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Author(s): Eli Ofek

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Efficiency Gains in Unsuccessful Management Buyouts

ELI OFEK*

ABSTRACT

This article uses a sample of 120 unsuccessful management buyouts (MBOs) to test whether operational improvements following successful MBOs are a result of organizational changes or private information. The findings are consistent with the organizational changes hypothesis. Firms with an unsuccessful MBO had no increase in operating performance following the buyout attempt. In addition, the cumulative abnormal stock return from before the attempted buyout until two years after the attempt is insignificantly different from 0 percent. I also find that management turnover following an unsuccessful MBO is significantly higher than normal.

MANAGEMENT-LED BUYOUTS OCCURRED frequently during the 1980s. Stockholders received large premiums over the prebuyout stock price, and the buyout firms experienced improvements in profitability and operating efficiency. This improvement is documented by Kaplan (1989), Smith (1990), and Lichtenberg and Siegel (1990). Kaplan reports an increase in operating income, operating margins, and cash flow for a sample of 48 firms that completed management buyouts. For example, the ratio of operating income to assets, adjusted for industry changes, increased from one year before the buyout to one year afterward by 16.6 percent, and from one year before the buyout to two years afterward by 36.1 percent. Smith reinforces Kaplan's findings in an examination of 58 MBOs between 1977 and 1986. She shows that operating cash flow per employee and per dollar operating assets increase in absolute terms and in comparison with the industry. Lichtenberg and Siegel find that productivity in MBO plants increases significantly in the two years following the buyout.

The improved operating performance following MBOs is consistent with two hypotheses:

1. *Organizational change hypothesis.* Operational improvements are a result of organizational changes induced by the buyout (Jensen (1989)). According to this view, the greater managerial ownership and high financial leverage associated with the buyout give managers strong incentives to generate higher cash flow through improved operating performance.

* Ofek is from the Stern School of Business, New York University. I appreciate helpful comments from Douglas Diamond, Steve Kaplan, David Ravenscraft, Richard Ruback, René Stulz (the editor), and an anonymous referee.

2. *Private information hypothesis.* According to this view, operational improvements would have occurred without the buyout. Managers' private information about future improvement allows them to exploit the firm's undervaluation by bidding to take the company private.

Several articles try to distinguish between these explanations. Baker and Wruck (1990) conclude that organizational changes at O. M. Scott are responsible for the improved operating performance. In larger samples, DeAngelo (1986), Kaplan (1989), and Smith (1990) also find evidence supporting the organizational change hypothesis. DeAngelo fails to find any evidence that managers depress earnings prior to a MBO in an attempt to depress stock price. Kaplan finds that actual profitability of firms following the MBO is 6 percent lower than the management's forecast at the time of buyouts. This suggests that the managers are not trying to conceal favorable information from the public. Smith finds that the improvement in performance following defensive MBOs, which are less likely to result from private information, is similar to that following nondefensive MBOs.

Observing the changes in performance in a sample of unsuccessful MBO offers can also help distinguish between the competing hypotheses about operational improvement. A successful MBO is usually associated with several organizational changes such as an increase in managerial ownership and a sharp increase in leverage. These changes do not occur when a buyout attempt fails, so the firms in question do not experience associated improvement in performance. If the management bids for a firm for which it has favorable private information about future performance, however, the firm's performance should improve following the MBO offer, whether or not it succeeds. Thus the private information hypothesis predicts a positive change in performance for firms that receive a buyout bid from management that is later canceled, whereas the organizational change hypothesis predicts no such change.

Smith (1990) finds no improvement in operating performance in a sample of 24 unsuccessful MBOs in the year following the buyout attempt. Smith's sample, however, includes 13 cases in which management voluntarily withdrew the buyout offer or gave no reason for the withdrawal. In these cases the withdrawal may have been caused by the receipt of less favorable information. This reduces the validity of using Smith's sample of unsuccessful buyouts to test for increase in performance following successful management buyouts. This article uses a larger sample of unsuccessful MBOs and controls for the sample selection bias to validate the distinction. To measure unexpected changes in a firm's performance, I use stock return data as well as accounting variables.

My results are consistent with the organizational change hypothesis and inconsistent with the private information hypothesis. My sample consists of 120 firms receiving a management buyout offer that was later canceled. Stockholders of firms that continue to be publicly held for at least two years following the cancellation of the MBO offer enjoy, on average, a cumulative

abnormal return of 27 percent from one month before the announcement until the day after the MBO offer is announced, but return declines thereafter; it is only 2 percent after the cancellation day (insignificantly different from 0). The cumulative return from one month before the MBO offer fluctuates around 0 percent for two years after the cancellation and is never statistically distinguishable from 0. These return characteristics indicate that there is no increase in firm value due to an unsuccessful MBO. I also find no evidence of an improvement in operating performance, measured as changes in operating income/sales and operating income/assets, from Year -1 to Years $+1$, $+2$, and $+3$ relative to the offer announcement.

