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Author(s): D. Scott Lee

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Management Buyout Proposals and Inside Information

D. SCOTT LEE*

ABSTRACT

This paper explores stock price behavior surrounding withdrawn buyout proposals to determine whether managers' proposal announcements reveal any information which is unrelated to the efficiency gains associated with completed buyouts. On average, firms whose managers withdraw buyout proposals do not sustain significantly positive stock price effects unless they receive subsequent acquisition bids. In addition, managers of firms with completed buyouts are no more likely to have access to inside information than managers who withdrew proposals. I interpret this evidence as inconsistent with the notion that inside information commonly motivates management buyout proposals.

MANAGEMENT BUYOUTS OCCUR WHEN a group of investors, including some incumbent managers, buy all of a firm's outstanding common stock with the intent of taking it private. Critics of management buyouts argue that managers' access to inside information allows them to time their proposals to expropriate the wealth of outside shareholders. These opponents generally cite anecdotal evidence that favorable inside information motivates management buyout proposals.¹ Managers themselves suggest that their proposals are motivated, at least in part, by their information advantage.² However,

* Assistant Professor of Finance, Texas A & M University. This paper is based on my University of Oregon dissertation. I gratefully acknowledge the guidance and assistance of my dissertation committee: Alyce Campbell, Mike Hopewell, and especially Wayne Mikkelson (chairman). I also wish to thank John Byrd, John Cresson, Dave Dubofsky, Paul Halpern, Sherry Jarrell, Robert Kieschnick, Tim Opler, Ed Rice, Rick Ruback, and Mike Vetsuypens for their detailed and thoughtful suggestions.

¹ See Arthur Lipper III, "Are LBOs based on insider information," *Venture*, August 1987, p. 7, and several articles by Benjamin J. Stein, "Leveraged buyouts: On the level?" *New York Times Magazine*, January 17, 1988, pp. 40-46; "A saga of shareholder neglect: Whose interest was this management protecting?" *Barron's*, May 4, 1987, pp. 8-9, 70-75; "Shooting fish in a barrel: Why management always makes a bundle in an LBO," *Barron's*, January 12, 1987, pp. 6-7, 20-24.

² Maupin, Bidwell, and Ortgren (1984) survey the financial officers of firms which went private and a majority of the 63 respondents say "... The below book value selling price (of the publicly traded shares) did not reflect the higher 'real' value of the company. They contend that the primary reason for the buyout transaction was that 'the stock had been selling so far below its real value that the best way to enable shareholders to realize the maximum amount on their investment was through a management buyout,'" (pp. 441-442). If the market is semi-strong form efficient, then managers' perceptions of undervalued shares must reflect inside (asymmetric) information.

researchers have given little consideration to whether inside information influences managers' decisions to propose buyouts.

While there is convincing evidence that buyouts cannot be motivated by inside information alone, it is not difficult to conceive of managers' inside information having a marginal impact on their decision to propose a buyout. For example, a management buyout can be viewed as an extreme form of a stock repurchase in which managers make large personal wealth and human capital investments. Available evidence suggests that managers use their information advantage in their decisions to repurchase common stock as well as their personal investment decisions (i.e., insider trading).³ Thus it is plausible that inside information might similarly influence managers' decisions to propose a buyout.

On the other hand, management buyouts "rank among the most intensely regulated transactions in our entire marketplace."⁴ The extensive disclosure requirements and the high probability of shareholder litigation associated with buyout proposals may cause managers to carefully avoid any actions giving the appearance of impropriety. Managers' incentives to propose a buyout when their firm is undervalued may be eclipsed by their desire to avoid legal and regulatory delays that would defer the substantial efficiency gains which generally follow these transactions.⁵

If managers propose a buyout when they have information whose value ultimately would accrue to the firm's shareholders even in the absence of the buyout, these proposals should immediately reveal the presence of inside information and investors will revise the firm's stock price accordingly. In this scenario, some part of the positive stock price effect from the proposal announcement will persist even if the buyout is not completed, *ceteris paribus*.

DeAngelo, DeAngelo, and Rice (1984) conduct the first test of a buyout-related information effect. For a sample of 20 withdrawn buyout proposals, they detect a 25% average prediction error cumulated over an event period beginning 40 trading days before each firm's proposal announcement and continuing to 40 trading days past the corresponding withdrawal announcement. They offer the following potential (not mutually exclusive) explanations.

1. The revaluation includes a permanent upward revision of the firm's prospects as a public company.

³ Dann, Masulis, and Mayers (1991) detect abnormal increases in earnings per share in the years following a common stock repurchase announcement, suggesting that managers repurchase shares when they foresee improved earnings. Lee, Mikkelsen, and Partch (1992) and Seyhun (1986) find evidence consistent with corporate managers earning abnormal profits by trading their firms' shares in accordance with inside information.

⁴ Securities and Exchange Commissioner Joseph A. Grundfest, "Management buyouts and leveraged buyouts: Are the critics right?" in Y. Amihud, ed., *Leveraged Management Buyouts*, (Dow Jones-Irwin), p. 245.

⁵ Bull (1989), Kaplan (1988, 1989b), Muscarella and Vetsuypens (1990), and Smith (1990) document efficiency gains following management buyouts.

2. The revaluation capitalizes the probability that managers will revive their proposal, or another party will attempt to acquire the firm, in order to reap the potential benefits from changing the firm's organizational structure.

If the proposal announcement reveals inside information unrelated to the buyout transaction itself (their first conjecture), some part of the resulting positive stock price effect will persist after the proposal is withdrawn even in the absence of other bids. If their second conjecture *fully* explains their evidence (i.e., the stock price reaction to the proposal announcement is entirely transaction-dependent) the positive stock price effect will dissipate for firms with withdrawn buyout proposals that receive no other acquisition bids.

I propose and test two hypotheses based on the DeAngelo, DeAngelo, and Rice (1984) conjectures. The *control transfer hypothesis* states that stock price increases associated with management buyout proposals stem *solely* from heightened expectations of a control transfer which will lead to value-increasing changes in the firm's operation. If proposal announcement stock price increases are solely in anticipation of a transfer of control, they will dissipate upon the proposal's withdrawal unless an alternative bid is proposed or anticipated.

