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The Effect of Voluntary Sell-off Announcements on Shareholder Wealth

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ABSTRACT

Sell-off activities arise when a firm sells part of its assets (e.g., a segment, a division, etc.) but continues to exist in essentially the same form. This study investigates the effect of voluntary sell-offs on stock returns. From a sample of over 1000 sell-off events (first public announcements), the evidence shows that both sellers and buyers earn significant positive excess returns from these transactions. The excess returns earned by buyers are smaller than those earned by sellers. There is also evidence that sell-off announcements are preceded by a period of significant negative returns for the sellers which suggests that the sellers, on average, performed poorly prior to their sell-off activities.

SUBSTANTIAL RESEARCH HAS BEEN undertaken in recent years on mergers, acquisitions, tender offers, capital structure changes, and other financial planning topics. This research has considerably expanded our knowledge about the association of these decisions with the welfare of the stockholders involved in these transactions.¹ Selling a portion of the firm's assets is another important financial planning decision.² This paper investigates the effect of voluntary sell-off announcements on shareholder wealth. A sell-off is defined as selling part of a firm's assets (e.g., a segment, a division, etc.), while the firm continues to exist in essentially the same form as that prior to the sell-off. This study does not examine the effects of involuntary (ordered by the government) sell-offs and other similar activities such as spin-offs, leveraged buy-outs, liquidations, reorganizations, etc.³

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¹ Numerous studies on mergers and related issues find that stockholders of the acquired or the target firms earn "abnormal returns," and these returns are not completely dissipated even when the proposals are not completed (e.g., Mandelker [23], Dodd and Ruback [12], Langetieg [21], and Dodd [11]). Jensen and Ruback [20] and Schwert [30] provide recent reviews of this literature. Since there exists a large number of merger-related studies, no criticism is implied of an omitted study in the references.

² For a discussion of sell-offs in the nonacademic publications, see Anreder [3], Adkins [1], and Business Week [10]. Also see the following front page articles in the *Wall Street Journal*: (11-5-76, 1-3-79, 1-15-79, 6-20-80, and 8-11-81).

³ Ellert [14] examines the stockholder returns to firms involved in forced divestitures because of the actions of the Antitrust Division of the Department of Justice or the Federal Trade Commission. He finds no significant effects of these divestiture cases on the defendant firm's security prices from the time that the suit was filed until it was settled.

Prior research on sell-offs has been limited. Boudreaux [6] finds a positive stock price effect for spin-offs and sell-offs together for the divesting firms up to three months around the event date, although he does not perform statistical tests. He also does not distinguish between sell-offs and spin-offs. Alexander et al. [2] examine a sample of 53 firms and find positive but small (not significant at the 5% level of significance) excess returns to the stockholders of the selling firms. Their weak results could be due to the small sample size. Further, their sample selection procedure appears to favor small sell-offs since they select firms which did not have other sell-off announcements within nine months of the event date. Usually large sell-offs have a number of consecutive announcements in the *Wall Street Journal*. No study seems to have examined the stock price behavior for the buyers in this situation.

This paper extends the work of Alexander et al. [2]. The current sample includes over 1,000 first publicly available announcements (events) which is more than twenty times their sample. This paper also examines the stock price reaction for the buying firms in those transactions. The results indicate that both sellers and buyers earn significant positive excess returns around the sell-off announcements. Further, examination of the pre-event period suggests that, for the sellers, the sell-off announcements are preceded by a period of significant negative returns.

The rest of the paper is organized as follows. Section I discusses possible motivations of the sellers. Section II discusses implications for the buyers. Data are described in Section III, followed by a description of methodology in Section IV. Section V presents the empirical results. Conclusions are presented in Section VI.

I. Motivations of the Sellers

In this analysis, it is assumed that managers act in the best interests of stockholders. For sell-off decisions, this assumption appears reasonable. First, such decisions are widely publicized. If such decisions reduce shareholders' wealth, then shareholders may attempt to remove the management. Second, sell-off decisions often require the approval of the board of directors and/or the stockholders.⁴

There are a number of scenarios that could lead management to engage in sell-off activity. The following four scenarios suggest specific concepts that could be behind the sell-off decisions. First, unforeseen circumstances such as poorer than expected earnings or cash flows could create financial problems for a corporation. A sequence of unexpected poor earnings is likely to cause liquidity problems. For levered firms, these unfavorable results increase the probability of default on debt repayment. The capital structure of the firm will also change. Assuming that an optimal capital structure exists and that the firm was operating at the

⁴ As an example, the *Wall Street Journal* of March 29, 1978 reports that the sale of an office-furniture manufacturing unit of Massey-Ferguson is subject to the approval of its board of directors. Such conditional sales appear to be quite frequent.

