CORPORATE GOVERNANCE AND FIRM PERFORMANCE OF HIGHLY LEVERAGED TRANSACTIONS: EVIDENCE FROM LEVERAGED RECAPITALIZATIONS AND MANAGEMENT BUYOUTS

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Abstract

We examine the effects of several corporate governance mechanisms on firm performance of two highly leveraged transactions (HLTs). Employing forty-one firms that implemented leveraged recapitalizations (LRs) and eighty-eight firms that undertook leveraged management buyouts (MBOs) during the period 1985-1990, we find that prior to their HLT, MBO firms tend to be smaller, be less profitable, have higher managerial ownership, have lower block ownership, and have a smaller fraction of independent outside directors on their board than LR firms. On the other hand, we observe no significant difference in board size or equity-based compensation between MBO and LR firms. Our regression results show that higher managerial ownership and greater equity-based compensation, which presumably help align managers' incentives with shareholders, are strongly associated with operating performance of MBO firms, but only marginally with operating performance of LR firms. In contrast, greater outside representation on corporate boards, which presumably improves shareholder monitoring, is strongly associated with operating performance of LR firms, but only marginally with operating performance of MBO firms. Blockholders' ownership, another effective mechanism of internal monitoring, is found to play a relatively insignificant role in enhancing operating performance of firms that go through a HLT. Our results are not attributed either to the difference in firm size or to an industry effect.

Keywords: corporate governance, firm performance, management buyouts, leveraged recapitalizations

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1. Introduction

In modern corporations, stockholders rely on internal and external governance mechanisms to help resolve agency problems that arise from the separation of ownership and management. Boards of directors and blockholders are important internal control mechanisms whereas the takeover market is a major source of external control. In this context, a growing body of research has dealt with the effectiveness of alternative corporate governance systems such as the Anglo-Saxon market based system and the Continental-European bank based system.[1] An active market for corporate control would make corporate governance ultimately market-based. Widespread corporate misconduct in the U.S. during the early 2000s, however, raises questions about its effectivenes.

In this study, we examine how various corporate governance mechanisms affect firm performance of highly leveraged transactions (HLTs). We take two HLTs that were widely used in the market for corporate control during the 1980s: leveraged management buyouts (MBOs), in which a company is purchased by a group of its managers with debt financing, and leveraged recapitalizations (LRs), in which a large debt-financed cash payout, generally either a special dividend or tender offer repurchase, is distributed to stockholders. These two HLTs share many similarities in that both often occur in response to a takeover threat and tend to substantially increase firm value, debt levels, and insider ownership. MBOs and LRs, however, lead to a very different post-HLT governance system. MBOs take a company private

[1]Dennis and McConnell (2003) and Holmstrom and Kaplan (2003) review recent development of corporate governance issues.

with little or no publicly traded equity whereas LRs retain relatively diffuse outside ownership of publicly traded equity. Contrasting MBOs and LRs provides an excellent experiment for exploring the effectivenss of vastly different corporate governance systems and their effects on firm performance while controlling for increased leverage.

Previous research documents the characteristics of HLTs and their effects on securityholders' wealth and firm performance.[2] These studies, however, pay little attention to the relation of various governance mechanisms of MBO and LR firms on firm performance. Although it would be interesting to examine the impact of pre-HLT corporate governance on post-HLT operating and stock performance, post-MBO performance data are difficult to obtain due to MBO firms' private company status. Accordingly, we investigate the potential differences in corporate governance mechanisms of ownership structure (managerial ownership and blokcholder ownership), corporate boards, and executive compensation for the pre-HLT period and the empirical relations between pre-HLT corporate governance characteristics and pre-HLT firm performance of firms conducting MBOs and LRs. The four pre-HLT governance mechanisms of MBO and LR firms would all be closely related to the firm's operating performance. Jensen and Meckling (1976) argue that increased equity ownership by managers provides them with incentives to make value-maximizing decisions. Morck, Shleifer, and Vishny (1988) and McConnell and Servaes (1990) document a curvelinear relation between management ownership and firm value. Jensen and Murphy (1990a, 1990b) argue that equity-based compensation provides managers with an incentive to maximize value. Additionally, large outside blockholders, recognizing that managers have a tendency to skew decisions in directions that would benefit themselves, have an incentive to monitor managers (Demsetz and Lehn (1985), Jensen (1989), and Shleifer and Vishny (1986)). Denis and Serano (1996) find that monitoring by active outside blockholders with substantial ownership stakes often promotes valuable internal control efforts. It has been suggested that the Anglo-Saxon regime shareholders may control management decision making through both the board and the market for corporate control. In the Continental-European system, alternately, shareholder control can only take place through corporate boards in the absence of the market for corporate control and the effective mechanisms for legal investor protection.[3] Hence, shareholders in both regimes will be seriously interested in board characteristics when it comes to the accountability of managements for corporate performance. As noted in the seminal study of Fama and Jensen (1983), boards can be effective mechanisms to monitor top management on behalf of dispersed shareholders by effectuating management appointment, dismissal, suspension, and reward. Several studies suggest that top managers are more vigorously monitored when the board of directors is controlled by independent outside directors (see, e.g., Berger, Ofek, and Yermack (1997), Brickley, Coles, and Terry (1994), Byrd and Hickman (1992), and Weisbach (1988)). Yermak (1996) also argues that board size has an impact on the quality of internal monitoring. In contrast, examining a two-tier board system of Netherlands, Ees, Postma, and Sterken (2003) find no evidence of a strong relation between firm performance and board size. They also report that the number of outside board members is negatively associated with firm performance, whose evidence is contrary to those from Bhagat and Black (1998), Dalton et al. (1998), and Hermalin and Weisbach (1991).[4] Combined together, well-designed corporate governance systems would either align managers' incentives with shareholders through substantial managerial ownership and equity-linked compensation plans or promote active monitoring on managers' decision making through outside block ownership and boards of directors. Hence, firms with good corporate governance should put greater emphasis on value maximization.[5]