The *information hypothesis* states that managers propose a buyout when they have favorable inside information about the firm's value which is unrelated to the buyout transaction. It predicts that inside information *contributes* to managers' proposal decisions, not that management buyouts are motivated solely by inside information. According to the information hypothesis, part of the positive stock price effects documented for withdrawn buyout proposals will persist even in the absence of subsequent acquisition bids.

The control transfer and information hypotheses are variants of the synergy and information hypotheses of interfirm tender offers advanced by Bradley, Desai, and Kim (1983). The control transfer hypothesis resembles their synergy hypothesis in its focus on the efficient redeployment of assets following a transfer of corporate control. Some aspects of the synergy hypothesis, such as increased market power and economies of scale, obviously do not apply in the buyout scenario. The critical prediction of both their synergy hypothesis and the control transfer hypothesis is that stockholder benefits are entirely transaction-dependent, implying that a firm's stock price will revert to pre-proposal levels if the transaction is withdrawn and not replaced by another control bid. The information hypothesis, adopted from Bradley, Desai, and Kim (1983) predicts a permanent stock price revision attributable to the inside information revealed by managers' buyout proposal.

My test results do not support the information hypothesis. On average, firms do not experience lasting improvements in stock returns after their buyout proposals are withdrawn unless they receive other acquisition bids. Since managers may withdraw proposals because their initial assessment of

firm value was overly optimistic, or in response to other unfavorable revelations following the proposal announcement, I have conducted additional tests of buyout proposals which were withdrawn because of shareholder or board resistance *and* that received no other control bids. Tests of this refined sample lead to the same conclusion; stock price increases associated with management buyout proposals do not reflect, on average, favorable inside information about the firm's value.

An alternative explanation for my results is that information asymmetry is present to a lesser extent for firms whose buyout proposals are withdrawn than for firms whose proposals are completed. Therefore, I analyze several proxies of information asymmetry to test whether managers of firms with withdrawn proposals are less likely to have access to inside information than managers of firms with completed proposals. The test results are inconsistent with this hypothesis.

I interpret the collective evidence presented in this paper as inconsistent with the information hypothesis. It appears that shareholder returns associated with announcements of management buyout proposals reflect only the gains expected to follow a successful transfer of control. Of course, my tests do not rule out the possibility that inside information about asset underpricing was revealed by isolated buyout proposals. They indicate that inside information typically plays an unimportant role in managers' buyout proposal decisions.

Section I reviews the related evidence. Section II describes the data used in the study. I discuss methodological issues in Section III, followed by my empirical results in Section IV, and conclusions in Section V.

I. Related Literature

Available evidence pertaining to the information hypothesis of management buyout proposals is limited and inconclusive. As previously noted, DeAngelo, DeAngelo, and Rice (1984) study a sample of 20 withdrawn buyout proposals. On average, these firms experience a 36% cumulative prediction error over the 41-day period preceding and including the proposal announcement. Subsequent losses result in an average 25% cumulative prediction error over a period beginning 40 days before each firm's proposal announcement and continuing to 40 days past its withdrawal announcement.

For a sample of 15 firms, Marais, Schipper, and Smith (1989) report an average 15% loss during a period beginning the day after the proposal announcement and ending with the withdrawal announcement. They report a 9% average gain during a 69-day period preceding the proposal announcement and a 2-day average prediction error of 13% at the proposal announce-

⁶ Pre-proposal and proposal announcement prediction errors are not reported for their unsuccessful buyout sample, but they state that these statistics are virtually indistinguishable from those reported for their full sample of buyout proposals. See Marais, Schipper, and Smith (1989), footnote 25, page 181.

ment for their full sample.⁶ Citing this evidence, Smith (1990) compares the 15% average loss following the proposal announcements of unsuccessful buyouts to the 13% average gain at proposal announcement for the full sample and argues that the evidence is inconsistent with the information effect. However, the average 9% gain preceding the proposal announcement may be attributable to information leakage preceding the official press announcement. Summing their average prediction errors over a period beginning 69 days before the proposal announcement and ending on the withdrawal announcement results in a 7% cumulative prediction error which is consistent with the information hypothesis (Figure 1).

Smith (1990) also examines the operating performance of a sample of 18 firms whose buyout proposals were rejected by the board or shareholders ($N = 8$) or withdrawn ($N = 10$). She finds no evidence of improved operating returns after the failed buyout proposals that is comparable to the improvements found following successful buyout proposals. This evidence does not support the information hypothesis because some operating gains should occur even without a control change if the proposals are motivated by favorable inside information about future operating returns.⁷ However, increases in operating cash flows are only one potential source of an information effect. Some argue that assets-in-place, particularly real estate, can be a source of hidden value which the market sometimes fails to recognize until

⁷ In a study of accounting variables and management turnover following unsuccessful buyout proposals, Ofek (1991) draws conclusions which corroborate the stock return evidence reported here.

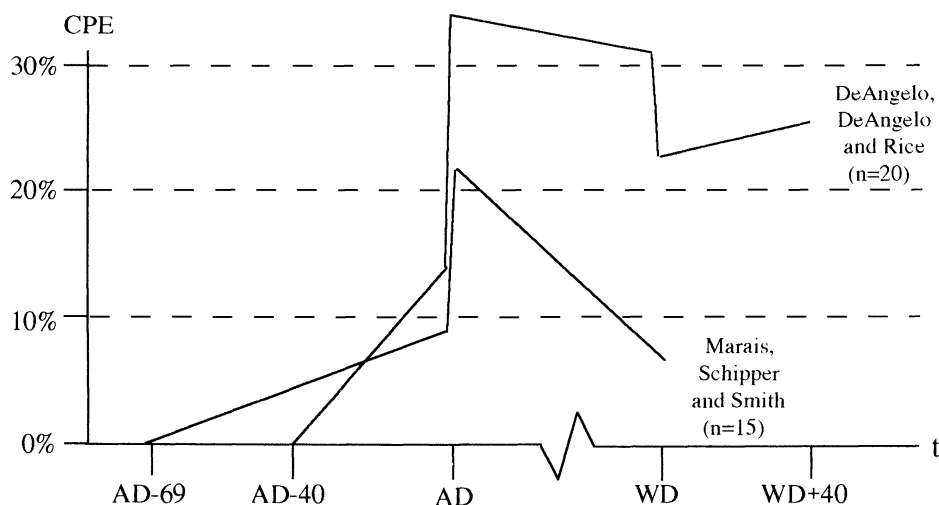


Figure 1. Cumulative prediction errors reported in two studies of withdrawn management buyout proposals. AD is the proposal announcement date and WD is the withdrawal announcement date.

managers propose a buyout.⁸ Another possibility is that managers propose a buyout when they have moved to significantly decrease the firm's systematic risk. If management buyout proposals prompt investors to revalue the firm for either of these reasons, stock returns will capture the resultant information effect while accounting measures may fail.

