

Management Buyouts: Distinguishing Characteristics and Operating Changes Prior to Public Offering

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MANAGEMENT BUYOUTS: DISTINGUISHING CHARACTERISTICS AND OPERATING CHANGES PRIOR TO PUBLIC OFFERING

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This is a two-part study of management buyouts. In the first part we identify characteristics of firms bought out by their management by contrasting a sample of 65 firms which went private between 1980 and 1987 with an industry-matched comparison group of 130 firms. Firms which go private, when compared with others in their industries, tend to have higher levels of cash flow as a percentage of sales, have lower levels of receivables to sales, and have a significantly higher incidence of takeover speculation prior to the buyout. In the second part of the study we find that privately held firms, in the 3 years preceding the public offering, grow faster in revenues than their corresponding industry averages, while maintaining a better performance than industry norms in inventory management, in accounts receivable, and in operating income. In particular, private firms originating through management buyouts of divisions (of publicly held corporations) exhibit substantially higher growth rates than their industry averages, while still maintaining the same levels of operating income. These findings collectively suggest heightened performance after management buyout, which may be attributable to the changed governance structure of the firm.

Management buyouts are very salient in corporate takeover activity, as evidenced by the dramatic increase in the number of transactions and magnitude of assets changing hands in recent years: Indeed, in 1987, management buyouts contributed to 16.4 percent of all public acquisitions in terms of number of transactions and about 20 percent in terms of total assets involved (see Table 1). This is a striking change from a corresponding figure of about 7 percent in 1980.

Management buyouts¹ are transactions in which managers, with the aid of investors, replace public stockholding in the firm with relatively closely held equity and high levels of debt. The level of debt may be as high as 90 percent of

the total capitalization of the firm. Through smaller boards comprising strong representation from investors and managers, and with higher levels of managerial equity, the post-buyout governance structure is radically different from the pre-buyout public firm. This structure amounts to a new organizational form, in terms of the configuration of external stakeholders. Proponents of buyouts credit this governance structure with increased entrepreneurial activity by managers (see Appendix A for more detail on the structure of a buyout, or Michel and Shaked, 1988, for extensive institutional information).

Our quest in this paper is to understand the characteristics of firms undergoing the first stage of change (public to private ownership) and then to identify the operating changes made in firms which undergo the second stage of going public again. Firms which go through the two-stage change in ownership are transformed enterprises, having undertaken large amounts of debt, paid

¹ Transactions are variously labeled leveraged buyouts or management buyouts. In this paper we do not distinguish between these two terms because there are no pronounced legal differences between them. Our preference is to call the transactions management buyouts, because in all our transactions the incumbent management team was not replaced.

Table 1. Financial restructuring: Going private

Year	Total number of transactions	Average purchase price (\$ million)	Percentage of all transactions
1979	16	39.6	6.4
1980	13	74.4	7.5
1981	17	137.6	10.1
1982	31	91.5	17.2
1983	36	198.5	19.0
1984	57	415.6	27.0
1985	76	317.6	22.6
1986	76	281.0	19.7
1987	47	469.3	16.4

Source: *Mergerstat Review* for 1987: W. T. Grimm & Co., 1988.

it down, and then issued new equity in the firm. In studying operating performance in such firms we hope to respond to Low and MacMillan’s (1988) call for entrepreneurial research seeking to ‘explain and facilitate the role of new enterprise in furthering economic progress’ (Low and MacMillan, 1988: 141). Management buyouts as radical transformations in corporate governance—from the public corporation to a privately held corporation with high levels of management (and investor group) owned equity and a concomitant rise in debt levels—result in the creation of new business entity from existing productive assets (in contrast with start-ups). Divisional buyouts also constitute a transformation in governance, albeit from a different initial state as a unit of a public corporation. In both divisional and corporate buyouts the transformation of the organization’s governance has some elements resembling the start-up firm, wherein operating management typically enjoys high levels of equity, but others in marked contrast to the start-up in terms of the level of debt carried by the now-private firm. Supporters of buyout activity contend that the radical change in capital and ownership structures of the firm is accompanied by radical (and positive) changes in the firm’s post-buyout operations, thus interpreting the activity as an indicator of entrepreneurship in a public corporation.

Despite the imagery of management buyouts as creative ways to reintroduce an entrepreneurial drive in the publicly held firm, controversy surrounds these transactions. This controversy primarily arises from differences in opinion about the propriety of management’s dual role as buyer and seller in such transactions, and about the efficacy of post-buyout changes in such firms. Management teams, according to critics of buyout activity, take firms private not to obtain hitherto unrealized productivity gains but principally to induce a market correction in the value of the assets involved. Thus, in the eyes of critics, value is created not through productivity improvement but merely through exploitation of private information. Critics also argue that the levels of debt carried by buyouts are excessive and can make the firm’s very survival threatened by a downturn in its cash flow-generating capability in the years immediately following the transaction.

Proponents of management buyouts, on the other hand, argue that genuine productivity enhancements are achieved after taking the firm private. These productivity improvements in part arise due to dramatically different ownership incentives management teams get in the privately held firm. Typical management and board stock ownerships hover around 37 percent of total equity at the time of buyout, compared with about 15 percent of the publicly held predecessor company. Moreover, the increased stock ownership by key managers and investor group participants is often obtained on a cash investment at a fraction of the face value of the stock.²

This controversy has largely been unresolved due to two major factors. First, the newness of the phenomenon has limited the time horizon available to make assessments on medium- and longer-term operating and financial changes in firms going private. Second, after firms go private their disclosure requirements are minimal. This serves as a significant hurdle to academic research using secondary data sources. The purpose of our study is to identify characteristics of firms going private and operating changes in post-buyout firms which make a public offering. Management buyouts are unusual phenomena in that no new synergistic assets become available, and typically most prior management team

² This statement is based upon detailed review of buyout prospectuses by the author.

members stay on with the new entity. Examining corporate control changes in such firms is therefore instructive.

THE STUDY

The study reported here has two parts. In the first part we investigate distinguishing factors of firms engaging in management buyouts. This extends the initial work of Maupin (1987), in the strategy literature, which investigated financially oriented predictors of firms engaging in management buyout, and stock market reactions to buyout announcements. We extend Maupin's (1987) work by incorporating the prior context of the firm (prior takeover attempts) and operating characteristics of the firm going private. Operating characteristics as additional explanatory factors distinguishing firms going private include sales growth rates, levels of receivables, ability to pay current levels of interest coverage and operating income. Our sample consists of 65 management buyouts in the period 1980 through 1987, contrasted with 130 firms from their respective industries (details of sampling are provided in later sections). By identifying characteristics of firms undergoing management buyout, we hope to contribute to the strategy literature on corporate acquisitions which thus far has traditionally concerned itself with stock market reactions to different levels of acquirer and target firm relatedness (see Chatterjee, 1986; Lubatkin, 1987 and Singh and Montgomery, 1987).