Based upon a sample of 41 LRs and 88 MBOs during the 1985-1990 period, our empirical results indicate the following. Prior to their HLT, MBO firms tend to be smaller, be less profitable, have higher insider ownership, have lower block ownership, and have a smaller fraction of independent outside directors on their board. A further analysis shows that these findings can not be attributed either to the difference in firm size or to an industry effect.

We perform regression analysis of two industry-adjusted measures of firm's operating performance against four corporate governance mechanisms along with firm size as a control variable. The results show that CEO equity ownerhsip and the fraction of indenpendent outside directors on the board are significantly positively related to operating

[2]See Palepu (1990) and Halpern, Kieschnick, and Rotenberg (1999) for a review of LBO research and Palepu and Wruck (1992) for a review of LR research. Bae, Hendershott, and Jo (2001) investigate factors determining a firm's choice of an organizational form between a LBO and a LR.

[3]The Economist (January 29, 1994) argues that American corporate governance is improved by merger and takeover activity, while questioning the effectiveness of the German and Japanese corproate governance model.

[4]In a similar line of reasoning, Hartzell and Starks (2003) suggest that institutional investors also serve a monitoring role in mitigating the agency problem between shareholders and managers.

[5]Several studies examine the relation between foreced CEO turnover and firm performance (see, e.g., Allgood and Farrell (2000), Parrino (1997), Warner, Watts, and Wruck (1988)). Interestingly, Huson, Parrino, and Starks (2001) report that although there were significant changes in internal monitoring mechanisms from early 1970s to mid-1990s, the relation between the likelihood of forced CEO turnover and firm performance has not changed significantly over the time.

performance for MBO firms, but marginally to operating performance for LR firms. On the contrary, board dependence, measured by the ratio of outside independent directors on the board, is strongly related to operating performance of LR firms, but only marginally to operating performance of MBO firms.

Our results suggest that higher managerial ownership and greater equity-based compenstion relative to total compensation, which presumably help align managers' incentives with shareholders, are strongly associated with operating performance of MBO firms. In contrast, greater board independence measured by the number of outside directors on corporate boards, which presumably improves shareholder monitoring, is strongly associated with operating performance of LR firms. Blockholders' ownership, another effective mechanism of internal monitoring, plays little, or relatively insignificant, role in enhancing operating performance of firms that go through a HLT.

Our paper proceeds as follows. Section II compares governance and ownership structures between LR and MBO firms, and Section III discusses our sample data and measurement of variables. Section IV presents empirical results with conclusions in Section V.

2. Governance and Ownership Structures Between LR Firms and MBO Firms

Previous studies document a different ownership structure between LR and MBO (or LBO more generally) firms and provide evidence consistent with greater management incentive rationale for MBO firms. For a sample of 76 MBOs in 1980-1986, Kaplan (1989) reports that while the median pre-buyout ownership of all managers is 5.88 percent, the median post-buyout ownership increased by about three times the pre-buyout value to 22.63 percent. Smith (1990) provides similar evidence on the concentration of ownership that the median post-buyout ownership share of all officers, outsider directors and other major holders for MBO firms is 95.26 percent, compared to the corresponding pre-buyout ownership share of 75.45 percent. Kaplan and Stein (1993) find that for 124 large MBOs during the 1980s the managerial ownership increased from 5 percent prior to the buyout to 22.3 percent after the buyout.

