

Corporate governance and hostile takeovers

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In the preceding paper Shivdasani (1993) estimates equations predicting the probability of a hostile takeover as a function of governance characteristics. He finds that additional outside directorships by board members decrease the probability of a takeover. Ownership by management and by affiliated blockholders also decreases the probability of a takeover, while ownership by unaffiliated blockholders increases this probability. These results suggest that corporate governance affects takeover probabilities through two channels: (1) suboptimal contracting within a firm can lead to poor corporate performance and hence affect the desirability of a takeover, and (2) governance structures can alter the cost of a takeover and hence affect the takeover process.

1. Introduction

In order to understand the motivations of the preceding Shivdasani (1993) paper, I think it is important to spend a little time discussing the general issues raised in the paper. There are some related general issues that have been discussed in great detail at a number of previous MERC conferences and I hope will continue to provoke lively discussion at future MERC conferences. I would like to present them as two propositions. The first proposition is one on which the academic community has more or less agreed, but that the popular press still sometimes cannot understand. It states:

Proposition 1. One reason why hostile takeovers occur is to replace managers who are not maximizing shareholder wealth. Potential replacement of these managers through a hostile takeover provides incentives for them to take actions that keep their stock price as high as possible.

This proposition has been argued by a number of people, perhaps most eloquently by Michael Jensen, and has been modelled formally by David

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Scharfstein.¹ While ten years ago this proposition probably would have been considered fairly controversial, a large body of empirical work [see, for example, Mitchell and Lehn (1990)] has largely convinced the profession that it is accurate.

The second proposition, in its most general form, is also fairly universally accepted. It states:

Proposition 2. Corporate performance is partially a function of the quality of management, which given agency problems within the firm, will be a function of the quality of the governance structures of the firm.

Unfortunately for academics and potential reformers of corporate governance, measuring the quality of governance structures for someone outside the corporation is a difficult and imperfect task. Researchers testing this proposition have had to test a much stronger form of this proposition, which I'll call Proposition 2a:

Proposition 2a. Observable variables associated with the governance structure such as the ownership of top management and the board of directors, the compensation package of top management, and the composition of the board of directors will vary in ways so that we can observe firms with certain types of structures systematically outperforming firms with other governance structures.

This form of Proposition 2, which is probably the only form in which it can be tested, is nonetheless much stronger and more controversial than its weaker, more general form. The two most well-known and most heavily challenged papers performing tests of what I'm calling Proposition 2a are Jensen and Murphy (1990) and Morck, Shleifer, and Vishny (1988). Perhaps the most commonly stated objection to these sorts of tests is that they presume the existence of suboptimal governance structures. A popular view of some economists, particularly those associated with the Chicago School, is that unless regulations somehow interfere with private contracting, suboptimal contracts will rarely be observed and in those cases where they are observed, the forces of Economic Darwinism will prevent them from lasting very long.

My personal view is that the forces of Economic Darwinism can be weak and suboptimal organizational forms can and often do survive for long periods of time. Thus, I do not personally find Proposition 2a as objectionable on *a priori* grounds as some people do. However, I do not find the existing evidence to be completely persuasive either. There are a number of alternative explanations of the form: Jensen and Murphy's or Morck, Shleifer, and Vishny's empirical

¹See, for example, Jensen (1988) and Scharfstein (1988).

results, while suggestive of suboptimal governance contracts, actually are exactly what you would expect contracts to look like given certain realistic circumstances. These alternative interpretations of the prior evidence suggest that there is much more to be learned about the extent to which suboptimal governance structures cause poor corporate performance. Shivdasani (1993) presents some new evidence that is generally supportive of the view that corporate governance has a major impact on corporate behavior, and that the takeover wave of the 1980's is part of the process that eventually reorganizes inefficient organizations.

Shivdasani's research design is to use Proposition 1, which is generally accepted, as a means for understanding Proposition 2a, on which existing evidence is less convincing. Shivdasani argues that examination of the characteristics of firms that increase the likelihood of a hostile takeover is likely to tell us something about the effect of these characteristics on the quality of corporate governance. In other words, if we know what governance characteristics are associated with increased takeover probabilities and also that takeovers occur predominately in badly-run firms, then we make inferences about what characteristics of corporate governance lead to badly-run firms. Of course, when one makes this kind of inference, one must be careful to consider other ways that governance structures can influence takeover probabilities – for example, firms where managers have large holdings might be more difficult to take over than firms where managers have small holdings simply because a higher fraction of the nonmanagerial shareholdings must be accumulated by any potential acquiror.

