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Takeover Defenses and Managerial Incentives under Alternative Legal Regimes

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ABSTRACT

We consider managerial incentives in two legal regimes: Shareholder Choice and Management Discretion. In a management discretion regime, managers are effectively able to use takeover defenses to reject hostile bids. In a shareholder choice regime, the use of takeover defenses is restricted and shareholders are ultimately able determine whether a hostile bid should be accepted. We argue that in a shareholder choice regime, informed managers are able to use the protection accorded by the business judgment rule to reject positive NPV investments which they know should be accepted if those investments might raise the possibility of a hostile bid. The acquisition of new assets can lead to a hostile bid if those assets are valuable to potential bidders. The rejection of these investments is effectively a takeover defense. Since managers also reject negative NPV investments the equilibrium we describe is a pooling equilibrium in which outside investors never learn if the managers were acting in shareholders interest when they chose not to make the investment. Since the assets are never acquired it is also impossible to learn from the firm's financial results if the assets represented a positive NPV investment. In a management discretion regime, managers do not have to distort investment choices to avoid takeovers because other deterrents are available.

1. Introduction

Informational issues are at the core of any analysis of the allocation of power between shareholders and directors. It is generally agreed that managers know more than outside investors as to how to conduct the business and affairs of the corporation; a principle that provides the basis for the business judgment rule presumption that protects directors' ability to make largely unchallengeable business judgments.[1] No one contests the conclusion that the choice among corporate policies must to be made by managers and not by shareholders. It is generally, however, also agreed that the separation of ownership and control means that managers may act for their own private benefit rather than as faithful fiduciaries and thus not maximize the value of the corporation. Jenson and Meckling (1976) and Williamson (1975). This creates the classic dilemma of corporate governance: if managers are given unconstrained authority they may act in their own interest, yet if their authority is too constrained by less informed shareholders, managers may be unable to adopt the corporate policies that they know are best for the corporation. Bebchuk (1982), Gilson (1981), Gilson (2001).

The business judgment rule applies to the decisions managers make in the course of the firm's everyday operations. Decisions involving contested control transactions (e.g. hostile tender offers) are not, however, covered by the business judgment rule. The allocation of decision making authority in such cases is determined in the courts. The

[1] § 141(a) states that "The business and affairs of every corporation … shall be managed by or under the direction of a board of directors" Delaware General Corporation Law. Under Delaware case law, "The business judgment rule is … a presumption that in making a business decision, the directors of a corporation acted on an informed basis; in good faith and in the honest belief that the action taken was in the best interests of the company. Absent an abuse of discretion, that judgment will be respected by the courts. The burden is on the party challenging the decision to establish facts rebutting the presumption." Aronson v. Lewis, 473 A.2d 805 (Del. 1984).

legal regime in which managers effectively are able to make the final decision about whether an offer for the firm should or should not be accepted is referred to as one of "management discretion." [2] The alternative legal regime in which shareholders effectively decide the outcome of control contests is referred to as a "shareholder choice regime." [3] The rules governing takeover defenses have changed over time.[4]

Those who favor shareholder choice commonly argue that if managers rather than shareholders are able to decide whether an unsolicited bid for the firm should or should not be accepted, they will reject offers that shareholders prefer in order to retain the private benefits of control. This will make it possible for managers to extract more private benefits in a management discretion regime than they could under shareholder choice.[5] It can also be argued that the informational advantages of managers disappear

[2] The management discretion position has been most strongly and persistently advanced by Lipton (1979), and later Lipton and Rowe (2002). We interpret the position to mean that managers can reject a hostile bid after they duly consider the offer and determine that the offer is not in the best interest of its shareholders. In operation, such an offer is rejected by the entire board of directors only after it has been considered and rejected by a committee of outside directors who relied on the advice of investment bankers (who determined that the offer was unfair) and outside council.

[3] The original supporters of the shareholder choice model were Gilson (1981), Easterbrook & Fischel (1981) and Bebchuk (1982). Later articles taking this position include, Bebchuk (2002), Coffee (1997), and Gordon (1997). The shareholder choice position can, for expositional purposes, be identified with the Chancery Court's holding in *City Capital Associates v. Interco, Inc*., 551 A.2d 787 (Del.Ch. 1988).. The Chancery Court reasoned that target management could use its poison pill to hold off the immediate clutches of an unwanted suitor. But the firm would eventually have to be sold unless the shareholders could be quickly convinced to value the current earnings prospects of the firm more highly.