Another potential problem with Smith's evidence on unsuccessful buyout proposals is that more than half (10 of 18) of the withdrawals occurred for reasons unspecified in her study. When managers withdraw buyout proposals without active shareholder or board opposition, the withdrawal may reflect mistakes in managers' initial decision to propose the buyout or entirely unforeseen changes in the circumstances surrounding the buyout (e.g., rising interest rates that increase the cost of financing the buyout or opposition from regulatory agencies). Under such circumstances, prediction errors cumulated over a period including both the proposal and withdrawal announcements will obscure the effect of the proposal announcement by entangling the effects of offsetting, potentially unrelated, revelations. Just as withdrawals accompanied by outside bids would bias tests of stock returns toward detecting an information effect, unopposed buyout proposals that were withdrawn of the managers' own volition would bias tests against detecting an information effect. Thus tests for a buyout proposal information effect should exclude withdrawals motivated by either higher bids or discoveries of bad news in order to minimize confounding valuation effects.

Kaplan (1989a) uses a sample of completed buyouts to test and reject an *underpricing* hypothesis of management buyouts. Kaplan's underpricing hypothesis considers the extent to which inside information allows participating managers to earn *post-buyout* excess returns. In contrast, the *information* hypothesis focuses on the immediate capital market impact of managers' buyout proposal announcements.

Finally, Maupin, Bidwell, and Ortegren (1984) surveyed financial officers who participated in successful buyouts of their firms. According to a majority of the officers who responded, a prime motive in their decisions to propose buyouts was their belief that their firm's shares were underpriced.

In summary, it is plausible that managers propose a buyout when their firm's assets are undervalued in the capital market because investors are not fully informed about future cash flows. Evidence that managers' decisions convey information about the firm's future cash flows to investors has been

⁸ From Benjamin J. Stein, "Shooting fish in a barrel: Why management always makes a bundle in an LBO," *Barron's*, January 12, 1987, page 7: "the outside directors were genuinely shocked at how much was left on the table for management after the LBO (leveraged buyout). Why the real estate could be sold at a high price relative to its effect on cash flow is an interesting question. It basically has to do with the arbitrage in real estate price compared with lease income caused by residual inflationary expectations in the health field. It also has to do with what Beverly management knew that the analysts did not know: that only a small amount of the value of a nursing-care company is added by ownership of real estate. ... Management saw that by a combination of liquidation of assets and maintenance of a going concern, it had a vastly more valuable company than the market realized." See also Brennan (1990).

reported in studies of other managerial decisions such as common stock repurchases (Dann, Masulis, and Mayers (1991) and Lee, Mikkelsen and Partch (1992)) and interfirm asset sales (Hite, Owers, and Rogers (1987)). However, previous studies of management buyout proposals provide mixed and inconclusive evidence regarding the information hypothesis.

II. Data Selection and Sources

To identify management buyout proposals which were withdrawn I searched the *Dow Jones News/Retrieval* service, W. T. Grimm's *Mergerstat Review*, *Mergers and Acquisitions* "Out the Window" column and the *Wall Street Journal Index* "Going Private" and "Reacquired Shares" listings. Buyout proposals were excluded if I could not determine the dates of the proposal and withdrawal announcements, and if the news reports did not indicate that some incumbent managers and directors were part of the buyout group. Management buyout proposals announced within six months of an earlier outside acquisition bid or rumor were excluded since buyouts in response to outside bids are unlikely to be motivated by managers' inside information.

Divisional buyout proposals were excluded from the sample because they generally receive board approval before they are proposed and are subject to less restrictive legal requirements than buyouts of an entire firm. The fairness opinions and shareholder votes required when an entire firm is bought out are not required for divisional buyouts, so even in the unlikely event that a divisional buyout fails it would not be because of shareholder or board resistance.

My results are based on 118 withdrawn management buyout proposals identified between November 1973 and December 1989.⁹ Stock return data are available from the *Center for Research in Security Prices Daily Returns File* for 114 of the original 118 firms. Two additional screens reduce extraneous stock price effects around the buyout proposal and withdrawal announcements. First, I identified firms that received other acquisition bids in a period beginning with the buyout proposal announcement and continuing two years past the proposal's withdrawal.¹⁰ Second, I partitioned the sample on the basis of managers' stated reason for withdrawing the proposal using articles

⁹ Abbie Smith generously provided a sample of unsuccessful buyout proposal announcements containing valuable observations from the 1970s. Mohan (1986) also lists some early unsuccessful buyout proposals.

¹⁰ No theory exists to predict an optimal screening window. The window should begin far enough before the proposal to screen out defensive responses to hostile bids, thereby increasing the likelihood that the buyout proposal involves managers' inside information. The window must also extend far enough beyond the withdrawal announcement for me to be reasonably confident that investor expectations of an acquisition bid have returned to their approximate pre-proposal level. Fabozzi, Ferri, Fabozzi, and Tucker (1988) use a one-year post-withdrawal screening window in their study of information effects associated with interfirm tender offers and conclude that heightened market expectations of later acquisition bids dissipate long before the window ends. The results reported here are not discernibly different when I use a one-year screening window.

from the *Dow Jones News/Retrieval* service and *The Wall Street Journal Index*.

Of the 114 firms with available returns, 58 received other bids between the proposal announcement and the two year cutoff following the withdrawal announcement. Only five of these subsequent bids occurred in the second year following the withdrawal, suggesting that a one-year post-withdrawal window may be adequate for such tests. This paper reports the results of the two-year post-withdrawal window, but the results are robust to either choice of screening window.