In the second part of the study we address operational changes in buyouts which go public again through an initial public offering (IPO), a few years after going private (see Figure 1). These firms undergo a two-stage change in governance. In the first stage management, along with a group of investors, buys out the firm from its public stockholders. The second stage is a public offering of stock (an average of 31 percent of total stock outstanding, in our sample) in the now-private firm a few years after the initial buyout (see Appendix B for institutional details of public offering). Reverse management buyouts, as such transactions are sometimes called, have reliable information on operations and performance of the firm after buyout in the years prior to the public offering. The process of public offering requires detailed disclosures of oper-

ations and prior performance, enabling research on post-buyout operating changes in such firms.

There has been some early research from accounting and financial perspectives on management buyouts. DeAngelo, DeAngelo, and Rice (1984) found that the stock market reacts very favorably (an abnormal return of 30.4 percent over 2 months) to management buyout announcements. More recently there is research on post-buyout sources of gain by Kaplan (1988), who found evidence of value creation in firms after buyout. The focus of Kaplan's work is on the distribution of buyout-related gains between stockholders of the firm before buyout and those who own equity in the firm after the buyout. After systematic investigation Kaplan reports that the gains from the buyout to equity-holders (investors and managers) in the firm after buyout are approximately equal to those of stockholders prior to the buyout. We differ from other work in our inclusion of divisional buyouts in the sample (Figure 1), and in our emphasis on operational changes in the 3 years prior to public offering, while Kaplan (1988) emphasizes changes in firms for 2 years preceding and following buyout. Also, by examining inventory management, accounts receivable, and operating income,³ we explore the effects of operating shifts after management buyout in formerly independent firms and in erstwhile divisions which were bought by their management teams.

THEORETICAL CONSIDERATIONS

Several theories have been offered to explain the sources of value which make management buyouts feasible. We briefly review the principal arguments in this section. The theoretical explanations for buyouts can briefly be described as the *value creation argument*, the *managerial opportunism argument*, and the *tax savings argument*. We will address each of these theoretical arguments below.

The *value creation argument* asserts that management buyouts are made feasible through major changes in asset management after the buyout.

³ Based on discussions with several investment advisors and with multiple executives in one buyout, we determined that operating income before interest and taxes serves as the most useful annual performance indicator because of high interest payments made after buyout.

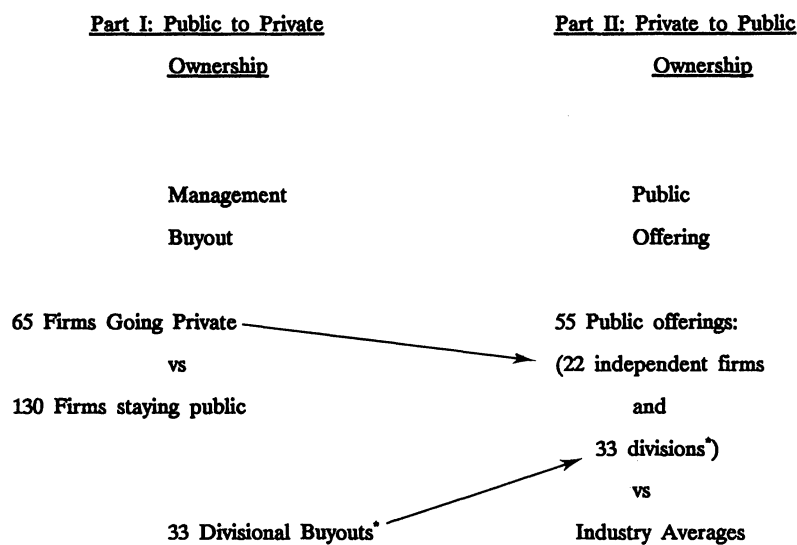


Figure 1. Study design. *Not included in the Part I investigation because these firms were part of larger corporations, and did not have independent public information on their operations.

More specifically, value is created through sale of peripheral businesses to synergistic buyers or through improvements in existing operations by more effective cost-cutting and greater emphasis on cash management. Proponents of the value creation theory (Jensen, 1986) argue that, in many publicly owned companies with high levels of cash flow, management tends not to invest judiciously in new projects. Thus, when a firm is bought out by management, servicing the high resultant levels of debt fosters greater discipline in the investment strategy of the firm. This discipline results in greater efficiency in the firm and in an appropriate focus on cash generation.

The value creation explanation is not without its critics. The principal critique is that the typical nominal premium of 40 percent paid in such transactions is too large to be recovered by the incumbent management team with essentially the same assets. In the absence of synergies available through the combination of the target's assets with those of an acquirer (as in the case of a conventional acquisition), critics of buyouts question the managers' abilities to create such dramatic changes in operating efficiency. For value of such a significant relative magnitude to be created the same management team presumably would have to effect a dramatic change in philosophy and in strategy implemen-

tation and produce very tangible results quickly—an unlikely scenario in the eyes of skeptics.

The *managerial opportunism argument* asserts that managers buy control of the firm if they believe, based on their superior information, that the firm is significantly undervalued by external investors. The managerial opportunism theory rests upon information asymmetry between managers and public shareholders. Gains to management teams, under this characterization of their motives, are positive if the premium paid for the buyout is lower than the differential between purchase price and the firm's intrinsic value. The enhanced (intrinsic) value is 'cashed out' through a public offering a few years after going private, offering essentially the same company to a new set of investors, according to this argument. The operative difference between the opportunism argument and the value creation argument is in the source of value creation: whether the principal gains to managers and investors in the post-buyout firm are obtained through substantial managerial intervention, or through timely buyout and public offering strategies.

The primary criticism of the managerial opportunism argument questions its plausibility. The argument presumes substantial pre-buyout undervaluation of the firm. Systematic and persistent undervaluation of a public firm purely due to

lack of disclosure of critical information is questionable. Second, many factors limit the likelihood of significant gain to management and other investors arising exclusively from underpricing the buyout offer. For instance, competition from other bidders can force management to pay out most or all the gains at the time of going private. The pure managerial opportunism argument implies a higher level of manipulation of superior information by management teams than is feasible in a competitive acquisition environment.

The *tax savings argument* is advanced by Lowenstein (1985). This argument suggests that although rhetoric and debate surrounding management buyouts focus on productivity improvement versus managerial opportunism, post-buyout tax savings are the real driving force underlying buyouts. In the process of buying out stockholders the firm incurs a high level of debt, typically ten times the new level of equity. Buyouts can therefore be viewed as a substitution of equity with debt. Interest payments needed to service the high debt level are substantial. These interest payments provide a tax shield translating into a considerable increase in cash flows. Indeed, the tax savings argument has some credence if one notes the magnitude of the tax shield resulting from the relatively high interest payments which, when discounted back, can amount to a sizeable proportion of the typical premium paid up front.