Following a typical LR transaction, managerial ownership also increases, but in a much smaller magnitude. According to Gupta and Rosenthal (1991), the pre- and post-LR managerial ownership is 3.8 percent and 8.4 percent, respectively. Denis and Denis (1993) find that equity ownership of officers and directors increases from a median of 1.7 percent to a median of 3.6 percent. Similarly, Palepu and Wruck (1992) report that managerial ownership of defensive recapitalization firms increases from 2.9 percent to 5.9 percent. Denis (1994) provides similar evidence on the changes in managerial ownership for LBO and LR firms.[6]

The difference in ownership structure following MBOs and LRs appears to result in different compensation arrangements for top management. Conceivably, management ownership stake is more enhanced by MBO firms so that their incentives are stronger for improved performance than LR firms. Going-private MBOs facilitate compensation arrangements that induce management to undertake some investment proposals that would require disproportionate effort of managers, and hence disproportionate share of the proposal's income (DeAngelo, DeAngelo, and Rice (1984) and Travlos and Cornett (1990)). Muscarella and Vetsuypens (1990) provide evidence on management incentives following LBO transactions. They show that almost all firms in their sample (69 out of 72) implement at least one type of incentive plan under private ownership and that the two most popular types of incentive plans are stock option plans and stock appreciation rights. Their study also reports an elasticity of compensation (defined as salary plus bonus) to sales of 0.46 for the most highly paid officer in their sample. This finding is in contrast to the typical elasticity of about 0.3 found for public companies in Murphy (1985). By comparing the Kroger Co.'s LR with the Safeway Stores' LBO, Denis (1994) shows similar evidence that while Safeway relates managerial compensation more closely to firm performance, there was no such compensation scheme at Kroger.

Finance literature has also documented that MBOs (and LBOs in general) replace prior management and provide new management with large equity stakes, whereas LRs involve little change in governance of the firm. In an LBO, managers are frequently replaced and they are responsible to a small but powerful group of shareholders (e.g., LBO specialist or institutional investors). Jensen (1993) shows that following an LBO, boards of directors shrink to about seven or eight people and the sensitivity of managerial pay to performance rises. In a study of 42 firms that announced LRs during the 1985-1989 period, Handa and Radhakrishnan (1991) report that only five firms result in a change of CEOs following the firms' financial problems. Denis (1994) also shows a dramatic difference in the composition of the board of directors following Kroger's LR versus Safeway's LBO. While there were no changes in Kroger's board at a result of their LR, Safeway's board size was reduced from eighteen to five members; only two members of the old board remained following

[6] Unlike these studies, Kleiman (1988) reports that average insider ownership increases to 29.5 percent after LRs from a pre-LR average of 8.1 percent.

the buyout. It was also noted that Kroger's board held just 1.8 percent of the firm's equity after LR, whereas Safeway's board represented 92.6 percent of the firm's equity after the buyout.

The evidence suggests that the incentives for closer board monitoring of managerial behavior should be much stronger in MBOs than in LRs. Denis (1994) offers similar evidence on executive compensation for LR and LBO firms. There was no formal change in the structure of Kroger's executive cash compensation following LR. In contrast, there were major changes in executive compensation policy following Safeways' buyout which included bonuses as high as 110 percent (vs. 40 percent prior to buyout) of the executive's salary and also tied bonus payments to performance measures.

To put in perspective, there appear to be significant changes in ownership structure, board composition, and executive compensation policy following MBOs in a way that not only gives MBO firms' management more incentive, but also increases monitoring of top management. Hence, MBOs (especially induced by LBO specialists) would result in large changes in corporate governance and involve closer monitoring of management by the newly-formed board of directors. This suggests, as Denis (1994) points out, that given the small financial incentives of LR firms' officers and directors, these firms may choose the LR transaction as a means of avoiding these changes in governance system and monitoring. On the contrary, the increased ownership following LRs may improve managerial incentives and monitoring, but its effect is expected to be much smaller than for the case of MBOs. Hence, going private through MBOs enables the firm to institute more incentive compensation plans, which may not be possible for public firms due to the outside restrictions such as political process (Jensen and Murphy (1990b)).

In sum, leverage coupled with changes in governance structure appears to effectively eliminate the agency problem of free cash flow. While managers in recaps may waste resources to defend their position to potential takeover threat, going private MBOs may eliminate these costs. In many MBOs, the LBO specialists (e.g., KKR) retain a large equity stake and serve on the board. The equity stake and their desire to protect their reputation as efficient sponsors give them the incentive to closely monitor post MBO management. The concentrated ownership resulting from a MBO represents reunification of ownership and control. As documented in Denis (1994), the improved incentive structure and increased monitoring provided by the LBO specialists appear to lead managers to generate cash in a more productive manner than did the organizational structure of LR firms.