The sample of unsuccessful MBOs is subject to a self-selection bias. It could be that management cancels the buyout offer because it receives unfavorable information about future cash flow, which is consistent with the lack of improvement in the sample's performance. To control for this bias, I measure the stock return and operational improvement in offers that are rejected by the board or by stockholders. These offers are unwillingly canceled by management and are less likely to stem from negative information. The cumulative excess returns to shareholders of these firms from one month before the announcement until one or two years after the announcement are insignificantly different from 0. These firms also fail to show any improvement in operational performance following the unsuccessful buyout offer. These results are inconsistent with the price information hypothesis. It is possible, however, that the board cooperates with the management when it rejects the offer (hidden managerial withdrawal); in such a case the self-selection bias remains.

This article finds evidence of the risk to management from participating in a buyout attempt. In 47 percent of the sample, management is replaced in the year following the unsuccessful buyout attempt. In addition, only 38 percent of the sample firms remain publicly traded for two years after the buyout cancellation. During these two years most of the firms are taken over by another bidder. Although management in some of these firms retains its position, managing a division of a large corporation instead of a public corporation probably reduces the manager's utility.

The article is organized as follows. Section I outlines the sample selection procedure, describes the data and its sources, and highlights the risk to managers from an unsuccessful MBO attempt. Section II reports the sample's stock return characteristics as well as the changes in operating performance following the failed MBO offers. Section III reports the results after controlling for selection bias. Section IV summarizes the article.

I. Sample Selection and Sample Description

A. Sample Selection

I collected a sample of 120 firms that had an unsuccessful MBO between 1974 and 1989. A firm is included in the sample if all of the following

conditions are met: (1) There is a firm price offer to purchase stock in the company, the firm would become privately held if the offer were completed, and details of the offer appear in the *Wall Street Journal Index* (WSJI) or in the *W. T. Grimm Mergerstat Review*; (2) the offer is made by a private group that includes at least one member of the target company's management or board of directors, or a former manager who left the firm no more than six months before the buyout offer; or (3) the private group publicly announces the cancellation of the buyout offer, or the firm is taken over by a rival private group or by another corporation.

Information regarding the fate of management following the unsuccessful MBO offer was also collected. Management replacement occurs if: (1) the WSJI reports that the members of management who participated in the buyout offer left the firm in the year after the offer was canceled, (2) at least one of the top three executives—chairman of the board, president, and CEO—at the time of the offer left his or her position within a year of the cancellation of the offer, or (3) the buyout offer is made by a manager who resigns before making the offer and does not resume his or her position after the cancellation.

Data on the top management of each firm was collected from the WSJI and the *Standard & Poor's Corporation Directory*. Stock returns for the sample firms were retrieved from the Center for Research in Security Prices (CRSP). The available financial data in the Industrial COMPUSTAT data base were collected for each sample firm from two years before the buyout offer until three years after the buyout offer. Altogether, 63 firms have operating data available for one year before the buyout offer (Year -1), and the first full year after the fiscal year of the offer ($+1$). Data for year -1 and the second year after the fiscal year of the offer ($+2$) are available for 52 firms, and 35 firms have data available for Years -1 and $+3$.

B. Sample Description

Panel A of Table I reports the distribution of the full sample and the sample of firms with available postoffer performance data by the reason given for the MBO cancellation and by the year of the offer. The most common reason for cancellation is the acceptance of a higher bid (48). Other common reasons are rejection by the board (17), inability of the buyout group to obtain financing (14), poor economic conditions (8), rejection by the stockholders (5), and the firm's latest performance (4). In 24 cases the offer is withdrawn or no reason is given for the cancellation. Most of the difference between the full sample and the sample of firms with available postoffer data stems from the disappearance of firms that were acquired by a rival bidder.

The vast majority of unsuccessful offers (85 percent) are made in the 1983 to 1988 period. The single year with the most offers is 1984, with 27 unsuccessful offers.

Panel B of Table I describes some of the sample characteristics. The mean leverage, defined as the ratio of book value of debt to the sum of book value of

debt and market value of equity, is 0.40 in Year -1 , increasing to 0.47 by the end of Year $+1$. Neither the mean change nor the median change in leverage is significantly different from 0.¹ In contrast, Kaplan (1989) reports that the mean leverage in a sample of successful MBOs increases from 0.21 before the buyout to 0.88 afterward.² Unsuccessful MBOs, unlike successful buyouts, are not associated with a sharp increase in leverage.