The theoretical arguments on buyouts presented above are stylized perspectives⁴ to explain the rapid growth of the phenomenon. The perspectives have implications for firm performance after buyout. The value creation argument implies substantive operational and strategic changes as drivers of the higher post-buyout performance necessary to recover the buyout-related premium. The pure managerial opportunism and the tax savings arguments both assume no significant post-buyout changes in operations of the firm but draw upon pre-buyout undervalu-

ation or tax savings as the primary drivers of post-buyout gain.

Hypotheses

Part I: Distinguishing characteristics of firms going private

We present hypotheses on the characteristics of firms going private and on operating changes in such firms based on the above sets of arguments. Our hypotheses will address cash flow factors and operating factors as potential distinguishing characteristics, and contextual factors as control variables in our analysis of firms which undergo a management buyout.

Identifying features of firms which undergo management buyout from other firms in their respective industries are cash flow factors, operating factors and contextual factors. Our model to identify distinguishing characteristics of firms going private is:

$$P(\text{buyout}) = F(\text{cash flow factors, operating factors, contextual factors, error})$$

Cash flow factors. Examining the theoretical arguments provided above, we note that pre-buyout levels of cash flow play different roles under each argument in predicting the types of firms likely to engage in management buyouts. The tax savings argument does not suggest that firms going private will have higher levels of cash flow than their industry rivals, because the benefits are based on high deductions achieved through interest payments and through changing the basis of taxation. Turning to the value creation argument, we note that higher (than industry rivals) levels of cash flow in the pre-buyout firm suggest good operating managers but possibly poor reinvestment of cash. These high levels of pre-buyout cash can be effectively utilized in the post-buyout firm to help pay down debt and also to insulate the firm from the likelihood of default on its interest payments. Thus, the value creation argument suggests that firms which go private tend to have higher levels of cash flow than their industry rivals. The managerial opportunism argument does not have predictions for the levels of cash flow of the firm engaging in the buyout. Thus, based on the value creation argument we hypothesize:

⁴ In particular transactions these perspectives may play partial explanatory roles. For instance, in a particular transaction, management may have exploited private information on the true value of the firm, and also made major operational changes in the post-buyout firm, both of which contribute to greater returns. However, the managerial opportunism argument has an extreme implication that management benefits principally from private information, not through significant interventions in the firm after going private.

H1: Firms undergoing buyout will have higher levels of cash flow (pre-buyout) than others in their respective industries that remain publicly held.

Cash flow factors are operationalized through the following indicators: cash flow to net sales, cash flow to total assets, current ratio, times interest earned,⁵ and return on equity (pre-interest and tax). The expected signs of these variables (based on the above hypothesis) are shown in Table 2. These variables were selected as indicators of cash flow factors based upon interviews with experienced executives and with intermediaries in the mergers and acquisitions practice of the investment banking industry.

The ratio of *annual cash flow*⁶ to *net sales* of the firm represents the extent to which the firm can service its debt and stay solvent (see Appendix A for institutional details underlying buyout activity). As discussed in the section addressing institutional factors underlying buyouts, both senior and subordinate lenders will look to the firm's liquidity to determine its ability to carry debt. Similar arguments apply to the cash flow to total assets indicator.

The *current ratio* of the firm, total current assets divided by current liabilities, is another indicator of the firm's liquidity. This ratio can

be expected to vary considerably based on industry characteristics and business conditions. The rationale for including the current ratio is once again to determine if greater liquidity of the firm is an indicator of the probability of going private.

Operational factors. The value creation perspective suggests that firms going through a management buyout will reflect better operating management procedures than their industry rivals. Better operating management than industry norms is a good indicator of a management team that is inherently sound, which is a necessary condition for value creation, post-buyout.⁷ On the other hand, under the managerial opportunism argument, operating characteristics of firms undergoing management buyouts will not be different from industry norms, as the entire premise is that the transaction is driven by timing of the deal and speculation on the value of the firm: managers do not make any substantive interventions in operations after buyout. The tax savings argument also will not predict differences in operating characteristics between firms which go private and their industry rivals.

Two operational variables—the levels of receivables in the firm and its operating performance—are used as indicators of operating characteristics. The *number of days' receivables* of the firm as an operational indicator can discriminate between firms which undergo a buyout and its peers in the industry. Firms with a high level of receivables have a lower quality of operational controls and implementation. Another operating indicator influencing the likelihood of a firm to engage in a buyout is the ratio of *operating income (EBIT) to sales*. The higher the level of operating income before interest and taxes in these firms, the greater the ability of the firm to engage in a buyout.

H2: Firms going private will have lower levels of receivables (adjusted for sales) and higher levels of operating income (to total equity) than their industry rivals.

The *average rate of sales growth* over the 3 years preceding the buyout is an operational

Table 2. Hypothesized relationships (Dependent variable: Probability of buyout)

Explanatory variables	Predicted sign
<i>Cash flow related variables</i>	
Cash flow to net sales	+
Cash flow to total assets	+
Current ratio	+
Times interest earned	+
<i>Operating variables</i>	
Income before interest and tax/equity	+
Net sales to receivables	+
Growth rate in sales	+
<i>Contextual variable</i>	
Prior takeover attempt	+

⁵ This is measured as the ratio between earnings before interest and tax and interest expense paid in a given year.

⁶ The cash flow is computed in the standard way by adding back depreciation and other non-cash expenses to net income.

⁷ The value creation perspective carries an implicit assumption that the management team is essentially sound, operationally.

indicator used as a control variable in the study. This control variable is needed because firms with high levels of cash flow in current periods may be foregoing reinvestments to increase sales revenues; thus, sales growth is added primarily as a control variable in the model.

Contextual factors. The likelihood of a firm engaging in a buyout will be influenced by whether it has been the subject of *prior takeover attempts* or not. If the firm has been subject to takeover attempts then it is unlikely that managers continue to possess critical private information that may impact the true value of the firm, and also the price of the firm's stock will have risen as a consequence of the takeover attempt. Thus, the managerial opportunism argument will suggest that firms engaging in buyout will not have been subjects of takeover attempts in the past.

For firms which have been subject to prior takeover attempts, the board of directors must conclude that the incumbent management team is likely to create more value than the prospective acquirer. The value creation argument, since it presumes a good operating management team is in control of the firm, will be consistent with the expectation that firms subject to takeover attempts in the past are more likely to engage in management buyouts than their industry rivals. A prior history of takeover attempts on the firm is an important contextual variable affecting the likelihood of a buyout attempt. Prior takeover activity has indicators such as the incidence of actual takeover attempts, or significant changes (in excess of 5 percent) in ownership structure of the firm. Our indicator for *prior takeover attempts* is whether there has been either a tender offer announcement or a 13D filing (made when a single investor increases stockholding in the firm to a level beyond 5 percent) up to a year before the buyout's first announcement. This indicator has been used in earlier work to operationalize takeover attempts on firms (see for example Singh and Harianto, 1989). The 1-year period was chosen arbitrarily, although the results do not appear to be sensitive to extension of the time horizon for coding prior attempts to more than 1 year preceding the buyout.

H3: Firms that have been subject to takeover attempts will be more likely to engage in a management buyout than those unthreatened by takeover attempts.