optimal capital structure prior to the losses, the changed capital structure is expected to be suboptimal. Since the firm value is maximized at the optimal capital structure, the value of the firm can be increased by bringing the capital structure back to the optimal level. Among many possible alternatives, one remedy for the management to improve the financial structure of the firm is to sell some of the assets (and repay some debt). To the extent the sale is not completely anticipated by the market, we should observe a positive price reaction to the firm's sell-off announcement.⁵

Second, a sell-off can be viewed as a partial merger. If certain parts of the firm are more valuable to the outsiders than to the current owners, it would be in the shareholders' interest to sell those assets. In mergers, the entire company is acquired by the buyers, whereas in sell-offs, only part of the company is acquired by the buyers. From this perspective, it is expected that the stock price reaction to the sellers will be similar to that experienced by the target firm's stocks in numerous merger-related studies (see, for example, Mandelker [23], Dodd and Ruback [12], Dodd [11], Asquith [4], etc.). In these studies, the stockholders of the target firms earn significant positive excess returns around the first public announcements. Similarly, we expect a positive stock price reaction for the sellers' stocks to the sell-off announcements.

Third, sell-offs can also be compared to spin-offs. In a spin-off, a company distributes all the common shares of its subsidiary to the existing shareholders. There is no buyer per se, and there are no cash flow implications. Nevertheless, there are similarities between spin-offs and sell-offs. In both spin-offs and sell-offs, a segment of the company is effectively separated from its existing management. Both decisions could emanate from the parent's desire to specialize in a limited number of business activities.⁶ Since spin-off announcements are known to be associated with increases in common stock values (Hite and Owers [18], Miles and Rosenfeld [24], Schipper and Smith [28], etc.), sell-off announcements are also expected to be associated with positive stock price reaction.

The final scenario is based on agency theory. Under this perspective, sell-offs may be motivated by a desire to transfer wealth. This can be achieved by paying dividends to the common stockholders from the proceeds of the sale of the assets. Since this effectively reduces the probable payments to the bondholders, it results in a transfer of wealth from bondholders to stockholders if the value of the firm is assumed to be unchanged (see Jensen and Meckling [19], Smith and Warner [31], and Myers [26]). This scenario also suggests that sellers would experience a positive stock price reaction.

These arguments are obviously not purported to be exhaustive, and many other motivations for sell-offs probably exist that could imply both positive and

⁵ A firm in financial trouble may also find it difficult to raise funds even with collateralized financing since strict enforcement of collaterals (in the event of bankruptcy or default) is usually not possible. Warner [33] discusses and presents evidence of unsuccessful enforcement of priorities in the event of bankruptcies.

⁶ For example, Union Carbide (*Wall Street Journal*, 10-29-79), while announcing the possible sale of its metal working chemicals business stated, "Recent strategic planning studies have concluded that the metal working chemicals business doesn't fit into the corporation's business portfolio and long range plans."

negative effects on the stock prices.⁷ Nevertheless, an examination of returns to sellers' stocks around the first publicly available sell-off announcements is expected to indicate the effect of such decisions on shareholder wealth. This paper does not extend the analysis to discriminate among various hypotheses. The main purpose of the paper is to examine the overall effect of sell-off announcements on shareholder wealth.

II. Implications for the Buyers

The buyers in these transactions can be viewed as investors in new projects. No study has examined the stockholder returns to buyers in the sell-off case. Since the sell-offs could be viewed as partial mergers, the merger literature is the major motivating factor behind the examination of the effect on the buyers' stock prices. Numerous merger-related studies have examined the effects of takeovers on bidders' stock prices around the time of announcement of merger attempts. The results vary somewhat across studies. The two- to three-day announcement effect (i.e., the day before, the day of announcement, and the day after) is significantly negative in Dodd [11], but positive and insignificant in Asquith [4] and Eckbo [13]. Jensen and Ruback [20] summarize the literature in this area and conclude that, "The estimated abnormal returns to successful bidding firms . . . suggest that mergers are zero net present value investments for bidders . . . except for the Dodd estimates." This result is consistent with the argument that the acquisition market is perfectly competitive.⁸ In the market with a large number of potential buyers, all the gains from the expected synergy will accrue to the holders of the unique assets, i.e., the sellers earn positive excess returns whereas the buyers earn zero excess returns.⁹ Ruback [27] discusses this issue in great detail and presents results suggesting a competitive acquisition market. An examination of the buyers' stock prices around sell-off announcements should further help us understand the nature of this market. Assuming that the buyers, on average, invest in positive (at least nonnegative) net present value projects, they are expected to experience positive (at least nonnegative) stock price effects.