3. Data and Measurement of Variables

A. Data

We collect data from a sample of MBO and LR firms during the period 1985 to 1990, the period of greatest LBO and LR activities during the 1980's. The recession of 1990-1991, combined with a collapse of the high-yield junk bond market in 1989, brought a substantial drop of LBO activity to $6.8 billion in 1991, less than 9 percent of the $76 billion in 1989. With the more favorable economic environment and the resurgence of the high-yield bond market since 1992, however, the LBO market has moved to an age of renewal, expanding its scope increasingly beyond mature slow-growing industries to high growth technology-driven industries (Allen (1996)). However, we use the 1985-1990 period because LRs first appeared in 1985, and LR activity dropped sharply after 1990 and there is almost no LRs after 1990.

Our sample of LRs comes from a search of the annual industrial Compustat tapes for large special dividends and stock repurchases. Each LR transaction indicating that there was an abrupt recapitalization is then confirmed from the news media. This process results in 41 sample LR firms that distribute at least 20 percent of their market value of equity in a debt-financed special dividend or nontargeted tender offer repurchase (but not a LBO).

We construct our sample of MBOs using a newspaper search of the *Wall Street Journal* abstracts over the same period for the keywords "LBO," "MBO," and "buyout," and selecting the resulting LBOs that meet criteria similar to those in Kaplan (1989). Specifically, (i) the firm must go private in a whole company LBO[7]; (ii) there cannot be a pre-MBO majority owner; and (iii) the firm must maintain its independence following the LBO. In addition, we categorize a LBO as a MBO when at least one top incumbent manager (CEO, Chairman, or President) is reported as taking an equity position in the buyout. If no top incumbent manager is reported as taking an equity position in the buyout, the firm is classified as a non-MBO LBO. We also require that sufficient Compustat data are available for our tests. This produces a sample of 88 MBO firms out of 106 LBO firms. Table 1 provides the sample distribution by year. The sample LR firms are most heavily concentrated in 1988-1989 and are very thin in 1990. The sample MBO firms are most heavily concentrated in 1987-1989 and are very thin in 1990. We use the *Wall Street Journal Index* to learn whether an active takeover threat exists prior to the initial MBO or LR proposal.

[7]We do not include divisional LBO firms in our sample because divisional LBO firms are believed to be more comparable with other corporate divestiture tactics, such as equity carve-outs, spin-offs, sell-offs, and asset sales.

We define an active takeover threat as either an actual takeover offer or a large (>5 percent) toehold disclosure by a potential bidder along with published speculation about a possible takeover in the *Wall Street Journal.*

B. Measurement of Variables

In our tests, all financial variables are taken from the Compustat tapes for the last full fiscal year before each firm's HLT. We measure pre-HLT performance using firms' profitability. Since potential operating improvements can be the result of restructuring either capital or labor, we measure pre-HLT performance as both the ratio of operating income to total assets and the ratio of operating income to the number of employees. These are common performance measures in the HLT and governance literature (see, e.g., Allgood and Farrell (2000), Kaplan (1989), and Smith (1990)). We use four variables measuring the quality of corporate governance systems—managerial equity ownership, outside block ownership, board independence, and CEO equity-based compensation—and collect the governance data from published proxy statements for the last full fiscal year before the HLT.

We measure managerial equity ownership in two ways: CEO's beneficial ownership and the beneficial ownership of all officers and directors. Outside block ownership represents equity ownership of outside blockholders and is measured as the sum of greater-than-five percent owners that are unaffiliated with the firm. We measure board independence as the number of independent outside directors divided by the total number of directors on the board. We define independent outside directors following Hermalin and Weisbach (1988) as directors who have no past, present, or likely future financial ties to the firms other than compensation for being a director (investment bankers are assumed to have likely future financial ties). For the variable, we exclude gray directors who are relatives of former or current officers or have personal business relationship with the firm. Finally, following Mehran (1995), we measure CEO's equity-based compensation as the sum of the value of CEO stock, pseudo-stock, and option grants expressed as a percentage of total compensation.

4. Empirical Results

A. Preliminary Comparison of MBO Firms and LR Firms

Before we examine the effects of various corporate governance mechanisms on firm performance of HLT firms, it will be beneficial to have some preliminary comparison of how the HLT transactions affect leverage and ownership in our sample firms. While changes following LRs are observed directly, changes following MBOs are based on the financing and equity investment information provided in the buyout proxy statement filed with the SEC.

Table 2 presents a preliminary summary of how HLTs change leverage and equity ownership. In both MBOs and LRs, debt levels roughly quadruple from relatively low levels (around 20 percent of total assets) to very high levels (around 80 percent of total assets). These findings demonstrate that both transactions are associated with dramatic (and similar) leverage increases. LRs have, however, a much more modest impact on firms' organizational form. While remaining publicly traded corporations, LR firms are associated with only a modest increase in director and officer ownership and outside blockholdings. For LR firms, the median level of managerial ownership rises from 3.3 percent to 4.1 percent while the largest blockholder's stake rises from a median level of 5.7 percent to 6.7 percent. On the other hand, MBO firms experience more dramatic organizational changes after going private. The median director and officer ownership rises from 12.0 percent to 24.6 percent, and the largest blockholder's median stake rises from 8.6 percent to 77.1 percent. Our results clearly indicate that although MBOs and LRs result in similar capital structure changes, they produce very different organizational structures at least in terms of equity ownership structures.