I established three categories of managerial reasons for withdrawal (Table I). Managers withdrew their buyout proposal because of a *superior rival bid* in 14 cases. Another 48 withdrawals occur in response to *adverse information* such as financing difficulties, lenders advising against the buyout or renegeing on promised funds, rising interest rates, economic uncertainty, or stock market volatility. This category includes three cases where delayed tax or regulatory rulings caused managers to withdraw their proposals, and seven cases where managers withheld comment but news articles surrounding the withdrawal announcement indicated no conflict between the buying and selling parties. The 52 remaining *bargaining impasse* withdrawal announcements contain direct references to the board of directors or shareholders opposing the management's bid.

Twenty firms in the bargaining impasse category received other acquisition bids during the period beginning with managers' proposal announcement and ending two years after their withdrawal announcement. The remaining 32 firms provide the most useful sample for testing the information hypothesis because their returns are neither systematically increased by outside bids nor systematically reduced by bad news.

Table I
Distribution By Category of Sample of Withdrawn
Management Buyout Proposals

This table partitions the sample by the existence of other bids and by managers' stated reason for withdrawal. I exclude firms which received other bids in the six months preceding the buyout proposal. Firms in the other bids category received another bid sometime after their managers' proposal announcement and within two years of the withdrawal announcement. I classify withdrawn proposals as due to board or shareholder resistance when managers explicitly state this as their reason in the *Wall Street Journal* or *Broadtape*. The remaining classifications are firms that received dominant bids, and firms that received adverse information (e.g., financing difficulties, lenders renegeing or advising against the buyout, rising interest rates, economic uncertainty, stock market instability, and delayed rulings on regulatory or tax issues).

	Other Bids	No Other Bids	Total
Dominant Bid	14	0	14
Adverse Information	24	24	48
Bargaining Impasse	20	32	52
Total	58	56	114

The sample distribution across time reflects the rise and fall of these transactions from popularity over the last decade, 68 of the proposals (60%) were announced within the five-year span from 1984 through 1988 (Table II). Sixty-three of the firms were exchange-listed and the remaining 51 were traded over-the-counter. The firms are broadly distributed across firm size as measured by market value of equity, although there are more small firms than large. The number of proposals per size decile ranges from seven (the tenth decile, or largest firms) to sixteen (the sixth decile). The average length of the interim period between proposal and withdrawal announcements is 74 trading days, however this figure reflects the influence of a few buyout proposals that were outstanding for a year or more before they were withdrawn. The median length of the interim period is 40 trading days, thus approximately half of the withdrawals occur within two months of the proposal announcement.

III. Measuring Abnormal Stock Returns

A. Risk-Adjusted Prediction Errors

Abnormal stock price performance is measured over several intervals surrounding the management buyout proposal and withdrawal announcements. The time line below identifies the estimation period for market-model parameter estimates, and a prediction period spanning a buyout proposal

Table II
Distribution Across Time of
Sample of 114 Management
Buyout Proposal Announcements
Which Were Subsequently
Withdrawn

1973	1
1974	4
1975	1
1976	1
1977	3
1978	10
1979	6
1980	2
1981	4
1982	5
1983	7
1984	17
1985	15
1986	8
1987	10
1988	18
1989	2
Total	114

announcement date (AD) and the withdrawal announcement date (WD) (Figure 2).

Prediction errors are measured using the market-model:

$$PE_{i,t} = R_{i,t} - (a_i + b_i R_{m,t}) \quad (1)$$

where $R_{i,t}$ is the with-dividend continuously compounded return for security i for day t and $R_{m,t}$ is the corresponding return for an equally-weighted index for day t relative to event i .¹¹ Market-model parameters are estimated over a 200-day pre-event interval. Security i 's parameter estimates, a_i and b_i , are used to calculate daily prediction errors, $PE_{i,t}$, which are cumulated over various intervals surrounding the proposal and withdrawal announcements.

The variance of the cumulative prediction errors is:

$$\text{Var} \left(\sum_{t=t_1}^{t_2} PE_{it} \right) = V_i^2 \left[T + \frac{T^2}{E} + \frac{\left(\left(\sum_{t=t_1}^{t_2} R_{mt} \right) - T \cdot \bar{R}_m \right)^2}{\sum_{E=E_1}^{E_2} (R'_{mj} - \bar{R}_m)^2} \right] \quad (2)$$

In the equation above, V_i^2 is the residual variance of firm i 's market-model regression. T is the number of days in the interval and equals $t_2 - t_1 + 1$, E is the number of days in the market model estimation period and $R'_{m,j}$ is the market's return on day j of the estimation period. Significance tests of the cumulative prediction errors use the following Z -statistic:

$$Z_i = \frac{1}{\sqrt{N}} \sum_{i=1}^N \left(\sum_{t=t_1}^{t_2} PE_{it} \right) / \left(\text{Var} \left(\sum_{t=t_1}^{t_2} PE_{it} \right) \right)^{1/2}. \quad (3)$$

This familiar market-model procedure poses several problems for this study. First, cumulating individual prediction errors which all depend on the same set of parameter estimates induces serial dependence between successive prediction errors necessitating an estimate of the variance of the *sum* of the prediction errors as described above. This is of little consequence when

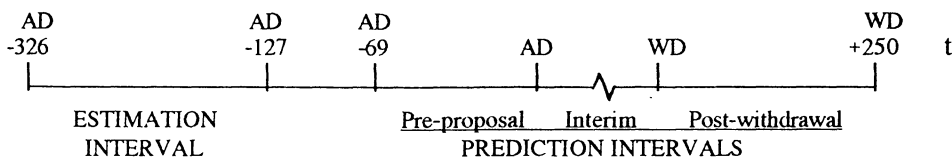


Figure 2. AD = proposal announcement date, WD = withdrawal announcement date.

¹¹ Reinganum (1990) reports persistent return differences across markets even after controlling for firm size, so I use an equally-weighted index of all NYSE and ASE securities when the sample firm is exchange-listed and an equally-weighted index of all NASDAQ firms for OTC firms in the sample.

event windows are small, but it reduces the power of significance tests associated with the long measurement windows used in this study.

Second, over half of the firms in my sample come from the five lower size deciles. Dimson and Marsh (1986) argue that the convention of using market-model alpha estimates to capture size effects is flawed by the variability over time of size effects and the noise introduced by historical estimates. They warn that this problem is also particularly serious for extended estimation periods.