⁷ Other possible reasons for sell-offs included the following: (i) to relax regulatory constraints, e.g., by selling a foreign subsidiary or by selling a regulated subsidiary, (ii) to renegotiate the labor contracts, (iii) to improve reported profits for management compensation or other management goals, (iv) to manipulate earnings for tax/political reasons, (v) to repay debt, (vi) to avoid bankruptcy and other possible defaults on loans, and (vii) to facilitate mergers, etc. A large number (over 500) of reports in the *Wall Street Journal* were also read. In most cases, the companies either decline to give a reason for the sell-off or state a catch-all reason such as, "strategic planning" or "to improve stock price", etc. One important difference between mergers and sell-offs appears to be that the sell-offs are usually initiated by the sellers whereas the takeover attempts are usually initiated by the bidders (buyers). A statistical comparison on this issue, however, is not available.

⁸ Asquith et al. [5] suggest that the inconclusive findings of the earlier studies may be due to methodological deficiencies. Asquith et al. [5] find that mergers provide positive cumulative excess returns for the stockholders of bidding firms. They control for factors such as target size, success of the merger bid, and the time period in which the bid occurs.

⁹ Strictly speaking, the successful acquirer earns the difference between the expected benefits on the acquisition (or merger) less the expected benefits to the second best offerer. In a perfectly competitive market, this difference would approach zero.

III. Data

The sample is composed of sell-offs reported in the 1976 to 1978 issues of the *Mergers and Acquisitions Journal* which publishes a large list of recent sell-offs. Each sample firm meets at least one of the two following criteria:

1. The sale of the unit is for at least \$10 million, or the sale is announced to be a "large" sale by the sellers.
2. A company makes a specific announcement of a sell-off plan. (Specific announcements of sell-off plans are usually made for large sell-offs only.)

These firms were examined in the *Wall Street Journal Index* (henceforth, the *WSJI*) until the first available news item relating to the sell-off was located. The first published report in the *WSJI* is used as a proxy for the date that information about the sell-off first became public. These dates are hereafter called *event dates*.¹⁰ A single firm in the sample may have more than one event. Results are, however, also examined by restricting each firm to a single (first available) event.

The event date for the buyer need not be the event date for the seller. The event date for the buyer occurred when the possible buyer was initially identified in the *WSJI*. In some cases, the initial report indicated that the negotiations for the sale of a segment were in progress, but the potential buyer was not disclosed. In such cases, the buyer was usually disclosed in a subsequent news item.¹¹

A number of screens were applied to the data. First, the stock returns data had to be available on the daily CRSP (Center for Research in Security Prices of the University of Chicago) excess returns tape. Second, the sales involved the sale of operating assets, i.e., sales involving marketable securities were not included. Third, the sales were not associated with bankruptcy or liquidation. Fourth, the sales were voluntary, i.e., not ordered by the government. And finally, the sales were not subsidiary-parent transactions.

Before the data were checked for the availability of returns on the CRSP tape, there were 1107 event dates for sellers and 328 event dates for the buyers. This is a very large sample for an event study. The main advantage of a large sample is that even a small effect can be detected (see Brown and Warner [9] for such evidence). The final sample size is somewhat smaller (as reported in the tables) because of missing returns on the CRSP tape.

IV. Methodology

This study uses daily common stock returns available on the daily CRSP excess return tape of the University of Chicago. The daily excess return for security *i*

¹⁰ All the firms in the sample were examined in the *WSJI* such that there was no sell-off related news for at least one calendar year prior to the known announcement. If a sell-off related news item was located, the process was repeated until the "one-year rule" was satisfied. About one-third of the sample was initially checked for two calendar years of the *WSJI*, but it soon became apparent that sell-offs occur in clusters. Thus, the search was limited to one calendar year. In addition to the sample from the *Mergers and Acquisitions Journal*, some sell-off announcements were discovered by reading the *WSJI*. These were also included in the final sample.

¹¹ In a few cases, the initially announced buyer is dropped. In those cases, the event date for the second buyer occurs when the second buyer's name is first reported in the *Wall Street Journal Index*.

(available on the tape) is estimated by

$$XR_{it} = R_{it} - E(\tilde{R}_{it})$$

where

- t = day measured relative to an event,
- XR_{it} = excess return on security i for day t ,
- R_{it} = actual return on security i for day t , and
- $E(\tilde{R}_{it})$ = expected return on security i for day t .