We also include as a control variable in our model the ratio of the firm's total long-term debt to equity, which serves as an indicator of the firm's potential suitability as a leveraged buyout candidate. Highly leveraged firms may be more susceptible to downturns than firms with lower levels of leverage. The debt to equity ratio and the times interest earned ratio provide information both on the current level of debt in the capital structure and the firm's capability to service debt.

Part II: Changes in governance after buyout

Our foregoing discussion primarily was concerned with distinguishing characteristics of firms undergoing management buyouts. This section focuses on changes in governance structure in firms after they have gone private.

H4a: The proportion of directors representing stakeholders other than stockholders will be significantly lower post-buyout when compared to pre-buyout proportions.

H4b: The proportion of equity owned by managers and inside directors is higher after buyout than in the publicly held firm.

This hypothesis on board configuration is consistent with the value creation argument, which implies that managers of public corporations engage in activities which do not necessarily enhance shareholder wealth, partly due to excessive attention to external constituents other than stockholders. Additionally, proponents of management buyouts have argued that top management of public corporations have been encumbered by boards with significant numbers of directors representing neither large investors nor managers. Decision-making in such boards, according to proponents of buyouts, tends to be slow and at times does not devote paramount attention to stockholder interests. The opportunity to elect a new board of directors in the now private firm will result in fewer directors who are neither top managers nor representatives of institutional stockholders (i.e. there will be fewer prominent citizens, lawyers, etc on such boards).

After a buyout, ownership structure changes partly for institutional reasons—managers and directors tend to own much more equity in the

now private organization than in the publicly held corporation prior to the transaction. If Hypotheses 4a and 4b are supported, then changes in ownership structure coupled with a more focused board of directors is a combination suggesting radical shifts in emphasis of the firm and its relationship to stakeholders. Support for the hypothesis explicitly on ownership structure would be most consistent with the value creation argument (of the three arguments presented earlier)⁸ because incentives of managers and directors are more directly aligned with those of investors (other shareholders) as managers' stakes in the firm increase.

H5: Post-buyout firms will have better operating performance than their industry averages in the years preceding public offering.

This hypothesis represents a direct test of whether management buyouts are explained by the value creation argument versus the managerial opportunism argument or the tax savings argument. In particular, superior performance of the post-buyout firm versus the industry will support the value creation argument, while inferior or non-significant (compared to industry averages) performance will favor the managerial opportunism or tax savings arguments. Operating performance is proxied by operating income to sales (pre-tax and interest), in addition to growth rate in sales. We also examine operating ratios such as number of days receivables and inventory turnover (compared with corresponding ratios for the respective industries) to assess the nature of firm-level performance and operations versus industry standards for the corresponding time period. According to the value creation argument, the now private firms will perform better than industry average on operating income to sales, sales growth, and in inventory turnover and accounts receivables. If all the ratios above are not significantly better than industry norms (which is likely because significantly high performance on all dimensions will suggest a very strong dominance by post-buyout firms) then we will examine whether the results on the dimensions

that are significantly different from industry averages suggest superior or mixed overall performance, and consequently, support the value creation arguments or others.

RESEARCH DESIGN: PART I: CHARACTERISTICS OF FIRMS GOING FROM PUBLIC TO PRIVATE OWNERSHIP

The objective of this part of the study is to identify the characteristics of firms which undergo a leveraged buyout. We first assembled an extensive list of management buyouts and added a set of firms matched by industry (as a control group) which did not go private. Measures used to discriminate between the two groups were based on theoretical factors presented earlier, interviews with executives and with investment bankers involved in corporate acquisitions. Factors which successfully discriminated between buyout and non-buyout firms were identified using a logistic regression model. Each of these aspects of research design is discussed in more detail in the following sections entitled data sources, measures, and data analysis.

Data sources—Part 1: Public to private ownership

The sample

The sample originally consisted of 99 publicly held corporations which underwent management buyout in the period 1980–87. This list of 99 firms was gathered from transaction lists at two active investment banking firms, and from 13E3 filings at the Securities and Exchange Commission. In each case we checked to determine whether the firms had indeed completed the buyout, as the filing may not necessarily result in a buyout. Of this set of 99 firms, 72 were on the COMPUSTAT tapes. Of the 72 observations we dropped seven observations (to 65 usable observations) because of data gaps in selected variables on the COMPUSTAT tapes.

We then developed a control group of firms, with two matches for every buyout firm in our sample. This control group was formed by randomly selecting two firms from the COMPUSTAT listing that were participants in the same

⁸ If the results support Hypothesis 4b they will also be consistent with the managerial opportunism argument (only for the ownership variable), but not with the tax savings argument, which is silent on the issue of how the equity portion of the firm is distributed.

four-digit SIC code. Besides common industry participation, these firms in the control group had to be publicly held past the year of buyout of the corresponding buyout firm. As Table 3 shows, the mean sales, assets, and net income of the firms in the buyout sample and those in the control group are not significantly different from each other.

For this part of the study, data were gathered mainly from the COMPUSTAT tapes, both for the 65 firms in the study sample and the 130 industry-matched firms in the comparison group which continued to be publicly owned. Information from prospectuses on the leveraged buyouts was used (a) to verify the financial characteristics of the buyout firms and (b) to note the initiating force of the buyout attempt from the prospects. The contextual information (prior takeover attempt) was obtained from the *Wall Street Journal Index*, and from the SEC filings of firms in the sample for the year before the buyout.

Data analysis—Part I: Public to private ownership

Comparison of the buyout firms and the control group along the independent variables discussed earlier is done using logistic regression. An analysis of discriminators of observations falling into two observed groups can be completed either through discriminant analysis or logistic regression. We use logistic regression as our analytical technique because it is well-suited for

assessing the significance of independent variables explicitly distinguishing between groups (Amemiya, 1981). The logistic regression model has the following form:

$$P(\text{buyout}) = F(\text{cash flow variables, operating variables, contextual variable, error}) \quad (1)$$

The probability distribution followed by the buyout function is the logistic distribution, which becomes a linear function by first transforming probabilities into odds, and then taking the logarithm of both sides (Amemiya, 1981). The output of the logistic regression is easy to interpret, since a statistic equivalent to a t-ratio is estimated for each independent variable in the model.