B. Univariate Tests

Table 3 provides summary statistics from tests for univariate differences in firm characteristics between MBO and LR firms. As a group, LR firms are larger (based upon both total assets and market value of equity) and more profitable, particularly when profitability is measured by the ratio of operating income to number of employees. Both managerial and outside block equity ownership are higher in MBO firms, but LR firms have more outside directors relative to total board size. There is no significant difference in board size or CEO's equity-based compensation relative to total compensation between MBO and LR firms. The significant difference in size between the MBO and LR groups measured by both total assets and market value of equity, however, makes these results difficult to interpret. For example, because large firms tend to have lower managerial ownership, the ownership difference between MBO and LR firms could be entirely a reflection of MBOs being, on average, smaller firms.

C. Analysis of Covariance Test

As a way to better control for the size difference between MBO and LR firms, we undertake an analysis of covariance (ANCOVA). An ANCOVA is functionally identical to regressing the variable of interest (for example, managerial ownership) on a covariate (in our case, firm size) and a dummy variable that classifies the two groups (in our case, MBOs and LRs). The impact of the dummy variable on the regression's sum of squared errors is represented by an

F-statistic that measures the dependent variable's difference between the two groups, controlling for the covariate. The regression coefficients can also be used to compute the least square mean for each group, representing the group means adjusted for differences in the covariate.

In addition to controlling for size, it may also be important to control for industry difference between our sample firms. Although MBO and LR firms tend to come from similar industries, a subtle difference in industry could explain some of the univariate differences in Table 3. For example, the lower average ratio of operating income to number of employees could be the result of our MBO sample consisting of more firms from high employment service industries. To better proxy for potential improvements using pre-HLT performance, we industry-adjust our profitability ratios by subtracting the median ratios for all Compustat firms with the same four-digit SIC code, excluding firms in our sample of HLTs. Because these industry-adjusted ratios are benchmarked against clearly attainable norms, they should provide better measures of pre-HLT capital and organizational structures of our sample firms. Table 4 reports results from the ANCOVA tests for group differences between MBO and LR firms, controlling for firms' market value of equity using industry-adjusted profitability measures. Even after controlling for size, significant differences exist in industry-adjusted profitability, managerial ownership, block ownership, and board composition between MBO and LR firms. There continues to be no significant difference in CEO's equity-based compensation or board size between the two groups.

Our results on lower profitability, both per dollar of book assets and per employee, for MBO firms than LR firms are consistent with MBOs being more common in firms that have the potential to most benefit from additional monitoring by MBO equity investors (see Denis (1994)). These results are not sensitive to various methods for industry adjustment (e.g., using three-digit SIC code matches or industry means). On the contrary, lower managerial equity ownership, higher block ownership, and greater board independence for LR firms are consistent with the notion that managers in weak positions will prefer LRs. Measuring size using total assets in place of market value of equity makes virtually no difference in our results.

D. Size Matched-Sample Tests

The ANCOVAs assume a specific relation between firm size and the other variables; for example, the ANCOVAs assume a linear relation between size and managerial ownership. In order to check the robustness of our results on the comparisons of variables between MBOs and LRs, we also examine thirty-five size-matched pairs of MBOs and LRs. To construct the size-matched sample, each LR is matched to a MBO with the closest market value of equity. Whenever possible, a LR is matched to a MBO that has full governance data available. However, in cases where no MBO with full governance data available has a market value of equity within 10 percent of the LR's market value of equity, a match is made to the closest MBO without regard for governance data availability (one case using the MBOs). If no MBO with a market value of equity within 20 percent of the LR is available, the LR is not used in the analysis (four cases using the MBOs). Each MBO firm is used as a match only once.

Table 5 presents summary statistics from difference tests using the size-matched samples. The results using size-matched pairs provide evidence supporting that LR firms are more profitable and have lower managerial ownership and more independent boards. These results confirm our earlier empirical results. [8] The size-matched pairs, however, do not indicate a difference in outside block ownership between MBO and LR firms.

E. Regression Analysis of Firm Performance

We use two multivariate regression models to investigate the potential differences in the effects of governance mechanisms on firm preformance between MBO and LR firms. We regress two measures of operating performance seperately on four different mechanisms of a firm's corporate governance, along with a size control variable. The dependent variable in regressions 1 and 2 is operating income divided by total assets and operating income divided by number of employees, respectivley. Both measures of operating performance are industry adjusted.