C. Management's Fate Following the Unsuccessful MBO

Panel A of Table I provides information about management turnover in the 120 sample firms. In 57 firms management remains for at least one year after the buyout cancellation, and in 51 firms it is replaced. In 12 cases management's fate could not be determined. For the sample overall, the annual management turnover rate is 47 percent. This rate is abnormally high. For example, Warner, Watts, and Wruck (1988) report that the average annual turnover rate for a sample of 269 randomly selected public firms is 18 percent. The average yearly turnover rate in the sample of unsuccessful MBOs is significantly higher (at the 1 percent level).³

The management turnover rate in the sample appears to move in steps over time. In all five cases during the 1970s management remained in place. These buyout attempts were among the first in the MBO wave. It could be that managers attempting an MBO in the early years were more entrenched in the firm and therefore harder to replace. The turnover rate between 1980 and 1986 is stable, varying between 40 and 45 percent. The turnover rate increases again in 1987 to 60 percent. It remains around that level in 1988 and 1989, with a 70 and 67 percent turnover rate, respectively. This result highlights another aspect of the risk that managers assume when they attempt to buy the firm. In addition to the financial risk if the MBO is successful, managers risk losing their position if the MBO is unsuccessful. The turnover risk to managers is not trivial, since a substantial portion of MBO attempts fail. Smith (1990) reports on 230 successful MBOs between 1974 and 1986. I find 87 unsuccessful MBOs over the same period, which implies that 27.4 percent of the MBO attempts were unsuccessful. This rate is higher for 1983 to 1986, when 37.4 percent of MBO offers were unsuccessful.

Managers who attempt to buy the firm are exposed to another source of risk. An unsuccessful offer puts the firm in play and substantially increases the probability that it will be acquired in the near future. Panel C in Table I shows that two years following the cancellation of the MBO only 45 firms

¹ This result does not change when other definitions of leverage are used.

² Kaplan's prebuyout leverage is lower than my sample's preoffer leverage, mainly because Kaplan uses the final equity value of the firm in his leverage calculations. This value is substantially higher than the prebuyout equity value I use. Also, Kaplan adds the market value of preferred stock in the denominator in the leverage calculation.

³ There is a small difference in the definition of management turnover between this article and Warner *et al.* (1988). The difference in turnover rates between the samples remains significant at the 1 percent level when a similar definition is used.

Table I
Sample Description

Panel A describes the frequency distribution of a sample of firms that received an MBO offer that was later canceled between 1974 and 1989, and subsamples of firms that replaced and did not replace management in the year following the MBO cancellation. (For 12 firms it could not be determined whether management was replaced.) The sample is sorted by the reason for the cancellation and the year of the offer.

Panel B describes statistical characteristics of various size, profitability, and leverage variables of the sample of unsuccessful MBO offers.

Panel C describes the changes in ownership in the sample of unsuccessful MBO offers in the two years following cancellation of the offer.

A defensive MBO offer occurs when management's bid for the firm follows an existing bid by a rival group. Leverage is the ratio of the book value of debt to the sum of the book value of debt and the market value of the equity. EBITD is earnings before interest taxes and depreciation. Bid by the management group is the dollar amount the management group was willing to pay for the part of the equity it was bidding for. Months elapsed from offer to cancellation measures the number of full months between the first announcement of the MBO and the official cancellation.

Panel A. Frequency Distribution of Unsuccessful MBO Offers

	Full Sample	Management		Turnover Ratio	Available Data ^a
		Stay	Replaced		
Total in sample	120	57	51	0.47	63
Remained publicly for 2 years or more	45	28	14	0.33	43
A defensive MBO offer	17	7	10	0.59	7
A nondefensive MBO offer	103	50	41	0.45	56
Reason for cancellation					
Accepted a higher bid	48	16	23	0.59	11
Offer was rejected by the board	17	6	9	0.60	13
Group was unable to obtain financing	14	5	8	0.62	11
Uncertain economic conditions	8	6	2	0.25	5
Offer withdrawn	8	6	2	0.25	8
Offer was rejected by the stockholders	5	4	1	0.20	4
The firm's latest poor performance	4	1	3	0.75	3
No reason given	16	13	3	0.19	8
Total	120	57	51		63
Year of MBO announcement					
1970's	5	5	0	0.00	5
1980-1982	9	5	4	0.44	5
1983	9	5	4	0.44	1
1984	27	15	10	0.40	10
1985	25	13	10	0.43	10
1986	12	6	5	0.45	9
1987	15	4	9	0.69	9
1988	14	3	7	0.70	10
1989	4	1	2	0.67	4
Total	120	57	51		63

Table I—Continued

Panel B. Characteristics of the Sample					
	Obs.	Mean	Median	High	Low
Leverage year - 1	92	0.4035	0.3665	0.9160	0.0030
Leverage year 1	50	0.4651	0.4730	0.9940	0.0270
EBITD/Sales - 1	99	0.0960	0.0920	0.4840	-0.2680
EBITD/Assets - 1	99	0.1153	0.1220	0.4840	-0.3540
Total sales year - 1 (million \$)	99	726	241	15,766	2
Equity value year - 1 (million \$)	100	325	78	11,131	3
Bid by management group (million \$)	120	570	115	25,237	3
Months elapsed from offer to cancellation	120	3.46	2	64	0

Panel C. Ownership Changes of the Sample		
Status Two Years after the Cancellation	No. of Firms	Frequency in the Sample (%)
Remained publicly traded	45	38
Had a successful MBO	8	7
Was taken over by another bidder	61	51
Liquidated	4	3
Not available	2	2
Total	120	100

^a Firms with available accounting data about the change in operating performance between years - 1 and + 1.

remain publicly traded. Four firms are liquidated, and in seven firms there is a successful MBO within two years of the unsuccessful attempt. More than half of the sample firms, however, are acquired by a rival bidder within two years. In such cases, even if managers retain their positions they manage a division of a corporation rather than a public corporation. In 17 cases, management's bid follows an initial bid by a rival group to buy the firm (defensive bid). In most cases, however, management initiates bidding that puts the firm in play.