The $E(\tilde{R}_{it})$ is estimated by grouping all the New York Stock Exchange and the American Stock Exchange securities into ten control portfolios according to their estimated betas or estimated standard deviations. The results presented in this paper are based on the beta controlled portfolios.¹²

Average excess returns (across firms in the sample) for each relative day d were calculated as

$$AXR_d = \frac{1}{M} (\sum_{i=1}^M XR_{id})$$

where M is the number of securities for day d .¹³ Daily cumulative average excess returns, CAXRs, are sums of the average excess returns over event time, i.e., CAXR for the period $d = a$ until $d = b$ is defined as follows:

$$CAXR_{ab} = \sum_{d=a}^b AXR_d$$

The data were analyzed using several different methodologies.¹⁴ The overall tenor of the results was similar across methodologies although the t -statistics differed somewhat. The results presented in the paper used the following procedure.¹⁵

Portfolios of firms in the sample were formed in event time. Day zero was defined as the date of the publication of the news in the *WSJI*. For the analysis

¹² The method of estimating betas and other market model parameters for this purpose is described in Scholes and Williams [29].

¹³ When a security has missing returns for one or more days, the reported CRSP return for the day after the missing return day(s) is a multi-day return. To overcome the possibility of including a multi-day return in a one-day return, the returns on the missing day(s) and the day after were not included in computing AXRs and CAXRs. For the treatment of missing returns in the estimation period, see footnote 15.

¹⁴ The excess returns tape became available to us only recently. Prior to that some of the analysis was performed using the one-factor market model described in Fama [15] and the mean adjusted returns method described in Brown and Warner [8, 9]. Switching to the excess returns tape did not change the tenor of the results. The "event time" methodology described in the text was pioneered by Fama et al. [17]. Schwert [30] discusses some appropriate methodological issues related to this approach for merger and other similar studies. For an example of a study using the excess returns tape and some additional explanation, see Asquith [4].

¹⁵ Missing returns (in the estimation period) were dealt with in two different ways with identical results. First, the missing returns were replaced by the mean of the portfolio returns. Second, the missing returns were replaced by the average return from a 60-day period (prior to the missing returns) for the same firm. The results reported use the former approach.

of the portfolio excess returns, two types of dependencies across returns were considered. First, several firms may have the same event date which could lead to cross-sectional dependence in excess returns. To eliminate this dependence, the firms with the same event date were formed into equally weighted portfolios and considered as one security. The second problem relates to the estimation of the standard deviation of the portfolio excess returns. Usually the standard deviation of the portfolio is estimated from an estimation period in which the portfolio has the same securities as it had in the event period. Since a firm in the present sample may have more than one event, the time series of returns in the estimation period (for estimating the standard deviation of the portfolio return) may not be independent if the same firm is included more than once in the estimation period. To eliminate this problem, only one estimation period for each firm was used which was weighted according to the number of events for that firm. The estimation period for the results presented is from relative day -480 to day -361 from the earliest event date for that firm.¹⁶ As a further precaution, the first-order autocorrelation for the portfolio return was also examined and was found to be insignificantly different from zero at the 5% level of significance.¹⁷

A *t*-statistic that tests whether the average excess return of the portfolio for day *d* (AXR_d) is significantly different from zero was calculated by

$$t_d = AXR_d/S$$

where *S* is the estimated standard deviation of the AXR_s calculated from the portfolio of the firms in the sample for day -480 to day -361 relative to the first event date for each firm. Similarly, the *t*-statistic for $CAXR$ for a period of *N* days from day *a* to day *b* was calculated by

$$t_{ab} = CAXR_{ab}/S\sqrt{N}$$

V. Results

A. Sellers

Table I presents the excess returns for day -120 to day +120, where day zero is the first publication date in the *WSJI*. It is observed that for day -1 and day -2, sellers earn significant positive excess returns. The *t*-statistics for day -1 and day -2 are 5.95 and 2.15, respectively, which are statistically significant at the conventional levels of significance. The cross-sectional frequency distribution also indicates that the percentage of positive excess returns is significantly larger

¹⁶ The main reason for going as far back as 360 days was that the sell-off firms tended to perform poorly in the period immediately prior to the sell-off announcements. Also, similar results were obtained when a post-event estimation period of 120 days was used.

¹⁷ The significance test for the first-order autocorrelation was based on the following method. The expected value of the *t*-order autocorrelation is $-1/(T - t)$ and the standard deviation is $\sqrt{1/(T - t)}$, where *T* is the number of observations in the sample (120 in the present case). For a further description, see Fama [15, p. 118].

Table I
Sellers, Examination of Excess Returns Around Sell-off
Announcements

Panel A. Average Excess Returns (AXR), *t*-statistics for AXR, and Cumulative Average Excess Returns (CAXR) Around the Sell-off Announcements.