RESEARCH DESIGN: PART II: PRIVATE TO PUBLIC OWNERSHIP: OPERATING CHANGES IN FIRMS PRIOR TO GOING PUBLIC

As shown in Figure 1, this part of the study examines the operating and performance characteristics of 55 firms engaging in a public offering. Of these 55 firms, 22 had gone public as of December 1988. The remaining 33 firms in this part of the study come from divisional buyouts, and thus are not represented in Part I (being part of larger, publicly held corporations, these divisions did not have any public information on their operations when owned by the parent corporation). The sample of buyouts going public has been gathered from the *Investment Dealers Digest (IDD)* data base, which lists all public offerings made in the U.S. in any of the major stock exchanges. The 55 transactions in this part of the study represent closely a population of management buyouts going public in that time frame, because the quality of the IDD data corresponded well to and was more complete than the list obtained from two significant investment banking firms in New York.⁹

⁹ We included divisional buyouts in this part of the study for three reasons: (1) adding divisional buyouts to the sample would allow us to determine whether there were substantial differences in operating changes before going public between divisional buyouts and independent firm buyouts, continued overleaf

Table 3. Comparison of sample firms and control group: tests of bias

	Sample firms (buyout) mean (\$ million)	Control group (industry match) mean (\$ million)	T-Value (sample vs control)
Total assets	311.9	409.6	0.85
Sales	555.6	714.9	0.84
Market value of equity	219.6	334.9	1.23
Number of firms	65	130	

Data

The following data sources were triangulated to create the composite data base on operating and performance changes preceding public offering:

1. Financial information and summaries of management statements were gathered from DATEXT, a computerized data base with historical financial information and management statements obtained from annual reports of about 10,000 companies. Many of the companies in the data base are privately held. Indeed, of the 55 transactions, 48 that were privately held at the time were reporting information to DATEXT.
2. The prospectus issued to public stockholders in the first stage of the process, namely going private through a buyout. Merger prospectuses are very rich in information. Typical documents are about 100 pages long and contain all relevant financial information, a company history, and a detailed management plan for what would happen after they go private.
3. Prospectus of the initial public offering in stage two of this process. Prospectuses of public offerings contain historical financials going back further than the year the firm went private.
4. Proxy statements and annual reports of the publicly traded company after the public offering is completed. Proxy statements and annual reports information as required by the SEC on financial and operating statistics, on board composition, CEO and top management team characteristics and executive compensation.

Individual data on going-public transactions consists of the following classes of information:

- (a) historical financial and operating statements;
- (b) management statements and summary business plans provided when the firm goes private;
- (c) management statements and summary business plan when the firm goes public. To facilitate validation the data base was set up to maintain

(2) availability of such information with the *Investment Dealers Digest (IDD)* data base, which included both divisional buyouts going public and buyouts that previously were independent public corporations, and (3) in areas where there were no substantial differences between divisional buyouts and independent company buyouts, our sample size was considerably increased.

traceability of data points to the sources of information. In the process of aggregating the information, care was taken to cross-verify information from one data source and another.

Measures: post-buyout performance and operational indicators

The operational and performance indicators used in this study to track changes in firms preceding public offering are: *growth in sales revenues*, and *annual changes in inventory turnover, accounts receivable, current ratios, and operating income*.

Benchmarking of performance and operational measures (such as number of days accounts receivable) is a critical issue in assessing the firms that go private because they do not have stock prices available as performance indicators. Neither are annual reports required of these firms by law. However, some reporting of information is done to creditors and this is collected by DATEXT. Additionally, the initial public offering document (IPO) is very extensive in the quality and detail of information available on the firm's operations for a 5-year period prior to the public offering.

Having corrected for the lack of annual report information, the next step is to create a viable set of benchmarks with which to compare operating performance and other financial characteristics of the firms in the sample. Benchmarks for performance and for operational indicators are created by comparing the sample firm's performance with an industry average for the same four-digit SIC code for the same year. The industry averages are published in the analyst's handbook entitled *RMA Annual Statistical Studies*, published by Robert Morris Associates.¹⁰ In using the industry averages for the four-digit SIC code, for the same year, we may not be benchmarking the results appropriately for highly diversified firms. However, in this part of the study, with the large number of divisions in the

¹⁰ We compared these industry averages with computed averages from the COMPUSTAT tapes for two industries, and found an acceptable correspondence between the figures. Thus, we elected to use the industry averages from the above source in our analysis. As an extension, we can recompute all the performance figures using COMPUSTAT and compare firm-level performance with numbers obtained from that source. (However, COMPUSTAT has a large-firm bias when compared to our current source, which includes firms listed on the smaller exchanges as well.)

sample, this bias was limited. A second concern is that the industry average may contain the participant firm's observation as well. This concern was addressed by adjusting the industry average to reflect the mean without the firm's observation being included for a subset of sample. Since the number of firms based on which the industry average was calculated was large in all cases, the numbers were substantially unaffected by the adjustment. Accordingly, the unadjusted industry average is reported in this part of the study.

RESULTS

Factors distinguishing firms changing from public to private ownership

The results of the statistical analysis are reported in Table 4. The two models shown in Table 4 differ in the introduction of cash flow to sales in one model and cash flow to assets in another model. Each variable is introduced separately in the analysis because they are highly correlated.

According to the results for Model 1, the significant variables predicting the likelihood of management buyout are prior takeover attempt, cash flow to sales and net sales to receivables. The model is significant at $p < 0.01$ and the log-likelihood (analogous to R -squared of a multiple regression) of the logit model is high. The current ratio of the firms, pre-buyout leverage and times interest earned are not significant as predictors of buyouts, when compared with industry counterparts. Model 2 results, shown in the second column on Table 4, track those of Model 1, with cash flow to assets also significant, although at a lower level than cash flow to sales. These results support Hypothesis 1 predicting higher levels of cash flow in firms undergoing buyouts, and only partially support Hypothesis 2, which predicted better operating results compared to industry rivals in firms about to engage in a buyout.

Based on these results it appears that prior takeover attempts are important factors discriminating between buyouts and non-buyouts, suggesting that the initiating force for buyout may be pressure from external agents. This result, supporting Hypothesis 3 (firms undergoing buyout will have been subject to takeover attempts in the past), is not consistent with the managerial

Table 4. Characteristics of firms undergoing buyout: Comparison with control group of industry rivals (dependent variable: probability of undergoing buyout)

	Model 1 ^a	Model 2
Prior takeover attempt	1.26*** (4.66)	1.26*** (4.68)
Cash flow to net sales	3.59** (1.96)	
Cash flow to total assets		2.73** (1.95)
Current ratio	0.13 (0.88)	0.14 (1.45)
Times interest earned	-0.01 (0.58)	-0.01 (0.45)
Earnings before interest and tax/equity	0.48 (0.77)	0.33 (0.65)
Net sales to receivables	0.009* (1.81)	0.008* (1.83)
Growth in sales	0.03 (0.21)	0.04 (0.31)
Debt/equity ratio	0.01 (0.20)	0.003 (0.07)
Constant	-0.57 (1.33)	-0.37 (0.78)
Log-likelihood	-108.15	-110.71
Chi-squared	211.5	216.5
p	0.05	0.05

^a The difference between Models 1 and 2 is in the inclusion of cash flow normalized to two alternative indicators of firm size: sales and assets. These variables are significantly intercorrelated as can be expected, and hence are not included in the same model (the correlation matrix is not reported here due to lack of space).