Shivdasani analyzes a sample of large publicly traded firms during the 1980's. He uses econometric analysis to estimate the factors associated with corporate governance that predict the likelihood of a hostile takeover. This is not a new idea; Mikkelson and Partch (1989) estimate similar equations, while Christie and Zimmerman (1992) use takeover targets as a means of proxying for poorly-managed firms in a study of accounting choice. Nonetheless, Shivdasani has done a particularly good job of implementing the approach, and the resulting paper is one that adds to our understanding of corporate governance.

There are two major aspects of corporate governance into which Shivdasani's paper provides insights. First, the paper adds to our understanding of the importance of outside directors. Previous work, including some of my own, has emphasized what is referred to as the board composition, meaning the numerical quantity of outsiders relative to insiders on the board.² Shivdasani's work

²See Baysinger and Butler (1985), Brickley, Coles, and Terry (1991), Brickley and James (1987), Brown and Maloney (1992), Byrd and Hickman (1991), Hermlin and Weisbach (1988), Hermlin and Weisbach (1991), MacAvoy, Cantor, Dana, and Peck (1983), Mayers, Shivdasani, and Smith (1992), Rosenstein and Wyatt (1990), and Weisbach (1988).

implies that a second important characteristic of the board is what might be called the *quality* of directors. Shivdasani finds that his proxy for the quality of the outside directors, namely the number of other directorships at large publicly-traded corporations the director has, is a very important determinant of the probability of a hostile takeover. His econometric evidence suggests that firms where directors have a large number of other outside directorships can have a much lower probability of being taken over.

The second aspect of corporate governance Shivdasani addresses is the effect of ownership on corporate performance. Shivdasani finds two results on ownership. The first concerns ownership by the CEO and the outside directors, which according to his evidence decreases the probability of a takeover. This effect is likely to result through two channels: First, managers with large ownership positions are likely to have lower agency costs, which would mean better performance and less to be gained by replacing management. Second, the process of taking over a company is likely to be more costly when management has more shares and is able to resist the potential acquirer more effectively.

A second result on the effects of ownership concerns 5% blockholders who do not bid themselves for the company. Shivdasani finds that blockholders who are affiliated with management decrease the probability of a takeover, while blockholders who are not affiliated with management increase this probability. This result suggests that there are both costs and benefits of blockholders. Blockholders increase the monitoring capabilities by potentially facilitating a hostile takeover; however, blockholders who become affiliated with management can derive private benefits from this affiliation and actually make control changes more difficult. This result adds to a growing literature on large shareholders that suggests that blockholders provide both costs and benefits to the other shareholders.³

2. Sample selection

Shivdasani's goal is to examine a sample of targets of disciplinary takeovers. Since it is widely believed that hostile takeovers are disciplinary, while friendly takeover acquisitions are often synergistic, he wanted to study a sample of hostile takeovers. He used a sample that was originally constructed by Mitchell and Lehn (1990).

The Mitchell and Lehn sample identifies 1,158 firms followed by Value Line and whether or not each firm received a takeover bid between 1980 and 1988. Of these 1,158 firms, 247 received hostile bids and 258 received friendly bids, where

³See Barclay and Holderness (1989), Barclay and Holderness (1991), and Barclay, Holderness, and Pontiff (1991), Hermalin and Weisbach (1991), Kole (1991), McConnell and Servaes (1990), Morck, Shleifer, and Vishny (1988), and Shleifer and Vishny (1986).

the distinction between hostile and friendly was made by determining whether management resisted the takeover bid. The remaining 653 did not receive any bid over this period. If data collection were costless, the best procedure would have been to gather governance information on all 1,158 firms in the sample. However, data on the characteristics of management are relatively expensive to collect since they usually have to be hand-collected from proxy statements. To minimize data-collection costs, Shivdasani matched each target firm to a similar-sized nontarget firm from the same industry and restricted his sample to these firms. The restriction that each target have a nontarget in the same industry reduced the sample to 214 targets and 214 nontargets.

Shivdasani was able to obtain proxy statements for 193 hostile targets and 194 nontargets. From these proxy statements, he obtained detailed information on the management and board of each company. This information is presented in tables 1, 2, and 3 of Shivdasani (1993) and summarized in my table 1.

As is common in this literature, Shivdasani breaks up the board into three categories: outsiders who are unaffiliated with management, outsiders who are affiliated with management such as investment bankers and family members of management, and insiders. For both the sample of hostile takeover targets and the control sample, boards contain roughly 60% unaffiliated outsiders, 10% affiliated outsiders, and 30% insiders.