Day	No. of Events	AXR	<i>t</i> -statistic	CAXR
-120	1068	0.0006	0.76	0.0006
-110	1065	-0.0020	-2.74**	-0.0039
-100	1065	-0.0009	-1.21	-0.0052
-90	1066	-0.0019	-2.51**	-0.0081
-80	1068	0.0007	0.97	-0.0118
-70	1067	0.0002	0.23	-0.0132
-60	1069	-0.0005	-0.69	-0.0133
-50	1068	-0.0001	-0.14	-0.0162
-40	1067	-0.0004	-0.53	-0.0238
-30	1068	-0.0015	-2.02*	-0.0288
-20	1068	-0.0024	-3.20**	-0.0337
-10	1068	0.0003	0.37	-0.0349
-9	1068	0.0002	0.27	-0.0347
-8	1068	-0.0014	-1.92	-0.0361
-7	1068	-0.0024	-3.21**	-0.0385
-6	1067	-0.0007	-0.88	-0.0391
-5	1068	0.0001	0.09	-0.0391
-4	1068	0.0006	0.80	-0.0385
-3	1067	0.0000	0.05	-0.0385
-2	1064	0.0016	2.15*	-0.0369
-1	1062	0.0044	5.95**	-0.0325
0	1063	0.0009	1.27	-0.0315
1	1067	-0.0003	-0.41	-0.0318
2	1067	-0.0004	-0.52	-0.0322
3	1067	-0.0011	-1.50	-0.0333
4	1069	0.0007	0.96	-0.0326
5	1069	-0.0006	-0.83	-0.0332
6	1067	0.0007	0.92	-0.0326
7	1064	0.0006	0.84	-0.0319
8	1064	0.0003	0.40	-0.0316
9	1064	0.0010	1.37	-0.0306
10	1064	-0.0013	-1.73	-0.0319
20	1066	-0.0023	-3.15**	-0.0327
30	1066	-0.0004	-0.55	-0.0340
40	1062	-0.0006	-0.76	-0.0334
50	1058	-0.0013	-1.79	-0.0353
60	1056	-0.0013	-1.73	-0.0378
70	1056	-0.0002	-0.23	-0.0397
80	1053	0.0012	1.68	-0.0368
90	1051	-0.0015	-1.99*	-0.0379
100	1049	0.0006	0.77	-0.0359
110	1044	-0.0000	-0.06	-0.0371
120	1043	-0.0009	-1.25	-0.0394

Day 0: Date of the first publication of the news in the *Wall Street Journal*.

* Significant at 5% level of significance.

** Significant at 1% level of significance.

Table I—Continued

Panel B. Time Series *t*-statistics for Various Intervals.

Interval (Days)	CAXR	<i>t</i> -statistic
–120 to –61	–0.013	–2.23*
–120 to –11	–0.035	–4.54**
–60 to –11	–0.022	–4.29**
–10 to –6	–0.004	–2.40*
–5 to –1	0.007	4.04**
1 to 5	–0.002	–1.03
6 to 10	0.001	0.40
11 to 60	–0.006	–1.13
61 to 120	–0.002	–0.28
11 to 120	–0.007	–0.97

than expected by chance.¹⁸ In sum, the results indicate that the sell-off announcements are associated with statistically significant positive excess returns to the sellers.¹⁹

Panel B of Table I presents results for a number of subperiods. Since a firm can have two or more event dates adjacent to one another, all the event dates for a firm that were within five days of one another were eliminated. Thus the five-day period (day –5 to day –1) does not have time series dependence. For the period from day –5 to day –1, the first announcement is associated with an excess return of 0.7%, which is statistically significant (*t*-statistic of 4.04). The longer periods may have some dependence across time. Subject to this limitation, the results in Panel B of Table I suggest that the sellers, on average, performed poorly in the pre-sell-off period for at least 120 days before the event date. The *t*-statistic for day –120 to day –11 is –4.54. Subsection C presents a more comprehensive analysis of the pre-event period confirming this observation.

Also note that the CAXRs for periods after the event date are essentially zero. This evidence is consistent with the hypothesis that the market is efficient in a semistrong sense with respect to this particular event. This observation also increases confidence in the various test statistics presented. If the test statistics

¹⁸ The cross-sectional examination used the following approach. For a binomial distribution, the expected number of positive excess returns equals np , where n is the sample size and p is the probability of observing a positive excess return. The variance is $np(1 - p)$. This estimate is used to compute a *z*-statistic as (actual positive excess returns – expected number)/standard deviation. For a large number (larger than 30 or so), Snedecor and Cochran [32] suggest that a normal approximation of the binomial distribution is appropriate. Since the sample size for most of the tests in this paper exceeds 300, the normal approximation of the binomial representation was used. The probability of observing a positive excess return (i.e., p) from the excess returns tape was obtained as follows. From all the available excess returns for the first 200 firms on the tape, the percentage of positive returns was 47%. Brown et al. [7] report similar results for all the firms on the tape for a period from 1976 to 1978. The value of p , therefore, is 0.47.