*** Significant at $p < 0.01$.

** Significant at $p < 0.05$.

* Significant at $p < 0.10$.

opportunism argument. Also, liquidity of the firm is an important characteristic of firms which undergo buyouts, as also is the level of receivables in relation to the control group (this result parallels that of Maupin, 1987). Liquidity levels suggest the presence of slack resources in the firms, as there are no significant differences in sales growth or profits between buyout firms and their publicly owned industry rivals.

Public to private ownership: Changes in board and ownership structure

Table 5 shows changes in board composition and ownership before and after buyout. There are

substantial changes in all variables except the percentage of the board comprising active managers in the firm. The most substantial change in board composition is in representation from institutional investors, increasing greatly after buyout. It is important to note also that the representation of CEOs of other corporations declines substantially after buyout, as does that of prominent citizens (such as consumer activists, former ambassadors). Combining the representation of investors and managers, we note a very substantial increase, from 40.3 percent to 75.2 percent. The ratios presented in Table 5 reflect the drastic shift in governance of the firm. Also, we note the diminished roles of high-profile public citizens on boards of the now-private corporations. This changed governance structure suggests a more focused board than the predecessor company's board, with a clear correspondence to a selected constituency: managers, equity investors, and senior lenders. Conspicuous in absence are stakeholder representatives through prominent public figures (this statement is based on qualitative data on the boards gleaned from prospectuses). These results confirm Hypotheses 4a and 4b, which indicated that firms after buyout will have focused boards and higher stock ownership levels for managers and directors.

Operating and performance changes preceding public offering

Tables 6 through 8 summarize the key findings on operating and performance changes preceding

public offering. For this part of the study, corresponding industry averages for each firm-level performance or operational indicator for that period are accessed and stored. Since the firms had public offerings at different times we have an issue of maintaining comparability of observations over time. To achieve this goal we treat the year of initial public offering (IPO) as time t , our reference point for analysis. Then we compute the sample and industry averages of changes in each variable for the years $(t-3$ to $t-2)$, $(t-2$ to $t-1)$, and $(t-1$ to $t)$. In this way we are able to compare firm-level performance with the contemporaneous industry average, and also to compare sample averages with industry averages.

Statistical testing for this part of the analysis is to reject or accept the null hypothesis that the industry-adjusted value of a particular operational indicator, such as number of days inventory, is significantly different from zero. The statistical tests for this segment of the paper are univariate t -tests.

There are substantial differences between the levels of sales growth between sample firms and the averages of their respective industries, as shown in Table 6a. The differences in sales growth are surprising in view of the traditional concern that, after management buyout, there will be fewer resources available to invest in marketing and expenditures necessary to boost the performance of the firms. The point of comparison for the sales growth figures in the table is the industry average. The percentage changes are remarkable when compared with industry averages, particularly for the years $t-1$ and the IPO year.

Referring to Table 6b, however, we note that there are significant differences also between divisional buyouts and firms which went private as a complete entity. Divisional buyouts have substantially and statistically significantly higher levels of sales growth in the years preceding public offering than do buyouts which earlier were independent companies.¹¹ It is also noteworthy that both sets of firms have higher growth rates than industry average.

Table 5. Board composition before and after buyout (percentages)

	Before	After
Management	37.8	39.3
Institutional representatives	2.5 ***	35.7***
Specialists (lawyers, bankers)	19.4 ***	6.0***
Other CEOs	11.6 ***	2.5***
Prominent citizens (ambassadors, etc.)	28.7 **	13.0**
Stockholding management and board	15.35***	37.2***

*** Significant difference before vs after buyout at $p<0.01$.
** Significant difference before vs after buyout at $p<0.05$.

¹¹ We distinguish between divisional buyouts and independent company buyouts mainly in this portion of the paper, because sales growth is an indicator for which we observe persistent differences between the two groups.

Table 6a. Sales growth relative to industry for 3 years up to public offering (IPO)

	Year ($t-3$ to $t-2$)	Year ($t-2$ to $t-1$)	Year ($t-1$ to IPO, year t)
Percentage annual sales growth, sample (divisional and independent firm) buyouts, $n = 55$	15.5*	17.2**	17.5**
Percentage annual sales growth, industry averages (matched industry and year)	8.8	10.5	10.5

Table 6b. Sales growth: Divisional buyouts versus independent firm buyouts for 3 years up to public offering (IPO)

	Year ($t-3$ to $t-2$)	Year ($t-2$ to $t-1$)	Year ($t-1$ to IPO, year t)
Percentage annual sales growth, divisional buyouts, $n = 33$	18.6*** ^a	20.1*** ^b	21.5*** ^a
Percentage annual sales growth, independent companies, $n = 22$	10.9	14.4**	11.5

^a Significantly different from independent firms' average at $p < 0.05$.

^b Significantly different from independent firms' average at $p < 0.10$.

*** Significantly different from industry average at $p < 0.01$.

** Significantly different from industry average at $p < 0.05$.

* Significantly different from industry average at $p < 0.10$.

Table 7a shows inventory management of the firms in our sample versus the industry averages for corresponding periods. The inventory management figure reported in the table is year-to-year reduction in the number of days inventory of the sample group, and the corresponding number for the industry average. The substantial differences in rates of change in number of days inventory carried by the sample group versus the industry average is a striking indicator of operating differences between the private firms and the industry average.

Table 7b shows changes in accounts receivable and current ratio of the sample firms *vis-à-vis* corresponding changes in industry averages. We note that, for accounts receivable, there are substantial differences between the sample means of year-to-year growth rates in accounts receivables for the years $t-3$ to $t-1$. For the year of the IPO the differences between sample and industry average plateau to a relatively small amount, perhaps suggesting that most opportunities for reducing accounts receivables had been

pursued before the IPO year. Our results for inventory management are similar to those of Kaplan (1988). However, our results for sales growth are substantially different from his (he does not find significantly higher growth rates of buyout versus industry). These differences are clearly due in part to our preponderance (60 percent of the sample) of divisional buyouts, which do not figure in his sample at all. In part, also, our results may be different due to problem definition differences; we are examining changes in management buyout prior to going public, which is different in thrust and time frame from Kaplan's investigation of changes for 2 years immediately preceding and following a buyout. These differences could also be due to selection bias in our sample, although institutionally almost all buyouts are planned to go public after about 5 years, which should diminish this concern. Also, we deliberately include divisional buyouts in our sample to investigate differences between divisional and independent corporations—a distinction which is very significant with respect to

Table 7a. Inventory management: Annual changes in number of days' inventory, sample firms vs industry average

	Year (<i>t</i> −3 to <i>t</i> −2)	Year (<i>t</i> −2 to <i>t</i> −1)	Year (<i>t</i> −1 to IPO, year <i>t</i>)
Percentage annual change, sample averages	−7.2*	−10.7**	−11.5**
Percentage annual change, industry averages	3.8	1.03	2.04

Table 7b. Accounts receivable, and current ratios: Percentage annual changes: Sample versus industry

	Year (<i>t</i> −3 to <i>t</i> −2)	Year (<i>t</i> −2 to <i>t</i> −1)	Year (<i>t</i> −1 to IPO, year <i>t</i>)
<i>Accounts receivable, percentage annual change</i>			
Sample firms, <i>n</i> = 55	−4.41**	−9.24**	−1.50
Industry average	0.51	3.16	3.41
<i>Current ratios, percentage annual change</i>			
Sample firms, <i>n</i> = 55	−1.10	7.25*	0.29
Industry average	−3.12	1.50	−3.64

*** Significantly different from industry average at *p*<0.01.
** Significantly different from industry average at *p*<0.05.
* Significantly different from industry average at *p*<0.10.

growth of the buyout, as shown in Table 6b. Taken together, the results on operating changes in the firms after buyout and before public offering confirm Hypothesis 5, although the support is partial rather than complete. The hypothesis would be completely supported if there were superior post-buyout operating results in all periods and in all dimensions. Our results here provide support for the hypothesis that operating changes in firms after buyout are associated with superior industry-adjusted performance.