[4] Shareholder choice, as stated in the *Interco* rule was the Delaware's Chancery Court's takeover defense law until it was overturned in *Time-Warner*. Although *Time-Warner* still applies, it is understood that takeover defenses cannot preclude an ultimate vote by the shareholders should a persistent bidder wish to mount a proxy contest. It can be shown that, even in this case, the resulting rule can either be viewed as shareholder choice or management discretion.

[5] There is a large literature on the market for corporate control in which takeovers are viewed as a means of disciplining managers who fail to act in the shareholders interest. It is this discipline that prevents managers from extracting large private benefits in a shareholder choice regime. An early summary of the literature on corporate control is Jarrell, Brickley, and Netter (1988). See also Jensen (1988). Marris (1963) is a seminal reference in this literature. A more recent discussion is Kini, Kracaw and Mian (2004). Grossman and Hart (1980) argue that, because bidders are unable to capture the gains to improved management, takeovers are an ineffective device for disciplining managers who fail to maximize firm value. Shleifer and Vishny (1986) demonstrate that the Grossman-Hart argument loses force when the bidder initially owns a significant stake in the firm. A more recent paper Marquez and Yilmaz (2005) revisits the issue raised by Grossman and Hart. Finally, Scharfstein (1988) explicitly treats the threat of a

in the midst of the disclosure-rich environment of takeover battles. For the supporters of shareholder choice, the conclusion implied by these arguments is that the decision to accept or reject an unsolicited bid for the firm ought to be made by a shareholder vote rather than by managers. See Bebchuk (2002).

The point of this paper is to demonstrate that the above arguments ignore the effects on managerial incentives created by shareholder choice. We show that managers will, in advance of a bid, have an incentive to use the protection provided by the business judgment rule to make corporate policy choices that are not in the shareholders' interest but which do reduce the chance of a bid. Furthermore we demonstrate that they will be able to do this in a way that is undetectable by outside investors. The need to avoid ultimate discovery by the financial market imposes a restriction that narrows considerably the range of techniques that provide managers with effective protection against hostile bids.

If the financial markets discover that the managers have chosen corporate policies that are intended to reduce the likelihood of a bid--policies that otherwise are not in the interest of shareholders--the firm will be punished through a reduction in firm value. At the lower price, which compensates for the loss of firm value, the firm will be as susceptible to unsolicited takeover bids as before the policy was implemented. Even if the stock price falls by less than the loss of firm value, the directors (a term which we use interchangeably with managers for purpose of this paper) may face proxy challenges by activist shareholders.[6]

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takeover as a disciplinary device for use in solving the agency problem existing between managers and shareholders.

[6] There is a nascent literature exploring the characteristics of management policies that both can be made under the protection of the business judgment rule and serve as successful takeover strategies. See our

We explore in this paper a class of corporate policy decisions that avoids these shortfalls. They are the corporate policies that *are not taken*, because such policies are likely to increase the probability of a hostile bid compared to implemented policies. These decisions avoid disclosure because they are not subject to the Securities and Exchange Commission's disclosure requirements. Hence they are like the proverbial "dogs-that-don't-bark."

What are such policies? Numerous examples can be cited, and they are likely to be among the policy options facing the managers. For example, investing in a specialized technology that makes the firm's equipment compatible with that of a supplier or buyer will create synergies that make the firm more likely to be highly valued by the supplier or buyer. Joint ventures are investments that have the intended feature of creating synergies. Such corporate policies have a similar element; they lead to investments that create synergies by better integrating the firm with the operations of a buyer, seller, or competitor.

Our formalization of this argument is presented in a simple theoretical framework in which the classical dilemma arises naturally. The distinguishing feature of the model is its focus on an informed management's choice of a corporate policy under the protection of the business judgment rule. Using this simple framework, we are able to provide a more complete discussion of the conditions under which a management

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earlier papers Wachter (2003) and Kihlstrom and Wachter (2003), where we argued that a management strategy of "managing to the market" can serve as a successful takeover deterrent. The paper most similar to this paper and our earlier work is Pagano and Volpin (2005). They argue that "generous employment policies" such as long term labor contracts can result in a takeover resistant workforce that provides managers with protection against hostile bids. The conditions under which the Pagano-Volpin strategies prove attractive to management are the same as those we identify in the context of our model. See also, Arlen and Talley (2003).