Finally, finding a parameter estimation period is difficult, at best. Pre-proposal estimation windows are the only practical alternative given the length of this study's post-withdrawal observation period and the number of sample firms which are acquired by other bidders after their initial management buyout proposals are withdrawn. Unfortunately, Bruner (1986) reports abnormally poor stock price performance typically precedes managers' buyout proposals. Thus, pre-proposal estimation periods may lead to downward biased estimates of the market-model parameters and upward biased abnormal return estimates. I attempt to avoid this problem by displacing the parameter estimation period six months before the buyout proposal. Of course, there is no assurance that six months are sufficient, but separating the estimation period further from the observation period leads to obvious questions about the relevance of the resulting parameter estimates to the firm during the observation period.

B. Abnormal Stock Returns Using Size-Matched Indices

I repeat all returns tests with a comparison portfolio approach suggested by Dimson and Marsh (1986) to alleviate the problems associated with the more conventional market-model methodology. Dimson and Marsh (1986) conclude that once the size-matched index approach is adopted no marginal advantage is gained through risk-adjustment. The following steps describe the index selection and the associated tests for abnormal stock returns.

1. Determine firm i 's market equity value and the matching capitalization decile of the appropriate CRSP equal-weighted index. If the firm is traded over-the-counter, use CRSP's NASDAQ decile indices, otherwise use the NYSE/ASE decile indices.
2. Firm i 's daily *abnormal return*, $AR_{i,t}$, is the firm's daily return, $R_{i,t}$, minus that day's return for the corresponding decile of the CRSP index, $R_{s(i),t}$, where $s(i)$ is the size-based decile of firm i .

$$AR_{i,t} = R_{i,t} - R_{s(i),t} \quad (4)$$

3. Sample variance estimates, V_i^2 , come from the 200-day estimation interval, $t = \text{AD} - 326$ to $\text{AD} - 127$. The variance of the cumulative abnormal returns is:

$$\text{Var} \left(\sum_{t=t_1}^{t_2} AR_{it} \right) = V_i^2(T), \quad (5)$$

T is the number of days in the interval and equals $t_2 - t_1 + 1$. Significance tests use the following Z-statistic:

$$Z_i = \frac{1}{\sqrt{N}} \sum_{i=1}^N \left(\sum_{t=t_1}^{t_2} AR_{it} \right) / \left(\text{Var} \left(\sum_{t=t_1}^{t_2} AR_{it} \right) \right)^{1/2}. \quad (6)$$

IV. Empirical Evidence

A. Results of Alternative Methods of Estimation

Table III reports size-matched index-adjusted stock performance measures (hereafter *abnormal returns*) and market-model risk-adjusted stock performance measures (hereafter *prediction errors*) cumulated over various event windows that include both the proposal and withdrawal announcements of withdrawn management buyout proposals. I detect an average 12.7% cumulative prediction error for my full sample of 114 withdrawn proposals compared with the 25.3% figure reported by DeAngelo, DeAngelo, and Rice (1984) for a period beginning 40 trading days before the proposal announcement and ending 40 trading days after the withdrawal announcement. I find an 11.7% mean cumulative prediction error compared to Marais, Schipper, and Smith's (1989) 7.0% figure for a period beginning 69 trading days before the proposal and ending with the withdrawal.

Comparing the results of both estimation procedures confirms Dimson and Marsh's warning that long cumulation periods are likely to tax the reliability of market-model methods. The alternative methods produce virtually identical results for shorter intervals (e.g., the 2-day proposal and withdrawal announcement intervals), but the results differ substantially for longer intervals. More importantly, the market-model procedure appears marginally less powerful than the size-matching procedure when longer event windows are used (e.g., compare the significance levels for the statistics cumulated over the interim interval under the alternate procedures).¹²

B. Valuation Effects of Withdrawn Management Buyout Proposals

This section examines the effect of other acquisition bids and managers' stated reason for withdrawal on the abnormal returns surrounding withdrawn management buyout proposals. Table IV shows the abnormal returns for four subsets and the full sample of withdrawn buyout proposals. These returns are cumulated for five overlapping periods which span each firm's proposal and withdrawal announcements. Due to the influence of positive

¹² For brevity, I report only the results of the size-matching method throughout the remainder of the paper. All tests were replicated with the market-model procedure, consistently producing more extreme estimates of mean cumulated excess returns and lower significance levels than the size-matching method. The conclusions reached in this paper would be enhanced by use of the market-model estimates.

Table III
Comparison of Excess Returns Reported in Three Studies
of Withdrawn Management Buyout Proposals

This table presents mean excess returns cumulated across various event windows around each firm's proposal announcement (AD) and withdrawal announcement (WD). The first three columns report cumulative prediction errors calculated by market-model risk-adjustment procedures. The fourth column reports cumulative abnormal returns calculated by a size-matched index-adjustment procedure.

Cumulation Interval	Cumulated Prediction Errors (%)			Cumulated Abnormal Returns (%)
	DeAngelo, DeAngelo, and Rice (1984) <i>N</i> = 20	Marais, Schipper, and Smith (1989) <i>N</i> = 15	Lee <i>N</i> = 114	Lee <i>N</i> = 114
Spanning both announcements				
(AD - 40) to (WD + 40)	25.3 ^a	—	12.7*	9.9*
(AD - 40) to (WD + 250)	—	—	20.3*	9.1*
(AD - 69) to WD	—	7.0* [‡]	11.7*	10.1*
Pre-proposal				
(AD - 40) to (AD - 2)	14.9*	—	6.9*	5.3*
(AD - 69) to (AD - 2)	—	9.0* [‡]	7.5*	5.9*
Proposal announcement				
(AD - 1) to AD	20.7 ^a	13.0* [‡]	14.9*	14.8*
Interim				
(AD + 1) to (WD - 2)	-4.8	—	-4.8	-4.7*
Withdrawal announcement				
(WD - 1) to WD	-8.9*	—	-5.9*	-5.9*
Interim and withdrawal				
(AD + 1) to WD	-13.7 ^a	-15.0*	-10.7	-10.6*
Post-withdrawal				
(WD + 1) to (WD + 40)	3.4	—	1.6	0.4
(WD + 1) to (WD + 250)	—	—	9.2	-0.5

^a Significance levels are unavailable for these statistics because they are reported in or inferred from the footnotes of DeAngelo, DeAngelo, and Rice (1984).