The regression results are summarized in Table 6. Overall, the five-variable regression models explain more than 25 percent of total variations in operating performance of sample firms. Regardless of the organizational form, the two measures of firm's operating performance exhibit similar relations to the four variables proxying corporate governance mechanisms. The estimated coefficient of CEO equity ownership is positive and significant at the 0.01 level for both measures of firm perofrmance of MBO firms, whereas it is positive and significant at the 0.10 level for only one measure of firm performance of LR firms. These findings indicate that higher managerial owernship is strongly associated with greater operating performance for MBO firms and marginally for LR firms. Board independence, measured as the fraction of independent outside directors on the board, is significantly positively related to both measures of firm

[8] To further explore the effect of industry differences, we also constructed 31 industry-matched MBO-LR pairs. Tests using these industry-matched pairs produced results consistent with those reported in our study.

performance for MBO firms at least at the 0.05 level, but to only one measure of firm performance for LR firms at the 0.10 level. Hence, greater board independence is strongly associated with greater operating performance of LR firms and marginally with greater operating performance of MBO firms. The findings on the positive relation of independent outside directors on a corporate board to firm performance are consistent with those from prior studies in Bhagat and Black (1998), and Dalton et al. (1998), and Hermalin and Weisbach (1988).

The regression results for block ownership are weaker, though the sign of the estimated coefficient is consistently positive. Hence, block ownership has little, if any, effect on the operating performance of HLT firms. Unlike the first three variables of corporate governance mechanisms, the regression results on the ratio of CEO's equity-based compensation to total compensation are strikingly different between MBO and LR firms. To be more specific, the regression coefficient of equity-based compensation is positive and significant at least at the 0.10 level only for MBO firms. Hence, equity-based compensation is highly effective in enhancing operating performance for MBO firms, but plays a little role in generating greater operating performance for LR firms.

5. Summary and Conclusions

We examine the effects of several corporate governance mechanisms on firm performance for two similar highly leveraged transactions of LRs and MBOs. Both transactions result in heavy debt loads, but different organizational forms and governance structures. Employing a sample of 41 LRs and 88 MBOs during the 1985-1990 period, we find that prior to their HLT, MBO firms tend to be smaller, be less profitable, have higher insider ownership, have lower block ownership, and have a smaller fraction of independent outside directors on their board than LR firms. On the contrary, there is no significant difference in board size or the ratio of equity-based compensation to total compensation between MBO and LR firms. We find that these findings can not be attributed either to the difference in firm size or to an industry effect.

We perform regression analysis of two measures of firm's operating performance against four corporate governance mechanisms along with firm size as a control variable. The regression results show that CEO equity ownerhsip and the fraction of indendent outside directors on the board are significantly positively related to operating performance for MBO firms, but marginally to operating performance for LR firms. On the contrary, board dependence, measured by the ratio of outside independent directors on the board, is more strongly related to operating performance of LR firms, but only marginally to operating performance of MBO firms. As a whole, our regression results suggest that higher managerial ownership and greater equity-based compenstion relative to total compensation, which presumably help align managers' incentives with shareholders, are strongly associated with operating performance of MBO firms. In contrast, greater outside representation on corporate boards, which presumably improves shareholder monitoring, is strongly associated with operating performance of LR firms. Blockholders' ownership, another effective mechanism of internal monitoring, plays a little or relatively insignificant role in enhancing operating performance of firms that go through a HLT.

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Appendices

Table 1. Distribution of Sample Firms by Year

This table presents the distribution of sample firms. The leveraged recapitalization sample consists of 41 firms that distribute at least 20 percent of their market value of equity in a debt-financed special dividend or nontargeted tender offer repurchase (but not a leveraged buyout) between 1985 and 1990, the period of greatest HLT activity. The management buyout sample consists of 88 firms that use debt financing to go private with at least one top incumbent manager (CEO, chairman, or president) taking an equity position in the buyout between 1985 and 1990.

	Leveraged Recapitalizations		Leveraged Buyouts					
			All Buyouts		MBOs		Non-MBOs	
Year	number	(%)	number	(%)	number	(%)	number	(%)
1985	6	14.6	13	12.3	11	12.5	2	11.1
1986	6	14.6	17	16.0	14	15.9	3	16.7
1987	7	17.1	20	18.9	16	18.2	4	22.2
1988	11	26.8	35	33.0	30	34.1	5	27.8
1989	9	22.0	18	17.0	16	18.2	2	11.1
1990	2	4.9	3	2.8	1	1.1	2	11.1
Total:	41		106		88		18	

Table 2. Comparison of Variables Before and After Transactions Between Leveraged Recapitalizations and Management Buyouts