discretion legal regime is likely to be more or less shareholder wealth maximizing than a shareholder choice regime.[7]

2. The Model

2.1 Introductory Comments

In our model, managers operating in a shareholder choice regime have an incentive to adopt corporate policies that avoid or reduce the probability of a hostile bid even if by so doing they fail to act in the interests of shareholders. Critically, even though such policies impose an agency cost on the firm, the market will never detect it. With the aim of formalizing this argument we consider a situation in which managers have an opportunity to implement a significant new corporate policy by making a substantial investment. Nothing turns on the corporate policy being identified with a substantial corporate investment, but we think it useful as an expositional device. The arrival of the new corporate policy opportunity is assumed to be unanticipated in the equilibrium that prevails before it arises. In this initial equilibrium, all firms are correctly valued in the market and there is no outstanding private information. Because the new opportunity is unforeseen, its expected value is not included in the present value of the firm's existing growth opportunities. Once it arises, the corporate policy opportunity is a

[7] It has been argued that the pressure created by takeovers can give managers an incentive to behave myopically. Specifically it is argued that, in order to avoid hostile bids, managers will choose corporate policies that yield high short run returns over higher NPV projects with high long run but low short run returns. Stein (1988) provided a formalization of this argument. This agency problem differs from the one we are investigating here and we are not arguing that there is an incentive for managers to behave myopically.

one-time event. Thus, if the investment is not made and the policy is not implemented, the opportunity will disappear.[8]

Managers want to avoid takeovers because they result in the loss of the private benefits (in excess of their opportunity wage) that the managers extract from the firm.[9] In addition to these private benefits, the managers' executive compensation also includes their percentage interest in the firm. This is treated as exogenous and is determined by the managers' stock ownership and the number of options they have been awarded. The private benefits extracted by the managers are treated as endogenous. We also assume that, although the private benefits are known to the market, they cannot be controlled by the shareholders contracting with the managers.

In the initial equilibrium, there are no existing takeover opportunities. As just noted, the market knows the private benefits extracted by the firm's managers and these are priced into the value of the corporation. Consequently, whatever hostile tender offers are profitable at the current array of market prices, available technologies, economic outlook, etc. have occurred. Of course, a bid will be profitable only if the bidder can cover the cost of bidding. The fact that no bids are profitable in the initial equilibrium implies that the private benefits extracted by managers cannot exceed this cost. Thus, in a shareholder choice regime, managers know the cost of a bid and limit the value of the private benefits they extract to equal that cost. In this way they extract the maximum possible private benefit consistent with not becoming a target. In a management

[8] It is not necessary to assume that the investment decision cannot be revisited. What is necessary is to assume that if it is reconsidered it is worth significantly less than at the time it initially arises. The examples of synergistic corporate policies that we cite in the text are all likely to lose value if not implemented when it first becomes available.

[9] In our analysis, the manager's opportunity wage is simply treated as salary and is a subtraction from the firm's cash flows. Thus, our notation does not take explicit account of it.

discretion regime, the value of the private benefits is limited in our model, not by the market, but by the fiduciary duty obligations of the directors.[10]

Once the new policy opportunity arises, outside investors know that it is being considered, but they know less than managers about its profitability. The policy is implemented if the managers, using their superior information, decide to make the required investment. Although the investors don't know as much as the managers, they do know that the managers are better informed.

If the policy is adopted by management, the outside shareholders quickly learn from the firm's financial performance if the managers made the correct decision. Critically, however, when the policy is not adopted and no new assets are acquired, the firm's financial performance provides no information to outside investors about the wisdom of the managers' decision.

If the policy is implemented, a takeover attempt arises if the potential bidder is able to obtain a higher return from the new assets than current management. If a bid takes place, it emerges after the investment decision is made. The case of primary interest is when the bid arises because of the existence of synergies between the new investment and the assets already controlled by the potential bidder. The possibility that a bidder will appear because of these synergies implies that, if the managers implement the new policy by making the investment, they face the risk of losing control of the firm and the private benefits of control. However, this is a risk only in a shareholder choice regime. It is the desire to avoid this risk that can lead the managers to fail to implement the policy

[10] The ability of the managers to extract private benefits is limited, not only by the market for corporate control, but also by the fiduciary duties owed by the managers to the firm and thus to its shareholders. In this paper we assume that managers extract those private benefits that would be interpreted by the Delaware courts as not in violation of the directors' fiduciary duty of loyalty.

even when they know that the policy is profitable. In a management discretion regime, on the other hand, managers make the investment knowing that they have the power to defeat a hostile bid. This then is the difference between the two legal regimes in our model: in shareholder choice, some profitable investment opportunities will be foregone to avoid the risk of causing a bid to emerge, while in management discretion, those profitable opportunities will be adopted.