II. Abnormal Return and Changes in Operating Performance

A. Abnormal Stock Return Characteristics

Table II reports the abnormal returns to stockholders around the buyout offer day and the cancellation day, and between the offer and the cancellation. Abnormal returns were retrieved from the BXRET return array in CRSP. These returns are calculated by grouping all firms in CRSP into 20 beta portfolios according to the size of their betas in a given year. In the following year a firm's abnormal return equals the difference between its daily stock return and the return of its beta portfolio.⁴

⁴ The results are not sensitive to the method of calculating abnormal returns. Results are similar if absolute returns are used instead of abnormal returns around the offer and cancellation days, or if the market model is used to estimate abnormal returns.

Table II
Abnormal Return Around the Event Days

Cumulative average abnormal return for the sample of MBOs and for the subsamples of firms that received another bid and those that did not. The abnormal returns are measured around the announcement and cancellation day and between those dates. *P*-values are in parentheses, and the number of observations is in square brackets.^a

Group/Event Time	Cumulative Average Abnormal Returns		
	Offer Days -5 to 1 (%)	From Offer +2 to Cancellation -5 (%)	Cancellation Days -5 to 1 (%)
Full sample	17.94 ^d (0.000) [118]	-3.95 ^e (0.024) [111]	-4.19 ^d (0.002) [108]
Group that received another bid ^b	20.36 ^d (0.000) [47]	3.37 (0.180) [44]	4.54 ^d (0.001) [42]
Group that did not receive another bid ^c	16.33 ^d (0.000) [71]	-8.76 ^d (0.000) [67]	-9.75 ^d (0.000) [66]

^a The abnormal returns were retrieved from the BXRET array in the CRSP tape. These returns are calculated in the following form: each year all firms are grouped into 20 portfolios according to their beta that year (beta portfolios). The daily abnormal return of a firm in the following year is the difference between the firm's daily return and the daily return on its beta portfolio that day.

^b This group includes only the firms for which the reason for the cancellation of the MBO offer was a competing bid.

^c The group includes the firms that did not have a competing bid when the MBO was canceled.

^d Significant at the 1 percent level.

^e Significant at the 5 percent level.

The average cumulative abnormal return (CAR) from Day -5 to Day +1 around the offer announcement is 18 percent.⁵ The abnormal return between the offer day and the cancellation day is negative for the full sample, -4.0 percent, and so is the return around the cancellation day, -4.2 percent. For some firms the probability of a successful bid decreases during the period between the offer announcement and the cancellation as the market learns about the buyout difficulties, but for others this probability increases, mostly because of the possible emergence of a rival bidder. The two groups are likely to have different return characteristics before and around the cancellation of the MBO offer. One way to separate these groups is to divide the sample between the firms that have a higher bid by a rival group outstanding when the management cancels its buyout, and those that do not.

Indeed, the average abnormal return for the two groups differs. It is positive for firms that receive a higher bid, both between the announcement

⁵ DeAngelo, DeAngelo, and Rice (1984) also report an 18 percent average abnormal return for 20 successful buyouts in a two-day window around the buyout announcement.

and the cancellation (3.4 percent) and around the cancellation day (4.5 percent), which is often the day the other bid is announced. But stockholders of the firms that do not receive another bid suffer a significant loss of -8.8 percent in the period between the announcement and the cancellation and a further loss of -9.8 percent around the cancellation day. For the latter group, the decline due to the cancellation more than offsets the gain around the offer day.

The large stock-price decline around the cancellation day is consistent with the organizational change hypothesis, which predicts that firm value will increase around the announcement day but that, since no organizational changes are implemented, firm value should decline around the cancellation, making the cumulative abnormal return from the failed buyout 0 percent. This return should remain around 0 percent in the period following the cancellation. If undervaluation is the motive for the MBO, on the other hand, the cumulative abnormal return should remain positive even after the MBO is canceled. However, the large stock-price decline in the period between the announcement and the cancellation is also consistent with the emergence of bad news about the firm that causes the cancellation of the offer.

Abnormal returns following the cancellation of a buyout offer may also depend on the probability of a future bid for the firm. Bradley, Desai, and Kim (1983) report that when the firm is not taken over within five years of an unsuccessful tender offer the average CAR declines significantly in the months following the initial cancellation and becomes insignificantly different from 0 a year after the cancellation.

Table III reports the mean and median cumulative abnormal returns for the firms that are not acquired in the two years after the MBO is canceled. The abnormal return from one month before the offer announcement until one day after is 27 percent and is statistically significant. This premium is similar to premiums around successful MBO announcements. However, the negative abnormal returns following the offer announcement and around its cancellation offset most of the gains. The average CAR from one month before the offer until one month after the cancellation announcement is 2 percent, but it is insignificantly different from 0; it remains insignificant for the two years after the cancellation. This result is similar to the result reported for unsuccessful tender offers.