This table provides estimated changes in leverage and ownership after each type of highly leveraged transaction (HLT) from 1985 to 1990. The leveraged recapitalization sample consists of 41 firms that distribute at least 20 percent of their market value of equity in a debt-financed special dividend or non-targeted tender offer repurchase (but not a leveraged buyout). The management buyout sample consists of 88 firms that use debt financing to go private with at least one top incumbent manager (CEO, chairman, or president) taking an equity position in the buyout. The pre-HLT leverage variable is taken from the Compustat tapes for the last full fiscal year before each firm's HLT. The pre-HLT managerial and outside blockholders' ownership variables are from published proxy statements for the last full fiscal year before the HLT. The post-MBO variables are taken from the financing and equity investment information provided in the buyout proxy statement filed with the SEC. The post-LR variables are from the Compustat tapes at the closest time to the date suggested by the SEC filed information. Changes following the recapitalizations are observed directly. Changes following the buyouts are based on the information provided in the buyout proxy statement filed with the SEC.

	Leveraged Recapitalizations			Management Buyouts		
	before mean (median)	after mean (median)	ratio mean (median)	before mean (median)	after mean (median)	ratio mean (median)
Long term debt/ total assets	0.177 (0.154)	0.723 (0.681)	4.08 (4.42)	0.221 (0.201)	0.873 (0.896)	3.95 (4.46)
Equity ownership of all officers and directors	6.6% (3.3%)	10.1% (4.1%)	1.53 (1.25)	16.3% (12.0%)	32.8% (24.6%)	2.01 (2.05)
Largest outside blockholder	6.5% (5.7%)	8.3% (6.7%)	1.28 (1.18)	10.3% (8.6%)	62.3% (77.1%)	6.02 (9.30)

Table 3. Univariate Mean Test and Rank Sum Median Test

This table reports results from univariate mean test and rank sum median test. The leveraged recapitalization (LR) sample consists of 41 firms that distribute at least 20 percent of their market value of equity in a debt-financed special dividend or nontargeted tender offer repurchase (but not a leveraged buyout) between 1985 and 1990. The management buyout (MBO) sample consists of 88 firms that use debt financing to go private with at least one top incumbent manager (CEO, chairman, or president) taking an equity position in the buyout between 1985 and 1990. Tests for differences use a t-test on the means and a rank sum test on the medians. Total assets and market value of equity are reported in million dollars. Operating income/employees is in thousand dollars. Equity ownership is reported as a percentage of shares outstanding. The size and profitability variables are taken from the Compustat tapes and the corporate governance variables from published proxy statements for the last full fiscal year before each firm's HLT. ***, **, and * denote that the MBO sample differs significantly from the LR sample at the 0.01, 0.05, and 0.10 levels, respectively. Tests on size variables use natural logs.

	Leveraged Recapitalizations mean (median)	Management Buyouts mean (median)
Size		
Total Assets	2,629	1,047***
	(1,599)	(351)***
Market value of equity	1,596	830***
	(1,094)	(217)***
Profitability		
Operating income/total assets	0.176	0.151*
	(0.148)	(0.152)
Operating income/employees	28.84	13.28**
	(13.02)	(9.80)**
Corporate Governance		
CEO equity ownership	2.37	8.98***
	(0.50)	(2.20)***
Equity ownership of all officers and directors	6.60	16.27***
	(3.30)	(12.04)***
Equity ownership of outside blockholders	12.14	13.99
	(8.58)	(11.90)*
Board size	10.6	9.9
	(11)	(10)
Outside directors/board size	0.49	0.36***
	(0.50)	(0.38)***
Equity-based compensation/ total compensation	0.10	0.13
	(0.03)	(0.04)

Table 4. Comparisons of Sample Firms, Controlling for Size in an Analysis of Covariance (ANCOVA)

This table presents results from ANCOVA tests for group differences between leveraged recapitalization (LR) and management buyout (MBO) firms, controlling for firms' market value of equity. The LR sample consists of 41 firms that distribute at least 20 percent of their market value of equity in a debt-financed special dividend or non-targeted tender offer repurchase (but not a leveraged buyout) between 1985 and 1990. The MBO sample consists of 88 firms that use debt financing to go private with at least one top incumbent manager (CEO, chairman, or president) taking an equity position in the buyout between 1985 and 1990. The analysis of covariance controls for the natural log of market value of equity. Operating income over total assets and employees are industry-adjusted by subtracting the median value for all Compustat firms with the same four-digit SIC code. Equity ownership is reported as a percentage of shares outstanding. The size and profitability variables are taken from the Compustat tapes and the corporate governance variables from published proxy statements for the last full fiscal year before HLT. An ANCOVA is functionally identical to regressing the variable of interest (for example, CEO ownership) on a covariate (in our case, firm size) and a dummy variable that classifies the two groups (in our case, LRs and MBOs). The dummy variable's impact on the regression's sum of squared errors provides an F-statistic that measures the dependent variable's difference between the two groups, controlling for the covariate. The regression coefficients can also be used to calculate the least square (LS) mean for each group, representing the group means adjusted for differences in the covariate. ***, **, and * denote that the MBO sample differs significantly from the LR sample at the 0.01, 0.05, and 0.10 levels, respectively.