Shivdasani calculates the average number of other directorships held by each outside director. The average number is slightly higher for the nontargets than for the targets, although the difference is not particularly large (1.04 vs. 0.90) and only marginally significant.

Table 1
Corporate governance characteristics of takeover targets and nontargets.^a

Variable	Average value for hostile takeover target subsample	Average value for nontarget subsample
Percentage of board that are unaffiliated outsiders	59%	56%
Percentage of board that are affiliated outsiders	11%	11%
Mean number of additional directorships per outside director	0.90	1.04
Ownership by CEO ^b	2.03%	7.19%
Ownership by inside directors other than the CEO ^b	0.58%	1.77%
Ownership by affiliated outside directors	0.88%	1.27%
Ownership by unaffiliated outside directors ^b	0.82%	1.95%
Ownership by affiliated blockholders ^b	3.23%	7.30%
Ownership by unaffiliated blockholders ^b	10.88%	5.57%

^aThis table is drawn from tables 2 and 3 of Shivdasani (1993), who analyzes a sample of 214 targets of hostile takeovers between 1980 and 1988 and a matched sample of 214 nontargets.

^bThe average value of this variable for the hostile takeover target subsample is significantly different from the nontarget subsample at the 5% level.

The mean ownership levels of the CEO as well as by each type of director is noticeably higher for the nontargets than for the targets. CEOs of nontargets own 7.19% of the stock of their companies, compared to 2.03% for targets. Inside directors other than the CEO in nontarget companies own an average of 1.77% vs. 0.58% for target companies. The comparison for affiliated outside directors is 1.27% vs. 0.88% and for unaffiliated outside directors is 1.95% vs. 0.82%.

Ownership levels by outside blockholders depend on whether or not the blockholder is affiliated with management. Affiliated blockholders have higher holdings in nontarget firms (7.30% vs. 3.23%), while unaffiliated blockholders have higher holdings in target firms (10.88% vs. 5.57%).

3. Empirical specification

Since all of these corporate governance variables are correlated with one another, one must use a multivariate approach to the problem of estimating the marginal effect of any one variable on takeover probabilities, holding the other variables constant. In addition, estimation is complicated by the fact that Shivdasani does not choose his sample randomly from the population of firms. Instead, he intentionally oversamples the fraction of hostile takeovers in his sample. Therefore, the coefficients he estimates from a logit equation predicting hostile takeovers will differ from the coefficients he would have estimated with a random sample of firms. This sampling technique is called 'choice-based' sampling, and there is an easy way to adjust the coefficients so we can more easily interpret them. For problems like this one where one must decide which data to collect in order to maximize statistical power, it is clearly a sensible approach. The adjustment to the coefficients is straightforward and is explained in Shivdasani (1993).⁴ The predicted probabilities I discuss below are all adjusted for the choice-based nature of the sample, so that they can be interpreted as the predicted probability of a firm with certain characteristics receiving a hostile takeover bid between 1980 and 1988.

4. Results

The estimated logit equations are presented in table 4 of Shivdasani's paper. However, given that logit coefficients are difficult to interpret without some transformation, I think a more useful way of discussing the data is through examination of the predicted probabilities from the equations. Shivdasani presents these numbers in table 5. I've condensed this table to focus on what

⁴See also Palepu (1986) for more discussion on methodological issues in predicting takeover targets and Manski and McFadden (1986) for a general treatment of choice-based sampling.

Table 2

Estimated probabilities of a hostile takeover as a function of governance characteristics (probability of hostile takeover with all variables at their means = 0.2453).^a

Variable	Value at 10th percentile	Value at 90th percentile	Probability at 10th percentile	Probability at 90th percentile
Equity ownership by CEO	0.0008	0.1501	0.3491	0.0934
Equity ownership by inside directors other than the CEO	0	0.0287	0.2699	0.2125
Equity ownership by affiliated outside directors	0	0.0305	0.2526	0.2260
Equity ownership by unaffiliated outside directors	0.00009	0.032	0.2714	0.2137
Additional outside directorships held by outside directors	0.111	2.083	0.3363	0.1571
Ownership by all unaffiliated 5% blockholders	0	0.2256	0.1905	0.3629
Ownership by all affiliated 5% blockholders	0	0.1799	0.2734	0.1855

^aThis table is drawn from table 5 of Shivdasani (1993), who analyzes a sample of 214 targets of hostile takeovers between 1980 and 1988 and a matched sample of 214 nontargets. The estimated probabilities are taken from column 2 of table 4 from Shivdasani (1993) and are adjusted for the choice-based nature of the sample chosen.