Overall, there is no increase in firm value with a failed MBO, a result that is consistent with the organizational change hypothesis and inconsistent with the private information hypothesis. However, it is also consistent with bad information arriving to the market and causing the cancellation of the offer. Section III further investigates this matter.

B. Changes in Operating Performance

This section uses accounting variables to examine changes in operating performance of firms with an unsuccessful MBO offer. The following variables are used as a measure of performance: percentage change in operating

Table III
Abnormal Returns When No Subsequent Successful Bid Is Made

Mean abnormal returns of firms that had an unsuccessful Management Buyout Offer and remained publicly traded for at least two years following the cancellation of the offer. The abnormal returns are from one month before the offer until twenty-four months after the cancellation. All returns are monthly except for returns around the announcement, between the announcement and cancellation, and around the cancellation of the MBO offer. P-values are in parentheses. Returns are in percentages.

Cumulative Abnormal Returns			
Period	All Firms	Terminated Offer ^a	Rejected Offer ^b
Observations	41	26	15
Announcement ^c	17.59 ^f (0.000)	19.16 ^f (0.000)	14.87 ^f (0.003)
Between period ^d	-8.87 ^f (0.000)	-12.90 ^f (0.000)	-1.89 (0.350)
Cancellation ^e	-9.79 ^f (0.000)	-12.44 ^f (0.000)	-5.21 ^g (0.066)
Month - 1 to announcement	26.67 ^f (0.000)	32.44 ^f (0.000)	16.69 ^f (0.008)
Months - 1 to 1	2.28 (0.520)	-1.22 (0.780)	8.36 (0.180)
Months - 1 to 6	-2.62 (0.600)	-7.66 (0.220)	6.10 (0.470)
Months - 1 to 12	-7.22 (0.340)	-5.40 (0.620)	-10.40 (0.250)
Months - 1 to 24	-8.07 (0.310)	-10.40 (0.320)	-4.00 (0.750)

^a This group includes MBOs with the following reasons given for their cancellation: unable to obtain financing, uncertain economic conditions, firm's latest poor performance, offer withdrawn and no reason given.

^b This group includes MBOs with the following reasons given for their cancellation: rejected by the board or rejected by stockholders.

^c Abnormal return from 5 days before the announcement until 1 day after.

^d Abnormal return from 2 days after the announcement until 6 days before the cancellation.

^e Abnormal return from 5 days before the cancellation until 1 day after.

^f Significant at the 1 percent level.

^g Significant at the 10 percent level.

income defined as the change in earnings before interest taxes and depreciation (EBITD), percentage change in sales, change in EBITD/total assets (ROA), and change in EBITD/sales (operating margins). To control for industry effects, the analysis also presents an industry-adjusted change in the operating performance variables. The industry-adjusted change equals

the difference between the change in the operating performance variable and the median change in that variable, over the relevant period, for all the firms in the same industry as the buyout company. A firm is considered in the same industry as the buyout company if it has: (1) the same four-digit SIC code on the Standard and Poor's COMPUSTAT Industrial and Research tapes; and (2) a total book value of assets of at least \$5 million at the end of Year -1 .

The medians of the changes are used as a measure of performance. Medians are used to allow for the possibility that outliers will dominate the means in the small sample analyzed. A Wilcoxon signed rank test for significance of the medians is calculated. The variables I use to measure changes in operating efficiency are similar to those used by Kaplan (1989). The only difference is that Kaplan uses the percentage change in ROA and in operating margins, while I use the absolute change. I also use the percentage change in sales as a measure of growth.⁶

Table IV reports the unadjusted and industry-adjusted median changes in the operating performance variables. The changes are reported from Years -3 and -2 to Year -1 and from Year -1 to Years $+1$, $+2$, and $+3$, where Year 0 is the year the buyout is announced. Panel A in Table IV presents the percentage changes in operating income. The absolute changes are significantly positive in the years before and after the buyout (only the change from Year -1 to Year $+1$ is not significant). Such an increase, however, may be caused in part by inflation. The industry-adjusted changes control for the effect of inflation. The adjusted changes in operating income after the buyout are never positive. The change from Year -1 to Year $+1$ is significantly negative, and the changes from -1 to $+2$ and -1 to $+3$ are negative but not significant.

Panel B in Table IV presents the percentage changes in sales. The absolute median level of sales rises significantly in the years following the buyout. The increases in sales are 10, 14, and 24 percent from the year before the offer to one, two, and three years following the offer, respectively. When industry trends are controlled for, however, the increase in sales disappears. The industry-adjusted growth from Year -1 to Year $+1$ and from -1 to $+2$ are significantly negative, and the changes from -1 to $+3$ are negative but not significant. Therefore, there does not appear to be substantial growth by the sample firms after the MBO offer relative to firms in the same industry.