We assume that, when a bid occurs, the price offered by the bidder equals his true valuation of the firm net of bidding costs. Again this is an assumption that can be relaxed at the cost of some complication in the arguments but without affecting the conclusions. Finally, we also assume that because the new investment opportunities are unanticipated, it is impossible for investors to value them in advance. As a consequence, the agency problem we have identified has no impact on the initial equilibrium. We return to a fuller discussion of this point in Section 3.[11]

2.2 Formal description of the model

As noted above, we start from an initial equilibrium in which all firms are correctly valued and there is no outstanding private information. The market, in particular, knows the value of the private benefits extracted by the managers and these

[11] We do assume that, in the initial equilibrium, investors and managers are aware that new corporate policy opportunities can arise. In addition, they can also be aware that the agency problem we describe can occur when new opportunities do emerge. The fact that these opportunities cannot be anticipated by investors implies that the distribution of outcomes and the possible costs of the agency problem cannot be estimated with any useful degree of precision. As a consequence, there are no attempts by outside investors to bid for the firm with the aim of taking it private so as to avoid the agency problem. There is, hence, no need for managers to reduce private benefits further to eliminate the possibility of such bids. We are thus, treating the arrival of the new corporate policy opportunity as being one of the many unforeseen future contingencies that ultimately impact the firm and determine its value. The idea that not all future contingencies can be envisioned and prepared for is the basis for seminal contributions of Williamson (1979) and Grossman and Hart (1986), Williamson especially asserts that "In particular, long-term contracts executed under conditions of uncertainty are ones for which complete presentation is apt to be prohibitively costly if not impossible. Problems of several kinds arise. First, not all future contingencies for which adaptations are required can be anticipated at the outset."

are priced into the value of the corporation. At this point, the managers and the market agree that the firm is worth

$$V_n = cf + C - b$$

where

cf = the PV of the future cash flows of the firm's previous investments**,** which includes reinvestment in future growth opportunities at some ROE that is known to the market,

C = the firms' cash on hand,

and

$b =$ the private benefits extracted by the managers.

The initial equilibrium is disturbed when the firm's managers are presented with an unanticipated one-time opportunity to implement a new corporate policy. The implementation of this opportunity requires an investment of *I*. If the investment is made the present value of the cash flows generated by the investment are x which is the realization of a random variable $\tilde{x}$.

We assume that, at the time the investment decision is made, *x* is known to the firm's managers, but not to the market and that the market simply knows $\bar{x} = E\tilde{x}$. We also assume that, although the market doesn't know *x*, it is aware that the managers have the ability to use their knowledge of *x* when they choose to accept or reject the investment opportunity. Thus, the firm's shareholders know that the manager is better positioned to make the correct investment choice than they are. Since this is a decision that is being made in the normal course of business, the business judgment rule enables the managers to make this decision without shareholder oversight.

If the investment is made, the firm is worth

$$V(x) = cf + C + x - I - b.$$

If the managers fail to make the investment, the firm's value remains V_n.

When

$$x - I > 0,$$

the managers know that the corporate policy should be implemented since the investment has a positive net present value ($NPV > 0$). On the other hand, the investment has a negative net present value when

$$x - I < 0.$$

In that case, the managers know that investment opportunity should be forgone. The financial market may agree or disagree with the managers. They may believe that the investment opportunity should be forgone because

$$\bar{x} - I < 0.$$

Or they may believe that because

$$\bar{x} - I > 0$$

the investment is therefore worth making. In spite of this difference of opinion, the firm's shareholders also know that the manager's opinion is more informed.

If the investment is made, the managers value the firm at $V(x)$ and, initially, outside investors value the firm at $V(\bar{x})$. We assume, however, that outside investors quickly learn from experience and soon know if the managers' decision to invest was correct. After this initial period of learning ends, the market value of the firm is $V(x)$.