¹⁹ Considerable effort was expended in identifying other confounding events that might have affected the results. The analysis was repeated by excluding all events with other important announcements (e.g., mergers, takeovers, stock-splits, spin-offs, dividend increases or decreases, earnings announcements, etc.) within five days of the event dates. Although the *t*-statistics change somewhat, the qualitative conclusions remain the same.

Table II
Buyers, Examination of Excess Returns Around Sell-off
Announcements

Panel A. Average Excess Returns (AXR), *t*-statistics for AXR, and Cumulative Average Excess Returns (CAXR) Around the Sell-off Announcements.

Day	No. of Events	AXR	<i>t</i> -statistic	CAXR
-120	299	0.0018	1.26	0.0018
-110	299	0.0007	0.50	-0.0048
-100	301	-0.0018	-1.30	-0.0151
-90	300	-0.0008	-0.57	-0.0152
-80	301	-0.0009	-0.65	-0.0130
-70	300	-0.0010	-0.72	-0.0161
-60	301	-0.0003	-0.19	-0.0188
-50	300	0.0009	0.62	-0.0150
-40	301	-0.0001	-0.05	-0.0146
-30	301	0.0019	1.35	-0.0116
-20	301	-0.0003	-0.20	-0.0125
-10	304	0.0019	1.33	-0.0076
-9	304	-0.0015	-1.08	-0.0092
-8	304	-0.0014	-1.01	-0.0106
-7	304	0.0006	0.42	-0.0100
-6	304	0.0033	2.35*	-0.0067
-5	304	-0.0012	-0.84	-0.0079
-4	304	-0.0006	-0.46	-0.0085
-3	304	-0.0017	-1.18	-0.0102
-2	304	-0.0007	-0.49	-0.0109
-1	304	0.0034	2.43*	-0.0074
0	303	0.0013	0.93	-0.0061
1	303	0.0014	0.98	-0.0048
2	303	-0.0008	-0.56	-0.0055
3	303	-0.0000	-0.02	-0.0056
4	302	0.0015	1.04	-0.0041
5	302	0.0022	1.56	-0.0019
6	303	-0.0013	-0.95	-0.0033
7	303	-0.0046	-3.28**	-0.0079
8	303	0.0001	0.09	-0.0077
9	303	-0.0024	-1.69	-0.0101
10	303	0.0014	0.99	-0.0087
20	302	0.0000	0.00	-0.0088
30	303	-0.0000	-0.03	-0.0050
40	303	0.0016	1.12	-0.0083
50	301	-0.0014	-0.97	-0.0163
60	302	0.0022	1.57	-0.0122
70	301	-0.0010	-0.71	-0.0145
80	301	0.0021	1.51	-0.0172
90	300	-0.0021	-1.50	-0.0237
100	302	0.0022	1.59	-0.0198
110	300	-0.0001	-0.09	-0.0204
120	302	0.0007	0.50	-0.0201

Day 0: Date of the first publication of the news in the *Wall Street Journal*.

* Significant at 5% level of significance.

** Significant at 1% level of significance.

Table II—Continued

Panel B. Time Series *t*-statistics for Various Intervals.

Interval (Days)	CAXR	<i>t</i> -statistic
-120 to -61	-0.019	-1.71
-120 to -11	-0.010	-0.65
-60 to -11	0.009	0.91
-10 to -6	0.003	0.89
-5 to -1	-0.001	-0.24
1 to 5	0.004	1.34
6 to 10	-0.005	-1.34
11 to 60	-0.003	-0.35
61 to 120	-0.008	-0.73
11 to 120	-0.011	-0.77

were not properly specified, a relatively higher number of large *t*-statistics in the nonevent period would be observed.

The results presented here can also be compared with the results in the merger-related studies. In absolute percentage terms, the excess returns to sell-off activities are much smaller than those earned by the target firms in mergers. For example, Asquith [4] reports excess returns to the target firms of about 7% for day -1 and day 0. This difference may reflect the relative importance of these two types of events. This could also be an indication of which party initiates the transaction, i.e., to pay for a quick transaction or liquidity.²⁰ The results are also consistent with the agency theory perspective which predicts that the stockholders are expected to experience positive excess returns, although additional research is needed to further discriminate among various hypotheses.