Panels C and D in Table IV present the changes in ROA and operating margins. None of the median changes in ROA are statistically significant. The direction of the absolute changes and industry-adjusted changes is mixed. The changes are positive for some years and negative for others. Most of the absolute and the adjusted median changes in operating margins after the offer are negative (at times significantly negative).

⁶ Kaplan also reports the changes in capital expenditures and in operating income net of capital expenditures (cash flow). I find no significant change in capital expenditures in my sample, and all the results remain unchanged if the changes in cash flow are used as performance variables.

Table IV**Performance Changes of All Firms with Available Data**

Median changes in the ratios of operating income to assets, operating income to sales, and median percentage change in sales and operating income, for the sample of firms that had an unsuccessful MBO offer in the period 1974 to 1989. The *P*-values of a Wilcoxon signed rank test are in parentheses. EBITD is earnings before interest, taxes, and depreciation.

Performance Measures	Changes from Years				
	- 3 to -1	- 2 to -1	- 1 to 1	- 1 to 2	-1 to 3
Observations	61	62	63	52	35
Panel A. Change in Operating Income					
Median absolute change	0.3280 ^a (0.000)	0.1800 ^a (0.000)	0.0890 (0.755)	0.2720 ^b (0.021)	0.2600 ^c (0.068)
Industry-adjusted median change	0.0450 (0.121)	0.0400 ^b (0.053)	-0.1250 ^a (0.013)	-0.0340 (0.542)	-0.0270 (0.527)
Panel B. Change in Sales					
Median absolute change	0.1930 ^a (0.000)	0.1070 ^a (0.000)	0.1000 (0.176)	0.1400 ^b (0.011)	0.2440 ^a (0.001)
Industry-adjusted median change	0.0050 (0.736)	0.0036 (0.926)	-0.0743 ^a (0.010)	-0.1530 ^c (0.051)	-0.0640 (0.507)
Panel C. Change in EBITD/Assets					
Median absolute change	0.0140 (0.202)	0.0090 (0.240)	-0.0130 (0.177)	-0.0010 (0.665)	-0.0070 (0.494)
Industry-adjusted median change	0.0141 ^c (0.090)	0.0036 (0.400)	-0.0077 (0.421)	0.0112 (0.177)	0.0076 (0.321)
Panel D. Change in EBITD/Sales					
Median absolute change	0.0105 ^c (0.076)	0.0090 ^b (0.041)	-0.0060 ^c (0.068)	-0.0010 (0.776)	-0.0030 (0.310)
Industry-adjusted median change	0.0022 (0.192)	0.0039 (0.129)	-0.0059 ^c (0.052)	-0.0003 (0.802)	0.0005 (0.889)

^a Indicates significance at the 1 percent level.

^b Indicates significance at the 5 percent level.

^c Indicates significance at the 10 percent level.

Overall, the changes in operating income, ROA, and operating margins show no evidence of an increase in profitability by the sample firms, while changes in sales show that these firms do not grow faster than their industries. These findings are consistent with the organizational change hypothesis as an explanation for improvements following successful MBOs. The results are not consistent with the private information hypothesis.

III. Adjustment for Sample Selection Bias

A. Source of the Selection Bias

The sample of unsuccessful MBOs is subject to a selfselection bias. It could be that management cancels the buyout offer because it receives unfavorable information about future cash flows. The bias increases the number of firms with bad information about future performance in the sample. In such cases, the private information hypothesis predicts that firms with a successful MBO will perform better than those with an unsuccessful offer. This makes the organizational change hypothesis hard to distinguish from the private information hypothesis. I try to estimate the extent to which the sample of firms with an unsuccessful MBO offer is affected by such a bias.

B. Changes in Stock Returns and Operating Performance Following Offers That Were Unwillingly Canceled

To control for this selection bias, I separate the sample firms into groups according to the likelihood that they received unfavorable information. The firms are separated according to the reason the managers give for cancellation. The MBO cancellation can be classified into two categories. The first category comprises those in which the managers voluntarily decide to cancel the MBO offer. This group includes reasons such as: poor economic conditions, the firm's latest performance, the buyout group's inability to obtain financing, withdrawal of the offer by management, and cases in which no reason is given for the cancellation. The second category comprises those in which managers unwillingly cancel the offer. This group includes reasons such as: the firm accepts another bid, the bid is rejected by the board, or the bid was rejected by stockholders.

If managers have bad private information about the firm they are likely to initiate the cancellation of the MBO offer, so firms that received bad information are likely to belong to the first group. On the other hand, it is unlikely that managers who canceled the offer unwillingly received bad information, so the firms in the second group should not have the selfselection bias.

A closer examination of offers that were rejected by the board shows several reasons that lead to the board's rejection of the MBO offer. One reason is an offer price that, in the board's opinion, is too low (35 percent of the rejections). Such a conclusion is often based on an independent valuation. In five cases (35 percent), the board announced that the "company is not for sale"; in three of these cases the announcement came after a battle for the firm between the management and a rival group that the board felt was hurting the company. Rejection by the board can also be a result of an ongoing dispute between the management and the board. In two such cases (12 percent), the buyout manager was fired by the board in conjunction with the rejection. In the remaining cases, the rejection announcement provided no additional details. Boards that reject a management offer generally have a

high ratio of outside directors (median is 0.67). This evidence does not show any managerial involvement in the board's decision. It is still possible, however, that the board's rejection disguises a withdrawal by management.