* Denotes significance at 0.01 level of significance.

[‡] Significance levels corresponds to Marais, Shipper, and Smith's (1989) full sample of 80 buyout proposals, which they report do not differ perceptibly from the corresponding figures for their unsuccessful buyout proposals.

outliers on the smaller partition's means, I report median abnormal returns in parentheses alongside the mean abnormal returns. Below the average cumulative abnormal returns are the *Z*-statistic from equation 6 and the proportion of positive cumulated abnormal returns for the interval. A binomial sign test serves as a robustness check to the *Z*-statistic which is prone to the influence of outlier returns.

Column A of Table IV reproduces the average abnormal return for the full sample of withdrawn management buyout proposals. Column B shows

Table IV
**Abnormal Returns for 114 Withdrawn Management Buyout Proposals
 (1973–1989) Grouped by the Existence of Other Acquisition Bids
 and by Managers' Stated Reason for Withdrawing the Proposal**

This table presents average abnormal stock returns cumulated across event windows which include the firm's proposal announcement (AD) and withdrawal announcement (WD). The sample is partitioned to reveal the stock valuation effect of other bids and managers' withdrawal reason. I exclude firms which received other bids in the six months preceding the buyout proposal and searched for other bids for two years past each firm's withdrawal announcement. I classify withdrawn proposals as due to board or shareholder resistance when managers explicitly state this as their reason in the *Wall Street Journal* or *Broadtape*. Two classifications not reported in this table are: 1) firms that received dominant bids; 2) firms that received adverse information (e.g., financing difficulties, lenders reneging or advising against the buyout, rising interest rates, economic uncertainty, stock market instability, and delayed rulings on regulatory or tax issues). Mean and median (in parentheses) cumulative abnormal returns are reported for each cell. In brackets are the Z-statistic and the proportion of abnormal returns which are positive.

	(A) Full Sample of Withdrawn Buyout Proposals N = 114	(B) Sample Firms That Received Other Bids N = 58	(C) Sample Firms That Received No Other Bids N = 56	(D) Proposals Withdrawn Due To Board Or Shareholder Resistance N = 52	(E) Firms Receiving No Other Bids With Proposals Withdrawn Due To Resistance N = 32
Cumulation Interval					
(AD – 1) to WD	3.0% (0.7%) [3.93, 0.52]	7.2% (4.2%) [5.56, 0.59] ^b	– 1.1% (– 2.6%) [– 0.06, 0.45]	3.7% (– 1.0%) [2.71, 0.46]	0.5% (– 4.0%) [0.23, 0.41]
(AD – 10) to WD	8.0% (7.1%) [5.53, 0.61] ^a	11.6% (10.2%) [6.35, 0.62] ^b	4.5% (3.2%) [1.43, 0.59] ^b	9.9% (7.2%) [4.07, 0.65] ^a	5.8% (3.1%) [1.11, 0.59]
(AD – 40) to WD	9.5% (3.0%) [4.34, 0.54] ^b	14.4% (11.6%) [4.87, 0.64] ^a	2.8% (– 2.7%) [1.23, 0.45]	8.2% (4.1%) [2.92, 0.54]	2.6% (– 6.5%) [0.51, 0.44]
(AD – 40) to (WD + 40)	9.9% (5.8%) [3.79, 0.58] ^b	15.4% (18.0%) [4.89, 0.67] ^a	2.6% (– 1.5%) [0.43, 0.48]	8.1% (4.9%) [2.36, 0.54]	6.3% (– 4.5%) [0.90, 0.44]
(AD – 40) to (WD + 250)	9.1% (10.9%) [2.51, 0.61] ^a	18.4% (20.4%) [3.33, 0.69] ^a	0.2% (2.5%) [0.20, 0.54]	10.6% (19.7%) [2.15, 0.67] ^a	7.7% (10.3%) [1.26, 0.63] ^b

^a A binomial sign test detects a significant difference at the 0.01 level between the proportion of positive abnormal returns in this event window and the proportion of positive abnormal returns during the pre-event estimation interval.

^b A binomial sign test detects a significant difference at the 0.10 level between the proportion of positive abnormal returns in this event window and the proportion of positive abnormal returns during the pre-event estimation interval.

significantly positive average abnormal returns for firms that received other bids after their managers' buyout proposal. In contrast, the results displayed in Column C for firms that received no other bids are generally indistinguishable from zero. This evidence indicates that increases in stock price associated with these firms' proposal announcements dissipate when managers withdraw their offers unless another bid is pending or has been received. This result is inconsistent with the notion that management buyout proposals convey inside information to the market.

However, it is possible that I obscure a positive information effect related to the proposal announcement by examining the average abnormal returns of all firms that received no other bids. Many buyout proposals are withdrawn specifically because the bidding managers discovered unforeseen bad news about the firm's future prospects while arranging financing for the deal. Buyout proposals withdrawn because of shareholder or board resistance experience significantly greater average abnormal returns than proposals withdrawn because of adverse information.¹³ The evidence pertaining to managers' withdrawal motives confirms the importance of considering the circumstances of withdrawal and leads to one more data partition.

The most persuasive evidence regarding the information hypothesis is associated with 32 withdrawn buyout proposals which stockholders or the board resisted *and* which received no other bids. For these 32 firms, average abnormal returns cumulated across each firm's proposal and withdrawal announcements are indistinguishable from zero (Table IV, Column E). In interpreting this evidence, the familiar caveats about the power of tests involving small samples and long event windows must be considered. Obviously, these tests speak only to averages and cannot rule out the possibility that inside information occasionally influences a manager's decision to propose a buyout. However, I interpret this evidence as inconsistent with the notion that managers' inside information is a common motivation for buyout proposals.¹⁴

C. The Impact of Information Asymmetry on the Probability of Withdrawal

One additional concern is whether information asymmetry is less likely to be present in the firms whose buyout proposals were withdrawn than in firms

¹³ Cumulative abnormal returns for the sample of 14 firms which received dominant bids are obviously positive. For the 48 remaining firms whose bids were withdrawn in response to adverse information, the cumulative abnormal returns for the intervals reported in Table IV are insignificantly negative. The -5.88% mean abnormal return cumulated from one day before the proposal announcement through the withdrawal announcement (AD -1 to WD) is the only cumulation period spanning both announcements for which the stock price effect approaches significance ($Z = -1.73$).