Critically, as we shall see, when the new corporate policy is not adopted, the assets required for its implementation are never acquired and outside investors never

learn what the managers know about the policy's profitability. In that case, outside investors continue to believe that if the investment had been made the firm would have been worth $V(\bar{x})$. But since the investment is not made, the managers and the market agree that the firm is, in fact, worth V_n and the outside investors never know if the managers' decision not to invest was correct. That is, the firm is correctly valued on its existing corporate policy and the current and future assets of that policy. In spite of this, the true value of the corporate policy option that has become available but rejected is not and never will be incorporated into that value. Furthermore, outside investors never learn if the managers acted in the shareholders' interest when they decided not to adopt the new policy by not making the investment.

Managers are assumed to make the decision that maximizes their compensation. Since managers own a share of the firm, their interests are partially aligned with those of the shareholders. We let

s = the fractional share of the firm owned by the manager.

The managers' interests are not completely aligned with those of shareholders because, as managers, they also extract private benefits, b, that reduce the value of the firm.

The managers' total compensation is, therefore,

$$b + sV$$

Allowing for the fact that private benefits are likely to differ depending on whether the legal regime is one of shareholder choice or management discretion, b can equal either b_s or b_m, where

b_s = the private benefits extracted by the manager under shareholder choice

and

b_m = the private benefits extracted by the manager under management discretion,

A conclusion of the debate over shareholder choice versus management discretion is that the private benefits associated with management discretion are larger than the benefits the managers are able to extract in a shareholder choice regime. We assume, therefore, that

$$b_m > b_s .$$

The rationale is that managers set b_s below the cost that a hostile bidder would have to pay in transaction costs to takeover the firm. If managers extract benefits in excess of those costs, the resulting reduction of the firm's value will attract hostile bidders and the managers will lose control of the firm and the corresponding private benefits. Thus we can interpret b_s as the expected cost of a takeover bid. This means that whenever a bidder values the firm at an amount that exceeds its market value by more than b_s, a bid will occur.

What sets the value of b_m? As discussed above, in a world where managers can just say no to tender offers, but still owe fiduciary duties to the corporation, b_m would be determined by what private benefits managers could realize without running afoul of their fiduciary duties.

Our exposition of the agency problem begins by introducing simplifying assumptions. The resulting model is highly stylized and is intended to clearly illustrate how the problem can arise. It is to be expected that when the agency problem actually occurs the setting will be more complex, but the essential features that give rise to the problem will be as described in our simple model.

We assume that the corporate policy generates one of two possible outcomes, one yielding a high *x,* that is, a positive NPV, and the other resulting in a low *x* and thus a negative NPV. Specifically,

$$x \in \{x_L, x_H\}$$

where

$$x_L < x_H$$

and where

$$x_L - I < 0 < x_H - I.$$

Most importantly, we assume that when the firm adopts a new corporate policy it may increase its attractiveness to a potential bidder. This may happen because the new policy creates an array of potential synergies and these synergies are recognized by potential bidders. It may happen simply because the potential bidders are better able to realize profits from the investment required to implement the new corporate policy. For simplicity, we discuss this case using the synergies interpretation. For the same reason, we assume that the value of the synergies created for the bidder by the investment are the realization of a random variable $\tilde{\sigma}$, where

$$\tilde{\sigma} \in \{0, \sigma_H\}$$

$$\sigma_H > 0,$$

and

$$\Pr(\tilde{\sigma} = \sigma_H | \tilde{x} = x_H) = \varphi > 0.$$

The term $\varphi > 0$ represents the probability that positive synergies are created for a potential bidder by the managers' new corporate policy.

Whether $\varphi > 0$ generates an actual hostile bid will vary depending upon whether the legal regime is shareholder choice or management discretion.

2.3 The Case of Shareholder Choice

In this section, we describe the conditions under which the agency problem created by a shareholder choice regime arises. In the setting we are considering, the agency problem arises because managers choose not to invest in the new corporate policy even when they know that the investment has a positive NPV.

The equilibrium we describe is formally a signaling equilibrium in which the managers' investment decision is potentially a signal that conveys what he knows about the investment's profitability. In a separating equilibrium, a decision to invest would be interpreted as a signal that the manager knew that the NPV of the investment was positive and a decision not to invest would be interpreted as a signal that the manager knew the NPV of the investment was negative. When the investment is made and new assets are acquired, experience would soon enable the shareholders to determine if the decision to invest and the signal the decision sent were correct. However, if an investment not made should have been, investors would never learn if the signal sent by the decision not to invest is correct. In spite of this, a separating equilibrium could still arise if the managers always have an incentive to make the correct investment decision. In fact, at the end of this section, we will describe the conditions required for the separating equilibrium to arise.