Table III reports the return characteristics of the two groups. Both groups enjoy a significantly positive return around the announcement day. Firms that had the offer voluntarily terminated by the management (group 1) suffer a significant decline in stock price both between the announcement and the cancellation (-13 percent) and around the cancellation (-12 percent); the excess return for this group from one month before the offer until one month after the cancellation is -1.2 percent. In contrast, firms in which the offer was rejected either by the board or by stockholders had an insignificant decline in stock price of -2 percent in the period between the offer announcement and cancellation and a significant decline of -5 percent around the cancellation. Overall, this group enjoyed an excess return of 8.3 percent (not significant) from Month -1 relative to the announcement to Month $+1$ relative to the cancellation. This positive return diminishes, however, in the years following the cancellation. Two years after the cancellation, the excess return for this group is -4 percent (not significant), which indicates that there was no significant increase in value for this group as a result of the buyout offer.

The insignificant return of firms with a rejected offer in the period between the announcement and the cancellation indicates that the public did not receive bad information about the firm during that period that could cause the cancellation. It is still possible that insiders received bad information about the firm that the public was not aware of. But since firms with a buyout offer are followed more closely by investors such as arbitrageurs and other potential bidders, the likelihood that only insiders will be aware of bad information is smaller. This supports the argument that firms with a rejected offer are not subject to the selection bias. The evidence that these firms did not enjoy an excess increase in value as a result of the MBO offer is consistent with the organizational change hypothesis and not consistent with the private information hypothesis.

I also measure changes in operating performance for the subsample of firms in group 2, which includes offers that are canceled because either they are rejected by the board or rejected by stockholders, or because the firm received another bid.⁷ The changes in performance of this subsample are reported in Table V. Panels A and B report the changes in operating income and sales. The results are similar to those of the full sample, showing no excess increase in profits or sales. Generally, there is a growth in nominal sales and earnings, but these increases disappear after the adjustment for industry trends. The industry-adjusted changes are negative but not significant in most cases. Panel C of Table V reports the changes in ROA for the subsample. The changes in ROA in absolute terms and in industry-adjusted terms are mostly negative. The changes from Year -1 to Year $+1$ are

⁷ Results do not change if the firms that receive another bid are excluded from the subsample.

Table V
Performance Changes for Firms that Had the MBO
Unwillingly Canceled

Median changes in various operating performance measures for the subsample of firms that had an unsuccessful MBO offer that management canceled unwillingly. The stated reasons for cancellation are: the offer was rejected by the board, the offer was rejected by the firm's stockholders, or the firm accepted a higher bid. *P*-values of a Wilcoxon signed rank test are in parentheses. EBITD is earnings before interest, taxes, and depreciation.

Performance Measures	Changes from Years				
	– 3 to – 1	– 2 to – 1	– 1 to 1	– 1 to 2	– 1 to 3
Observations	28	28	28	22	15
Panel A. Change in Operating Income					
Median absolute change	0.2600 ^b (0.038)	0.1140 ^a (0.006)	0.0350 (0.864)	0.3300 ^c (0.080)	0.2910 ^c (0.074)
Industry-adjusted median change	0.0000 (0.589)	0.0204 (0.494)	–0.1890 ^a (0.003)	–0.2300 (0.217)	–0.3020 (0.209)
Panel B. Change in Sales					
Median absolute change	0.1690 ^a (0.005)	0.0950 ^b (0.039)	0.1075 (0.531)	0.1710 ^c (0.055)	0.2950 ^b (0.025)
Industry-adjusted median change	0.0000 (0.674)	0.0030 (0.690)	–0.0811 (0.161)	–0.0910 (0.256)	–0.1390 (0.268)
Panel C. Change in EBITD/Assets					
Median absolute change	0.0135 (0.955)	0.0040 (0.918)	–0.0280 ^b (0.028)	–0.0015 (0.884)	–0.0160 (0.363)
Industry-adjusted median change	0.0033 (0.741)	0.0003 (0.792)	–0.0159 ^c (0.090)	0.0114 (0.673)	–0.0024 (0.798)
Panel D. Change in EBITD/Sales					
Median absolute change	0.0075 (0.561)	0.0045 (0.648)	–0.0075 (0.172)	0.0020 (0.779)	–0.0040 (0.551)
Industry adjusted median change	0.0000 (0.855)	0.0013 (0.991)	–0.0064 ^c (0.063)	0.0001 (0.685)	0.0001 (0.670)

^a Indicates significance at the 1 percent level.

^b Indicates significance at the 5 percent level.

^c Indicates significance at the 10 percent level.

statistically significant. Panel D reports the changes in operating margins. These changes are mixed. They are negative from Year – 1 to Year + 1, positive but not significant from Year – 1 to Year + 2, and mixed from Year – 1 to Year + 3.