B. Buyers

Table II presents the average excess returns earned by the buyers around the event dates. Since not all the buyers are known and listed on the CRSP excess returns tape, the number of events for the buyers in the sample on day -1 is only 304 as opposed to 1062 for the sellers. On day -1, the buyers earn a statistically significant positive excess return of 0.34% (*t*-statistic of 2.34). For days -5 to -1, the CAXR is, however, insignificantly different from zero. Further, the behavior of the stock prices after day zero is essentially random, suggesting market efficiency and the suitability of the test statistics.

In sum, sell-off announcements are also good news for the buyers, although to a lesser extent compared to the sellers. This result is not consistent with the size maximizing hypothesis of Mueller [25] and others. The results also indicate that the sell-off market may not be fully competitive, or again, this may reflect a desire for a quick transaction by the seller. Reading a large number (over 500) of news items from the *Wall Street Journal* indicated that more than one buyer did not usually come forward to competitively negotiate with the seller.

²⁰ This point was suggested by the referee.

Table III
Sellers, Examination of Pre-event Period

Panel A. Average Excess Returns (AXR), *t*-statistics for AXR, and Cumulative Average Excess Returns (CAXR) Around the Sell-off Announcements.

Day	No. of Firms	AXR	<i>t</i> -statistic	CAXR
-360	312	-0.0025	-1.55	-0.002
-350	312	-0.0014	-0.87	-0.006
-340	311	-0.0007	-0.49	-0.007
-330	311	0.0004	0.25	-0.004
-320	311	0.0017	1.07	-0.007
-310	311	0.0011	0.69	-0.010
-300	309	0.0004	0.26	-0.014
-290	311	-0.0056	-3.47**	-0.019
-280	310	0.0009	0.56	-0.023
-270	311	-0.0011	-0.71	-0.027
-260	310	-0.0000	-0.05	-0.028
-250	311	0.0024	1.54	-0.030
-240	312	-0.0016	-1.04	-0.032
-230	312	-0.0015	-0.96	-0.035
-220	311	0.0002	0.13	-0.037
-210	312	-0.0007	-0.43	-0.037
-200	310	-0.0005	-0.36	-0.044
-190	312	0.0009	0.58	-0.043
-180	312	-0.0008	-0.51	-0.048
-170	312	0.0004	0.26	-0.051
-160	312	-0.0009	-0.58	-0.050
-150	312	0.0006	0.39	-0.057
-140	312	0.0006	0.41	-0.061
-130	311	-0.0006	-0.40	-0.067
-120	311	0.0007	0.45	-0.071
-110	310	-0.0008	-0.50	-0.071
-100	309	0.0014	0.88	-0.074
-90	309	-0.0028	-1.78	-0.080
-80	309	-0.0003	-0.24	-0.086
-70	310	-0.0007	-0.48	-0.081
-60	310	-0.0020	-1.28	-0.080
-50	310	0.0012	0.75	-0.082
-40	310	0.0027	1.69	-0.088
-30	310	-0.0009	-0.61	-0.096
-20	310	-0.0032	-2.02*	-0.102
-10	311	0.0024	1.51	-0.106
-9	311	-0.0003	-0.22	-0.106
-8	311	-0.0031	-1.95	-0.109
-7	311	-0.0048	-3.03**	-0.114
-6	311	-0.0016	-1.03	-0.116
-5	312	-0.0021	-1.33	-0.118
-4	312	0.0008	0.55	-0.117
-3	312	0.0009	0.57	-0.116
-2	311	0.0040	2.51*	-0.112
-1	311	0.0056	3.53**	-0.106

Table III—Continued

0	311	-0.0005	-0.31	-0.107
1	312	0.0002	0.17	-0.106
2	311	-0.0026	-1.64	-0.109
3	311	0.0017	1.08	-0.107
4	312	0.0039	2.41*	-0.103
5	312	-0.0012	-0.80	-0.105
6	312	0.0004	0.30	-0.104
7	312	-0.0000	-0.04	-0.104
8	311	-0.0000	-0.06	-0.104
9	311	0.0037	2.33*	-0.101
10	311	-0.0014	-0.87	-0.102
20	312	-0.0008	-0.19	-0.108
30	313	-0.0015	-0.97	-0.109
40	312	0.0020	1.28	-0.106
50	312	-0.0019	-1.23	-0.106
60	311	-0.0022	-1.41	-0.112
70	310	-0.0005	-0.34	-0.115
80	310	0.0021	1.30	-0.113
90	311	-0.0031	-1.93	-0.112
100	312	0.0006	0.39	-0.110
110	309	-0.0028	-1.74	-0.109
120	309	-0.0017	-1.10	-0.115

Panel B. Time Series *t*-statistics for Various Intervals.

