combined day −4 to day +4 excess return						−0.2553 (0.01)	
Acquirer and target combined day −10 through agreement date excess return							−0.1940 (0.05)
Sample size	73	73	73	73	40	40	40
R^2	0.121	0.185	0.197	0.191	0.211	0.322	0.218

The independent variable is the nine-day spin-off announcement period excess return. Regressions are estimated using the maximum likelihood procedure of Eckbo, Maksimovic, and Williams (1990) (p-values are in parentheses).

[a] Includes the 40 observations where stock price data are available for the acquiring and target firms at the acquisition date.

[b] Calculated as the market value of the spun-off firm measured on the first day of trading following the spin-off divided by the market value of the parent firm on the day prior to the spin-off ex-date.

[c] The parent and target firms are considered to be related if any of the SIC codes of the four primary lines of business in each firm overlap at the two-digit level. SIC information was obtained from Dun and Bradstreets' Million Dollar Directory for the year prior to the acquisition.

other major corporate events, the longer time intervals are the more appropriate ones to consider. We will not make that argument, but merely note that the overall picture that appears to emerge from the analysis is that there is a negative relationship between spin-off announcement period returns and acquisition announcement period returns and that the relationship is more significant for the analysis that uses the longer announcement period.[12]

V.   Comments and Conclusion

Several prior studies document average positive excess returns of +2 percent to +3 percent around announcements of corporate spin-offs. While a number of

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[12] Each of the regressions was checked for outlier observations. In each case where the residuals gave evidence of an outlier, those observations were dropped from the analysis and the regression was reestimated. In no case did the sign of any coefficient change and, in no case did a coefficient that was significant at the 0.05 level become insignificant at that level.

hypotheses have been explored to explain this effect, none is able to explain fully the shareholder gains associated with corporate spin-offs. This paper considers the conjecture that the gains associated with spin-offs generally come about because some spin-offs represent the undoing of an earlier unwise acquisition. According to this "correction-of-a-mistake" hypothesis, the average stock price increases surrounding spin-offs merely represent the re-creation of wealth lost at the time of the original acquisition. The primary predictions of this hypothesis are as follows: first, at the time of acquisitions, the announcement period excess returns to the bidding firm are negative for acquisitions that later result in spin-offs. A stronger version of this prediction is that the combined announcement period excess return to the bidder and the target at the time of the acquisition are negative for acquisitions that later become spin-offs. Second, the average spin-off announcement period excess return for a sample of acquisitions that subsequently became spin-offs is larger than for spin-offs generally and for a sample of spin-offs that did not begin as acquisitions. Third, the spin-off announcement period excess returns for spin-offs that began with an acquisition are negatively correlated with the original acquisition announcement period excess returns. That is, the greater the original mistake, the greater the rebound when the spin-off is announced.

   We test the various predictions of the correction-of-a-mistake hypothesis with a sample of 94 spin-offs that occurred over the period 1962 through 1991. In general, the results are consistent with the first and third predictions of the hypothesis, but not the second.

   There are both managerial implications and implications for researchers that follow from the results. For managers, the results suggest that managers who undertake poor acquisitions can redeem themselves, at least partially, by subsequently divesting the unwise acquisition. For researchers, the results suggest that future investigations of the source of gains associated with spin-offs may be more successful if the investigators control for whether the spun-off subsidiary was the target of a prior acquisition.

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