Annual changes in current ratios, on the other hand, do not exhibit such substantial differences between sample group and control group. In the case of the current ratio there is not a substantial difference in annual changes when compared to industry averages for corresponding years. This suggests that, for the firms in the study sample, the current ratio was not substantially affected in spite of the major difference in the overall leverage of the company.

Table 8 compares the growth rate of operating income for the sample group versus the industry

average. Once again we note that there are substantial differences in the average growth rates in operating income between the sample firms and the industry average. This is further indicative of the strong performance of the sample group of firms after going private, *vis-à-vis* a time-matched industry average.

Limitations of the study

Some limitations in the study should be accounted for in interpreting the results. First, we have been careful to point out that our operating performance data after buyout pertain to firms and divisions which went public. There is a possibility of bias in that the sample may not be representative of all firms that have gone private. This bias is difficult to rule out at this time.¹²

¹² However, it is not obvious that the results are necessarily biased upward, in favor of good performance. After good performance, post-buyout, firms can go public to provide their investors to 'cash-out.' After poor performance (not bankruptcy, but constrained resource availability), firms may go public to raise capital for new projects that they cannot fund under the present arrangement.

Table 8. Financial performance: Sample versus industry, changes in operating income to sales

	Year (<i>t</i> -3 to <i>t</i> -2)	Year (<i>t</i> -2 to <i>t</i> -1)	Year (<i>t</i> -1 to IPO, year <i>t</i>)
Mean operating income changes, sample firms (%)	10.15	11.18**	14.23***
Industry average, annual change in operating income (%)	8.71	7.23	7.73

*** Significantly different from industry average at $p < 0.01$.

** Significantly different from industry average at $p < 0.05$.

* Significantly different from industry average at $p < 0.10$.

Second, our research has been done at a date when not enough time has elapsed to provide the longitudinal data necessary to fully evaluate the record on management buyouts. Our best efforts to obtain as complete a sample as possible have been constrained by the newness of the buyout phenomenon. Both these limitations are not resolvable through research design changes, but will be resolved in future years as more information becomes available.

DISCUSSION

From the results of the first part of the study investigating buyout firm characteristics, we note that higher levels of liquidity, sales to receivables ratios, and a history of prior takeover attempts on the firm distinguish buyouts from industry rivals not engaging in buyouts. This extends Maupin's (1987) finding that firms undergoing buyout had higher levels of liquidity than their rivals. Our findings extend Maupin's work by noting that firms engaging in management buyout have been takeover targets in the past. Second, in our study we tested whether the high levels of liquidity in companies prior to buyout were related to a lack of investment in sales growth, but found no significant difference between buyout firms and their industry rivals in growth rates. It may be, then, that firms undergoing buyout had accumulated higher levels of slack than non-buyout firms (here we use slack in the same manner as Cyert and March, 1963). Also, we found that prior takeover attempts on the firm were significant in distinguishing firms going private and their industry controls. These results

are consistent more with the value creation argument explaining buyout activity than the managerial opportunism argument.

From the post-buyout and pre-public offering results reported in Tables 6 through 8 it is clear that there are significant differences in key operating indicators between firms which go private and their industry counterparts. In particular, inventory management and accounts receivable register substantially favorable levels of improvement over time than the industry average. It is clear that improvements in operating indicators occur over a remarkably short period, and suggest that managers make radical changes in the operations of their firms to achieve these benefits. Interestingly, there is a concomitant increase in total revenues of the private firms when compared with corresponding numbers from the industry average, although this result appears to be driven by divisional buyouts in the sample. Noting that independent companies engaging in a management buyout have had higher levels of liquidity than randomly selected industry counterparts, the increases in efficiency beyond industry averages in the years prior to going public again suggest a removal of slack in ways that enhance operating results. This aspect of the study is consistent with the value creation argument of Jensen (1986).

However, to the extent that Cyert and March (1963) provided an explanation for slack resources in firms as buffers to combat uncertainty, the observed improvements in inventory and accounts receivable can be interpreted as a shift in philosophy towards a substantially leaner style of operation. The concomitant changes in governance (board sizes and composition) and incentives through higher stock ownership levels perhaps

are facilitators in achieving the shift towards a leaner enterprise.

We note that the firms which grew the most aggressively were formerly divisions of larger corporations. This group drives the higher (than industry) growth averages of the post-buyout sample as a whole. Divisional managers experience the greatest shift in governance and incentives, moving from a unit in a large corporation to an independent entity privately owned by its managers. From the results it appears that such units benefit substantially from going private. Although the units in the sample have moved to public offering once again, it is worthy of note that no divisions have offered a majority portion of their stock to public owners and, based on case analysis by the author, have accessed the market to allow some investors to realize gains. Thus, there is a simultaneous increase in efficiency through reduction of slack and in revenue generation over the 3 years prior to going public. In this group there may be greatest discontinuity associated with buyout; the move to private ownership bringing with it a very entrepreneurial structure, with high levels of stock ownership and autonomy for management.¹³

The improvements in operating income are not just due to cost containment alone. There are clear indications of improvement in sales revenues in the case of divisions at the same time. An improvement both in revenue generation and in cost containment suggests that managers are able to function in a uniquely more productive fashion than in the periods prior to the buyout. These improvements on the cost and revenue side are collectively substantial. An interesting question is: why are these benefits unavailable when the firms are publicly held? The answer to this question is not completely clear, although a contributor to the results is the incentive structure for managers and board members: the change in equity ownership from 15 percent to 37 percent. Another contributor to the performance improvements, based on case analysis of ten buyouts in the sample, is the comprehensive reassessment of all aspects of operations of the post-buyout firm to examine sources of cash.¹⁴ Furthermore, if investor groups are involved as well, then a

small number of outsiders hold large amounts of stock in the firm, and have seats on the board.¹⁵ Such a governance structure may be more appropriate than the larger and more complex structure of the conventional public corporation.