Interval (Days)	CAXR	<i>t</i> -statistic
-360 to -241	-0.031	-1.73
-360 to -121	-0.072	-2.87**
-360 to -61	-0.079	-2.81**
-360 to -11	-0.108	-3.59**
-240 to -121	-0.041	-2.34*
-240 to -61	-0.048	-2.22*
-240 to -11	-0.078	-3.17**
-120 to -61	-0.007	-0.54
-120 to -11	-0.036	-2.15*
-60 to -11	-0.030	-2.60**
-10 to -6	-0.008	-2.10*
-5 to -1	0.009	2.60**
1 to 5	0.002	0.54
5 to 10	0.001	0.35
11 to 60	-0.010	-0.84
61 to 120	-0.003	-0.25
11 to 120	-0.013	-0.75

Day 0: Date of the first publication of the news in the *Wall Street Journal*.

* Significant at 5% level of significance.

** Significant at 1% level of significance.

C. Stock Price Behavior Before the Sell-off Activity

In Subsection A, it was indicated that sellers appeared to be poor performers prior to their sell-off activities. Including some firms more than once, however, might have caused dependence in the time series returns and hence biased the test statistics. To remedy this problem, the following analysis included each firm in the sample only once. For firms having more than one event, only the first event was included in the sample. The results are presented in Table III. The

examination of excess returns is extended backwards to 360 days prior to day zero. Since the *WSJI* was examined for one to two years prior to the first sell-off announcement, this pre-event period is virtually free from sell-off activities. Table III shows that these firms, on average, earned -10.8% for day -360 to day -11 (t -statistic of -3.59). The t -statistics for other periods also confirm that the decline in stock prices is statistically significant.²¹ This pattern is similar to that experienced by target firms in merger-related studies. For example, Asquith [4] reports that successful targets earn -14.1% between day -480 and day -20 , and unsuccessful targets earn -10.5% over the same period. Similarly, Malatesta [22] reports that the acquired firms earned -8.5% from month -24 to -4 . The stock price pattern for the buyers in the pre-event period was also examined (not reported), but buyers earned normal returns during the pre-event period.²²

These results are interesting in that they indicate at least one kind of action taken by the managers of the poorly performing firms to improve the welfare of their stockholders. A comparison of these results with those of Miles and Rosenfeld [24] for a spin-off sample highlights another interesting aspect. In contrast to the negative excess returns earned by the selling firms in the pre-event period (reported here), Miles and Rosenfeld found that the firms spinning-off their subsidiaries experienced significantly positive excess returns for a period of 120 days prior to their spin-off announcements. This suggests that, although both spin-offs and sell-offs are associated with similar contemporaneous positive stock price reactions, the actions taken by management depend on the firms' performances prior to these decisions. This appeals to logic since firms performing poorly are more likely to face liquidity problems and therefore engage in sell-offs to overcome these problems. Spin-offs, on the other hand, do not generate cash for the parent company and are, therefore, more likely to be undertaken by firms that have been performing well in the recent past.

VI. Summary and Conclusions

The results of this study show that publicly available voluntary sell-off announcements have a positive effect on the shareholders of both the sellers and the buyers. For the sample of over 1000 events, the average excess return to the sellers is a statistically significant 0.70% . This is consistent with that of Alexander et al. [2] who examine a much smaller sample of 53 firms and find positive but less significant excess returns to sellers. The buyers also earn statistically significant, albeit smaller (0.34% on day -1), excess returns.

For the sellers, the sell-off announcements are preceded by a period of negative excess returns, a significant -10.8% from day -360 to day -11 relative to the first sell-off related announcement. Although the excess return percentages earned by sellers in sell-offs are smaller than those earned by target (or acquired)

²¹ The excess returns for day 4 and day 9 are positively significant which probably reflects the announcement effects for additional sell-off related announcements since day zero in this table is defined to be the first event for each firm.

²² In comparison, the bidders (buyers) in merger-related studies are reported to earn positive excess returns in the pre-event period (e.g., Mandelker [23], Langetieg [21], and Asquith [4]).

firms in mergers, the qualitative similarities (both in the pre-event period and around the event dates) suggest that sell-offs can be viewed as partial mergers. In contrast, for spin-off announcements, Miles and Rosenfeld [24] conclude that, "spin-off announcements, on average, are preceded by a period of abnormally positive returns." This suggests that although both spin-offs and sell-offs are associated with contemporaneous positive excess returns, the two financial planning decisions apparently have different underlying circumstances.

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