Overall, there is no evidence in Table V of an improvement in operating performance after an unsuccessful MBO offer. Since all the cancellations in the table are forced cancellations, they are less likely to be subject to a

Table VI**Regressions of Performance Change Between Years -1 and 2**

Multivariate regressions testing the relation between characteristics of the canceled buyout offer and the change in the firm's performance from one year before the offer (Year -1) until two years following the cancellation. *P*-Values are in parentheses, and the number of observations is in square brackets. Management replaced is a dummy variable that equals 1 if the chairman, president, CEO, or officers who were members of the buyout group were replaced. Canceled within 1 Month is a dummy variable that equals 1 if the offer was canceled within 1 month. Defensive Offer is a dummy variable that equals 1 if the management offer followed an offer by a rival bidder.

Dependent Variable	<i>R</i> ²	Constant	Management Replaced	Canceled Within 1 Month	Defensive Offer
Operating income/assets	0.010 [48]	0.035 (0.234)	-0.043 (0.286)	0.047 (0.347)	-0.032 (0.630)
Operating income/assets industry adjusted ^a	0.000 [48]	0.027 (0.318)	-0.026 (0.484)	0.051 (0.257)	-0.007 (0.901)
Operating income/sales	0.000 [48]	0.036 (0.154)	-0.035 (0.316)	-0.044 (0.309)	-0.031 (0.586)
Operating income/sales industry adjusted ^a	0.000 [48]	0.036 (0.180)	-0.024 (0.511)	-0.049 (0.278)	-0.025 (0.672)
Abnormal return ^b	0.095 [38]	0.023 (0.840)	-0.355 ^c (0.044)	0.252 (0.232)	-0.140 (0.530)

^a The industry adjustment is made by subtracting from the change in performance variable the median change of that variable in the industry over the same period.

^b Abnormal return is retrieved from the BXRET array in CRSP. It is measured from one month prior to the offer to 1 or 2 years after the cancellation.

^c Indicates significance at the 5 percent level.

selfselection bias. These results again support the organizational change hypothesis as the cause of improved operating performance after MBOs.

C. Regression Analysis to Further Control Selection Bias

A further investigation into a possible selection bias in the sample is presented in table VI. The table presents results from regressions estimating the relation between various performance measures and the following variables. (1) A management replacement dummy that equals 1 if management was replaced in the year after the cancellation. Most turnovers in the sample occur shortly after the cancellation and may be indicative of unfavorable information about future performance that managers receive. Thus the likelihood of unfavorable information is smaller in firms that did not replace management. (2) A cancellation dummy that equals 1 if the MBO offer was canceled less than one month after it was announced. A longer period between the offer and cancellation increases the likelihood that new bad information about the firm arrives. Thus offers that were terminated less

than one month after their announcement are less likely to be caused by bad information. (3) A defensive bid dummy that equals 1 if management's bid follows an existing bid by a rival group. A defensive bid is less likely to be a result of private information. Thus, if favorable private information is the reason behind other offers, this dummy's coefficient should be negative.

Table VI presents the regressions of these variables on the following measures of performance: unadjusted change in the ratio of EBITD to total assets, industry-adjusted change in this ratio, unadjusted change in the ratio of EBITD to sales, industry-adjusted change in this ratio, and cumulative abnormal return. All changes are measured from Year -1 to Year $+2$. The regressions with changes from Year -1 to Year $+1$ provide similar results and are not reported.

The relation between Year 2 performance measures and the management replacement dummy are negative but generally insignificant. The causality of the negative relations, however, is not clear. It could be either that the poor performance caused the replacement or that the replacement signals the receipt of unfavorable information. A closer look at the group of firms that did not replace management shows that the firms did not experience any significant increase in operational performance following the cancellation of the buyout. Rather, the group that replaced management experience a decline in performance. These results are not reported.

The relations between changes in operating performance variables and the speed of cancellation are mixed and insignificantly different from 0. The direction of these relations varies across the different performance measures. This indicates that firms for which the cancellation comes quickly, and thus is less likely to be a result of new bad information, do not experience higher profitability following the cancellation. The relation between operating performance variables and the defensive bid dummy also are mixed and insignificantly different from 0.

IV. Summary and Conclusion

I find no evidence of improved performance in firms with unsuccessful MBOs. Performance measured both with abnormal stock returns and with accounting variables shows no change from the period before the announcement to the years following the cancellation of the MBO. Although the sample of firms with unsuccessful offers is subject to a selfselection bias, the lack of evidence of a change in operating performance remains after the bias is controlled for. The results in this article are consistent with the hypothesis that changes in organizational structure cause the improved operating efficiency observed after successful MBOs. These structural changes improve managerial incentives and monitoring of the firm. The results are not consistent with the hypothesis that efficiency gains in successful MBOs would have occurred regardless of the MBO and that the buyout is motivated by private information that managers have when they bid for the firm.

I find evidence of costs to managers from attempting an MBO offer that does not succeed. The management turnover rate in the year following the

cancellation of the offer is significantly higher than the annual turnover rate in a random sample.

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