¹⁴ This subsample of 32 firms experiences marginally significant positive abnormal returns for the cumulation interval which extends approximately one year beyond the withdrawal announcement. This puzzling post-event increase in value is associated with a few firms' subsequent capital structure activities such as common stock repurchases and asset sales. I intend to investigate this pattern more closely in future research.

whose buyouts were completed. Hirshleifer and Titman (1990) present a model in which asymmetric information decreases the probability of success for a tender offer. They contend that a bid need only exceed the post-takeover value by one cent to succeed when the target's post-takeover value is known. However, overbidding will not assure success when target shareholders are uncertain of the post-takeover value because higher bids may be interpreted as an indication that the post-takeover value is even higher. Incentives to underbid (bid less than your reservation price) decrease as target shareholders' certainty of the post-takeover value increases, so bids are more likely to fail when information asymmetry is greater. This line of reasoning suggests that information asymmetry is *more* likely to be present in firms whose management buyout proposals were withdrawn due to shareholder or board resistance than in firms with completed proposals.

To further investigate the possibility that systematic differences in information asymmetry distinguish firms with completed buyouts from firms whose proposals were withdrawn, I assemble a comparison sample of 178 firms with completed management buyouts proposed between 1973 and 1989. The majority of this comparison sample was provided by Robert Kieschnick, additional observations were identified in Lehn and Poulsen (1989), Mohan (1986), *Mergerstat Review*, and the *Wall Street Journal Index* "Going Private" and "Reacquired Shares" subject headings. To assure comparability of samples, I discard unit buyouts and buyouts in which no incumbent managers participated.

I examine four proxies of asymmetric information: (1) analyst following, (2) number of wholly-owned subsidiaries, (3) firm size, and (4) market to book value ratio.¹⁵ If information asymmetry declines with analyst scrutiny and the success of management buyouts depends on information asymmetry, then firms with completed buyouts should have a smaller analyst following than firms with withdrawn proposals. However, firms whose buyouts succeeded had significantly *larger* analyst followings than their counterparts whose proposals were eventually withdrawn (Table V) even though roughly the same proportion of firms in each sample receive analyst coverage.

Foster (1986) argues that managers sometimes use organizational complexity across lines of business and national boundaries to obscure their firm value from industrial competitors. I use the firm's number of subsidiaries as a proxy for organizational complexity and information asymmetry relying on the premise that an outside analyst's ability to estimate firm value decreases as organizational complexity increases. I find that firms with withdrawn buyouts have no fewer subsidiaries than firms with completed buyouts and, by this proxy, are no less organizationally complex.

It has been suggested that analysts have less incentive to investigate small firms and the financial press is less likely to publish information about small

¹⁵ All measurements are taken at the fiscal year-end preceding the firm's buyout proposal. I collect these measures from CRSP, *Standard & Poor's Compustat Services*, *Moody's Corporate Reports*, the *Institutional Brokers Estimate System* (I/B/E/S Inc.) and *Nelson's Directory of Investment Research*.

Table V
Proxies for Information Asymmetry for Firms Whose
Management Buyout Proposals Were Completed Versus
Firms Whose Buyout Proposals Were Withdrawn Because
Shareholders or Boardmembers Opposed the Bid and
Which Received No Other Acquisition Bids

This table presents several proxies for information asymmetry measured at the fiscal year end preceding the firm's buyout proposal. Both samples span the years 1973-1989 and both samples exclude divisional buyouts and buyouts proposed by outside parties. The proportion of firms covered by analysts does not differ significantly across samples (74% of the firms with completed buyouts are covered compared to 79% of the firms with withdrawn proposals).

Asymmetric Information Proxy	N	Mean	Median	Buyout Proposal Sample
Number of analysts that submitted earnings estimates for the firm to I/B/E/S or Nelson's ^{ab}	23	3.09	1.00	Withdrawn
Number of wholly-owned subsidiaries	127	5.10	3.00	Completed
	32	13.94	4.00	Withdrawn
	178	10.24	4.00	Completed
Firm size (\$ millions)	32	65.74	22.24	Withdrawn
(Market value of equity) ^{bc}	178	248.40	60.63	Completed
Market value to book value of equity ^b	31	1.25	1.08	Withdrawn
	171	1.34	1.19	Completed

^a Denotes significance at the 1% level according to a parametric difference of means test.

^b Denotes significance at the 1% level according to a Mann-Whitney U-test for difference in sample distributions.

^c Denotes significance at the 10% level according to a parametric difference of means test.

firms because their average customer has less interest in these firms.¹⁶ Consistent with these arguments, firms whose proposals were withdrawn tend to be smaller (as measured by market value of equity) and to have smaller analyst followings. In this context, the evidence suggests greater information asymmetry for firms whose buyout proposals were withdrawn than for firms with completed buyouts. On the other hand, firm size may serve as a proxy for organizational complexity where larger firms are viewed as more complex.

The final proxy for asymmetric information which I examine is the ratio of market to book value of equity. Surveyed managers who have taken their firms private cite this ratio as evidence that their firms were undervalued by the market.¹⁷ Both samples' average market values exceed their average book values. Contrary to the hypothesis that firms with withdrawn buyouts

¹⁶ "Editor Norman Pearlman explains, news of mergers, company expansion plans or new financing all have to be in the neighborhood of \$10 million to rate coverage in the (*Wall Street Journal*). He adds, "We don't run anything on companies on the additional over-the-counter list because we feel that we don't have the space and there isn't enough interest in them among our readers..." From the *Wall Street Journal* 1991/1992 Educational Edition, page 3, column 1.

¹⁷ See footnote 2.

are subject to less information asymmetry, they have significantly lower market to book value ratios than firms in the completed buyout sample.

The proxies used in this section are crude estimates of a firm's propensity for asymmetric information. Nevertheless, the theoretical arguments and empirical evidence presented make it difficult to conclude that managers of firms with withdrawn proposals are less likely to have access to inside information than managers of firms with completed proposals.