	Leveraged Recapitalizations LS mean	Management Buyouts LS mean
Profitability		
Operating income/total assets	0.042	0.010**
Operating income/employees	6.51	0.79*
Corporate Governance		
CEO equity ownership	3.69	7.18*
Equity ownership of all officers and directors	9.22	13.62
Equity ownership of outside blockholders	18.01	9.21*
Outside directors/board size	0.48	0.38**
Board size	9.90	11.40
Equity-based compensation/ total compensation	0.11	0.12

Table 5. Comparisons of Sample Firms Using Size-Matched Pairs

This table provides summary statistics and difference tests for the size-matched samples. The leveraged recapitalization (LR) sample consists of 41 firms that distribute at least 20 percent of their market value of equity in a debt-financed special dividend or non-targeted tender offer repurchase (but not a leveraged buyout) between 1985 and 1990. The management buyout (MBO) sample consists of 88 firms that use debt financing to go private with at least one top incumbent manager (CEO, chairman, or president) taking an equity position in the buyout between 1985 and 1990. Each LR is matched to an MBO with a similar market value of equity. Whenever possible, a LR is matched to an MBO with full governance data available. If no MBO with a market value of equity within 20 percent of the LR's is available, the LR is not used in this analysis. Each MBO is used as a match only once. Operating income over total assets and over employees are industry-adjusted by subtracting the median value for all Compustat firms with the same four-digit SIC code. Tests for differences use a t-test on the mean difference and a sign rank test on the median difference. ***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively.

	Leveraged Recapitalizations mean (median)	Management Buyouts mean (median)	Tests for differences t-stat (z-stat)	number of pairs
Profitability				
Operating income/total assets	0.040	0.011	2.72**	34
	(0.027)	(0.013)	(3.16)**	
Operating income/employees	5.81	1.54	1.81*	34
	(2.80)	(0.56)	(2.39)**	
Governance				
CEO equity ownership	2.68	6.96	2.14**	31
	(0.60)	(1.85)	(1.94)*	
Equity ownership of all	7.42	12.87	1.94*	31
officers and directors	(3.80)	(6.40)	(2.69)**	
Equity ownership of	12.56	14.29	1.42	31
outside blockholders	(8.73)	(11.48)	(1.50)	
Board size	10.5	10.8	0.31	31
	(10.0)	(11.0)	(0.78)	
Outside directors/board size	0.47	0.39	1.64	31
	(0.50)	(0.40)	(1.90)*	

Table 6. Regression Analysis of Firm Performance on Corporate Governance Mechanisms

This table provides regression results of firm's operating performance against four corporate governance mechanisms for firms that went through leveraged recapitalizations (LRs) or management buyouts (MBOs). The LR sample consists of 41 firms that distribute at least 20 percent of their market value of equity in a debt-financed special dividend or non-targeted tender offer repurchase (but not a leveraged buyout) between 1985 and 1990. The MBO sample consists of 88 firms that use debt financing to go private with at least one top incumbent manager (CEO, chairman, or president) taking an equity position in the buyout between 1985 and 1990. The dependent variable for regressions (1) and (2) is operating income divided by total assets and operating income divided by number of employees, respectively Both measures of firm performance are industry-adjusted by subtracting the median value for all COMPUSTAT firms with the same four-digit SIC code. T-statistics are in parentheses. ***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively.

	Leveraged Recapitalizations		Management Buyouts	
Explanatory variable	Regression 1	Regression 2	Regression 1	Regression 2
Constant	0.972 (0.625)	1.222 (1.210)	0.643 (0.596)	0.889 (1.046)
Log(Market value of equity)	-0.006 (-0.182)	-0.010 (-0.383)	-0.013 (-0.224)	-0.009 (-0.140)
CEO equity ownership	0.051 (1.396)	0.064 (1.802)*	0.109 (3.210)***	0.120 (3.418)***
Equity ownership of outside blockholders	0.032 (0.304)	0.029 (0.288)	0.068 (0.609)	0.063 (0.512)
Outside directors/board size	0.121 (2.204)**	0.150 (2.925)***	0.061 (1.536)	0.075 (1.690)*
Equity-based compensation / total compensation	0.020 (1.382)	0.026 (1.560)	0.035 (1.720)*	0.041 (1.804)*
Number of firms	41	41	88	88
Adjusted R^2	0.283	0.266	0.375	0.362