Although our results present a favorable picture of buyouts, there are some clouds on the horizon. An important concern is the high salience of cash flow in such corporations. It is possible that an excessive emphasis on cost rollbacks can diminish slack in the firm to a level which may enhance the firm's vulnerability to downturns in business conditions. Such a problem may be encountered in recessionary times. This concern refers to underestimation of business risk in some firms at the time of financing, accentuating the impact of unanticipated shocks to the firm's main lines of business. Another concern relates to potential conflict between investor groups and management. It is possible that tensions may develop after the first 2 years on the issue of when to go public, and how the firm should operate in the periods before the process of public offering. Finally, a concern that has often been voiced in the popular press is the consequences of non-payment of debt in the event of adverse environmental shocks on the firm—and the resultant impact on stakeholders of the firm (see for instance Bartlett, 1989). An unforeseen but relatively small shortfall in cash flows (*vis-à-vis* conservative projections) in the first few crucial years after a buyout can result in a dramatic corporate failure. These concerns are exacerbated by the fact that manager and investor group incentives may result in different preferences both in priorities to be followed in the years preceding public offering and in the time frame of their commitment to the firm. Over time, more information will be available to gauge the magnitude of the impact of these issues on the success (or lack thereof) of management buyouts.

The results of our research are not compatible with the pure managerial opportunism (market

¹³ Detailed case analysis of Formica, Inc. and other divisional buyouts very strongly supports this interpretation.

¹⁴ Of particular interest are the cases of Harley Davidson, Motel 6, and Fred Meyer, Inc. In all these cases there were continued

¹⁴ continued

shifts in operations after buyout that could conceivably have been done if no buyout had occurred; however, the radical shift that the operational changes collectively meant would have been too extensive to be instituted under the normal course of company planning cycles.

¹⁵ Based on interviews with representatives of such investors we have concluded that those institutional representatives on the board of a firm after buyout tend to give managers high discretionary room over operational decisions, unless targeted performance (in financial terms) is not met.

correction without any operational changes) argument. Managers and investors in these firms were not merely waiting for a market correction after having taken the firm private. On the contrary, managers in the firms in this sample demonstrate a willingness to make rather drastic changes in the operations of their respective firms. The changes in operations and in operating performance suggest high levels of managerial intervention in the firm. Further illustrative evidence of the value creation hypothesis is that the average percentage of stock issued is 31 percent, reinforcing the notion that managers are not ‘cashing out’ their entire holdings when the firm is offered to the public. The phenomenon of management buyouts may be a sign of a new option in governance of firms and divisions: the possibility that managers can determine whether the assets and income streams of the firm are sufficient to justify purchase of control of the firm from its existing shareholders, and then to re-offer the firm in a very different form for public ownership a few years later. This substantial change in governance of the firm may be the new context in which entrepreneurial decisions are made, through the creation of a new organization (Low and MacMillan, 1988). The ‘engine’ which drives these operational changes in firms undergoing buyout relates to radical changes in governance of the firm—new incentive structures, increased ownership, a more focused board and a complete reexamination of operational strategy.

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APPENDIX A: INSTITUTIONAL DETAILS OF MANAGEMENT BUYOUTS

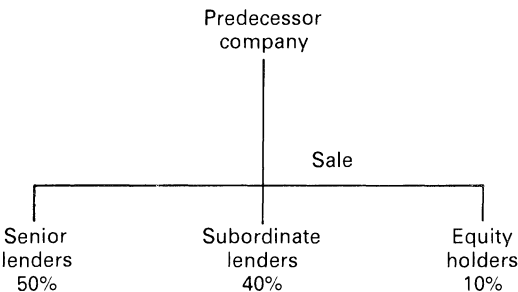
Management buyouts are transactions in which the management team, in conjunction with an

investor group, buys the firm from its public stockholders using a high level of debt to finance the transaction. A buyout can be thought of as a substitution of common stock with debt. In general, the level of debt in such transactions is 90 percent of the total capital structure of the firm. The high level of debt is made acceptable to the lenders by using the firm’s assets as collateral and cash flow from the operations of the firm to pay off the loans over time.

The debt consists broadly of two kinds: *senior debt* and *subordinate debt*. *Senior lenders* consist of commercial banks or finance companies. Senior lenders have first rights to the liquidation value of the firm in the event of bankruptcy. The focus of lenders, however, is on the repayment capability of the firm, as reflected in its projected cash flows. Loans from senior lenders have a five to ten-year term to maturity, and the concern of the lenders typically centers around the firm’s ability to service the debt.

Subordinate debt is usually provided by various institutional investors, such as pension funds, finance companies, and, more recently, funds exclusively developed for leveraged buyouts (such as that of KKR). In the event of bankruptcy of the firm, these lenders have access to the firm’s assets only after the claims of senior lenders have been honored, hence the term ‘subordinate.’ In view of this risk, subordinated lenders have a higher rate of return than senior lenders. Due to the higher level of risk borne by subordinated lenders, often equity or warrants for equity positions in the company are offered to complete the transaction.

Equity investors have about 10 percent of the market value of the transaction, although this proportion varies below 10 percent as well. The equity investors comprise the management team of the company, leveraged buyout specialists, and some additional investors such as employees (via employee stock option plans) and venture capitalists.



APPENDIX B: INSTITUTIONAL DETAILS OF PUBLIC OFFERINGS

A public offering is a vehicle for a firm to obtain capital from equity investors. Existing investors in a privately held company created through leveraged buyout offer a portion of the company to other equity investors to provide capital. There are other reasons why firms may make a public offering.

First, this is a method for the investor groups typically involved with management to release capital from the firm to other investments. Typically, when a firm has made a public offering after having engaged in a leveraged buyout, debt has been paid down to a reasonable level (about twice the level of equity in the firm). The purpose of the offering is to provide capital from other equity investors for further investment in the firm, and to allow the original investors in the firm to redeploy capital to other uses.

Second, a function of the public offering is to bring the company back into the public investment domain, and to create an opportunity for the firm to be valued in the open equity markets. In this manner, any capital gains or losses from the process of going private and subsequently making a public offering will be apparent.

Third, the public offering is an opportunity to significantly alter the governance of privately held firms. For instance, the composition of the board of directors will shift with the addition of more conventional outside directors (prominent lawyers, CEOs of other corporations, prominent academics and consumer activists). Consequently, the proportion of the board involving representatives of the original investor group is diminished.

Fourth, the public offering is an opportunity for the equity investors in the buyout to make a capital gain. Initial investors in the buyout, such as management and the investor group, make capital gains on their investment, as the offering price is typically considerably higher than their original investment in the firm.

The process and price

The firm making the offering will seek an underwriter or a group of underwriters to complete the transaction. The underwriter essentially provides a signal that the offering is credible at the announced price.

The underwriter also actually estimates the appropriate pricing level of the offering. The offering is based upon an assessment of comparable firms which are publicly traded and the unique features of the firm whose stock is being offered to the public. There is considerable uncertainty surrounding how the offering will actually be received. This is why there is some conservatism in the process of pricing the offering. This conservatism often leads to rises in the value of a firm's stock to levels considerably beyond the offering price after the offering has been successfully completed.

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