V. Conclusions

This paper examines the stock price reaction to management buyout proposals which were withdrawn to determine whether managers typically have favorable inside information about their firms' value when they propose a buyout. Consistent with the findings of DeAngelo, DeAngelo and Rice (1984), positive and significant average cumulative abnormal returns existed for periods that include both the proposal and withdrawal announcements for my full sample of firms with withdrawn buyout proposals. Further tests indicate that these positive returns are attributable to firms that received other acquisition bids. Average cumulative abnormal returns over periods spanning the proposal and withdrawal announcements are indistinguishable from zero for firms which received no other acquisition bids.

Average abnormal returns cumulated across buyout proposal and withdrawal announcements vary with managers' stated reasons for withdrawal. Therefore, the tests were repeated for a subsample of firms that received no other acquisition bids *and* whose withdrawals were due to board or shareholder resistance. Average abnormal returns cumulated across each firm's proposal and withdrawal announcements are indistinguishable from zero for this sample. I cannot reject the null hypothesis that the average stock price increases associated with management buyout proposals reflect only the heightened expectations of the efficiency gains which follow transfers of control.

Another explanation for these results is that firms with withdrawn buyout proposals are less prone to information asymmetry than firms with completed buyouts. I constructed a comparison sample of completed buyouts and measured several proxies for asymmetric information for the firms with withdrawn buyouts and firms in the comparison sample. Tests indicate that managers of firms who withdrew their buyout proposals were at least as likely to have access to inside information as managers of firms with completed buyouts.

The cross-sectional nature of my results do not allow me rule out the possibility that some buyout proposals are motivated by managers' inside information. However, my results provide no support for the hypothesis that management buyout proposals, on average, reveal inside information about firm value. I interpret the evidence as inconsistent with the notion that managers commonly propose a buyout when they have access to favorable inside information about the firm's value.

REFERENCES

- Bradley, Michael, Anand Desai, and E. Han Kim, 1983, The rationale behind interfirm tender offers: Information or synergy? *Journal of Financial Economics* 11, 183–206.
- Brennan, Michael J., 1990, Latent assets, *Journal of Finance* 45, 709–730.
- Bruner, Robert F., 1986, Management buyouts and shareholder welfare: Self-dealing versus financial signaling, Unpublished manuscript, University of Virginia.
- Bull, Ivan, 1989, Management performance in leveraged buyouts: An empirical analysis, in Yakov Amihud, ed.: *Leveraged Management Buyouts* (Dow Jones-Irwin, Homewood, IL).
- Dann, Larry Y., Ronald Masulis, and David Mayers, 1991, Repurchase tender offers and earnings information, *Journal of Accounting and Economics* 4, 217–252.
- DeAngelo, Harry, Linda DeAngelo, and Edward M. Rice, 1984, Going private: Minority freeze-outs and stockholder wealth, *Journal of Law & Economics* 27, 367–402.
- Dimson, Elroy and Paul Marsh, 1986, Event study methodologies and the size effect: The case of UK press recommendations, *Journal of Financial Economics* 17, 113–142.
- Fabozzi, Frank J., Michael G. Ferri, T. Dezza Fabozzi, and Julia Tucker, 1988, A note on unsuccessful tender offers and stockholder returns, *Journal of Finance* 43, 1275–1283.
- Foster, George, 1986, Financial statement analysis (Prentice-Hall, Englewood Cliffs, NJ).
- Hirshleifer, David and Sheridan Titman, 1990, Share tendering strategies and the success of hostile takeover bids, *Journal of Political Economy* 98, 295–324.
- Hite, Gailen L., James E. Owers, and Ronald C. Rogers, 1987, The market for interfirm asset sales: Partial sell-offs and total liquidations, *Journal of Financial Economics* 18, 229–252.
- and Michael R. Vetsuypens, 1989, Management buyouts of divisions and shareholder wealth, *Journal of Finance* 44, 953–970.
- Kaplan, Steven N., 1988, Management buyouts: Efficiency gains or value transfers, Unpublished manuscript, University of Chicago.
- , 1989a, Management buyouts: Evidence on taxes as a source of value, *Journal of Finance* 44, 611–632.
- , 1989b, The effects of management buyouts on operating performance and value, *Journal of Financial Economics* 24, 217–254.
- Kieschnick, Robert L. Jr., 1989, Management buyouts of public corporations: An analysis of prior characteristics, in Yakov Amihud, ed.: *Leveraged Management Buyouts* (Dow Jones-Irwin, Homewood, IL).
- Lee, D. Scott, Wayne H. Mikkelson, and M. Megan Partch, 1992, Managers' trading around stock repurchases, *Journal of Finance*, Forthcoming.
- Lehn, Kenneth and Annette Poulsen, 1989, Free cash flow and stockholder gains in going private transactions, *Journal of Finance* 44, 771–787.
- Marais, Laurentius, Katherine Schipper, and Abbie Smith, 1989, Wealth effects of going private for senior securities, *Journal of Financial Economics* 23, 155–191.
- Maupin, Rebekah J., Clinton M. Bidwell, and Alan K. Ortengren, 1984, An empirical investigation of the characteristics of publicly-quoted corporations which change to closely-held ownership through management buyouts, *Journal of Business Finance & Accounting* 11, 435–450.
- Mohan, Nancy K., 1986, Going private: Financial issues, Unpublished Ph.D. dissertation, University of Cincinnati.
- Muscarella, Chris and Michael R. Vetsuypens, 1990, Efficiency and organizational structure: A study of reverse LBOs, *Journal of Finance* 45, 1389–1413.
- Ofek, Eli, 1991, Efficiency gains in unsuccessful management buyouts, Working paper, New York University.
- Reinganum, Marc, 1990, Market microstructure and asset pricing: An empirical investigation of NYSE and NASDAQ Securities, *Journal of Financial Economics* 28, 127–148.
- Seyhun, H. Nejat, 1986, Insiders' profits, costs of trading, and market efficiency, *Journal of Financial Economics* 16, 189–212.
- Smith, Abbie, 1990, Corporate ownership structure and performance: The case of management buyouts, *Journal of Financial Economics* 27, 143–164.