I consider to be the most important results from it and present them in my table 2.

The first four rows of my table 2 demonstrate the stock ownership by top management and the board has an extremely large impact on the probability of a takeover. The largest effect is from the CEO, as decreasing the CEO's shares from the 90th percentile to the 10th percentile increases the probability of a takeover by a factor of almost 4, from 9.3% to 34.9%. Similar effects are observed for ownership by the board, although they are not nearly as large. There are two explanations for the effects of ownership on takeover probabilities which are not mutually exclusive. As argued by a number of authors, stock ownership could increase corporate performance, and hence reduce the desirability of a takeover. However, the observed relation between ownership and takeover probabilities could potentially have nothing to do with corporate performance. If managers enjoy some rents from their jobs, they will have an incentive to resist all takeovers, and their resistance is more effective when they already control a large block of votes. In this case, we would expect in equilibrium to observe firms where management ownership is higher to be taken over less often.

The fifth row of my table 2 suggests that additional outside directorships play a large role in determining the probability of takeover. Decreasing the number of directorships from the 90th percentile to the 10th percentile has a very large

impact on the predicted probability of a takeover; it rises from 14% to 37%. Additional directorships could conceivably proxy for the quality of the directorships. If 'better' directors, who are asked to serve on more boards, run their companies better, we might expect them to be taken over less often. However, I am a little reluctant to think that the number of outside directorships is a great proxy for the quality of directors. An alternative explanation is that directors with market value in the market for directorships resign during bad times. The only potential directors willing to serve at a badly-run firm that is likely to be taken over are those who do not have the opportunity to serve at other companies that are healthier and hence less likely to run into problems with director liability.

The final two rows of my table 2 show the estimated effect of blockholdings on the probability of a takeover. The results suggest that the nature of the effect depends strongly on whether or not the blockholder in question is affiliated with the manager or not. Ownership by unaffiliated blockholders is associated with a large increase in the predicted probability of a takeover while ownership by affiliated blockholders is associated with a large decrease in the predicted probability of a takeover. This result suggests that blockholders perform two roles: First of all, when blockholders are independent of management, they can help in performing a monitoring role by assisting a potential raider acquire the company. Second, as has recently been suggested by Barclay, Holderness, and Pontiff (1991), the blockholder can sometimes share in the private benefits of managing a company, and have an incentive to help resist a potentially value-increasing acquiror.

It is often more difficult than one would imagine to convey the magnitudes of parameters in relatively complicated logit equations. The primary way that this task is usually accomplished is, as I've done above, by looking at the change in the predicted probability resulting from a change in one explanatory variable, with the other variables held constant. In practice, independent variables are often correlated with one another; this is clearly true for Shivdasani's equation. High CEO ownership tends to be correlated with high board ownership and high ownership by affiliated blockholdings. These variables are also probably correlated with the average number of additional directorships per outside director and the level of unaffiliated blockholdings. If we are interested in how the takeover probabilities of actual firms differ during the sample period, looking at predicted changes in takeover probabilities when only one variable changes can potentially be misleading because in practice the explanatory variables tend to move together.

Shivdasani addresses the issue by examining the unconditional takeover probabilities for firms with differing values of the explanatory variables. The effects are quite large. The probability of a takeover (not conditional on values of the other variables in the equation) rises by about a factor of 8 when CEO ownership is decreased from the top decile to the bottom decile. The effects of

changing the other variables on takeover probabilities are also quite dramatic. This alternative way of examining the data illustrates once again that governance characteristics have a large impact on takeover probabilities.

Shivdasani spends a great deal of effort checking the specification of his equation, especially regarding omitted variables and alternative transformations of the variables he did include. While my discussion has concentrated on one particular estimated equation, the second column of table 4, similar results hold for variations of this equation which Shivdasani reports in this and earlier versions of the paper. These specification checks suggest that the results are not due to an omitted variable or an econometric misspecification.

5. Summary

To summarize, I feel that the author has taken an interesting problem and done a nice job with it. Having spent some time going over the evidence in the paper, I feel that the equations in the paper measure reasonably well the effect of corporate governance structures on takeover probabilities. The most plausible explanation for this effect is what I described as Proposition 2a, that suboptimal governance structures performed badly and were replaced through a hostile takeover.

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