The equilibrium in which the agency problem we have been discussing arises is not a separating equilibrium but a pooling equilibrium, in which managers choose never

to invest even if they should, i.e., even if they know that $x = x_H$. In this equilibrium, the managers' failure to implement the new corporate policy is uninformative. As a result, in the pooling equilibrium case, the outside investors' initial beliefs don't change when they observe that managers fail to invest. Critically, since investors have no basis for knowing if an investment never made should have been, investors never learn if the signal sent by a decision not to invest is correct, and their beliefs are never in fact updated.

In this pooling equilibrium, investors never actually observe the managers make the investment but, we suppose, that if they did, they would believe the investment was profitable, i.e., that $x = x_H$. This is the natural expectation for all of the involved parties to have since, as we have noted, when assets are acquired, there are financial results that enable the shareholders to determine if the decision to invest was correct.

The pooling equilibrium will arise only if the managers have an incentive not to invest regardless of whether $x = x_H$ or $x = x_L$. In what follows, we will describe the conditions in which this is the case. In describing this equilibrium, we assume that the managers believe that outside investors beliefs don't change when the managers fail to invest, but outside investors would believe that $x = x_H$ if the managers did invest.

First let's observe that managers will clearly prefer not to invest when they know that the NPV of the investment is negative. In that case, $x = x_L$ and since managers own a fraction of the firm, they will not make investments that reduce the value of the firm. Here there is no misalignment of interest.

The crucial case is when $x = x_H$ and managers know that the investment has a positive NPV. In that case, a decision to make the investment will raise the value of the managers' own shares as well as those of other investors. But when as assumed above,

the investment also creates the risk of a takeover and a loss of control by managers, they run the risk of losing private benefits when they make the investment. The managers will fail to make the investment when $x = x_H$ if the increase in the value of their shares' is exceeded by the expected value of the private benefits they might lose. In the framework provided by our example, the exact condition is

$$\varphi b_s > s\left[\left(x_H + \varphi\sigma_H\right) - I\right].$$

This condition asserts that, when $x = x_H$, the corporate policy opportunity is forgone if the managers receive high private benefits (even in a shareholder choice regime), and the probability of synergies arising out of the potential investment is also high. It must also be true that the managers' share of the expected value of the investment is small. This of course happens if the fractional share of the firm held by the managers is small. It is also true if the expected value of the innovation, including the expected value of the synergies is low. If the managers' stake in the firm is high or their interests are aligned with shareholders and the agency problem fails to arise. The same is true if the expected value of the synergies is high or the project is simply a highly positive NPV project.

We now proceed to derive this condition formally. Suppose first that the managers were to choose to invest when $x = x_H$. Then the market would value the firm is

$$cf + C + x_H - I - b_s.$$

In this expression, b_s is subtracted because the market knows the value of the private benefits extracted by the managers.

In the event that $\tilde{\sigma} = \sigma_H$ the bidder would value the firm at

$$cf + C + (x_H + \sigma_H) - I$$

and make a bid at that price minus the cost of a bid which is b_s. The bidder is thus willing to bid

$$cf + C + (x_H + \sigma_H) - I - b_s .$$

The bid exceeds the market value of the firm by the value of the synergies. In a shareholder choice regime that bid cannot be rejected and the managers would lose control of the firm. In that event, the managers' compensation would be

$$s[cf + C + (x_H + \sigma_H) - I - b_s].$$

That is, the managers' compensation would only be the value of their investment in the firm and private benefits b_s would be lost

Recall now that with probability $1-\varphi$, $\tilde{\sigma} = 0$ and no bid occurs. In that case, the managers would retain their private benefits so that their compensation would be

$$b_s + s(cf + C + x_H - I - b_s).$$

When the managers know that $x = x_H$ and invest, they do not yet know if the synergies actually will be generated for the bidder. Thus, the expected compensation of the managers when they invest is

$$(1-\varphi)b_s + s[cf + C + (x_H + \varphi\sigma_H) - I - b_s].$$

If the managers choose not to invest their compensation is simply

$$b_s + s(cf + C - b_s).$$

The managers will choose not to invest when $x = x_H$ if the expected compensation associated with not investing exceeds the expected compensation earned

by investing. Using the expressions just obtained for the managers' expected compensation when they invest and when they don't, we obtain the condition

$$\varphi b_s > s\left[\left(x_H + \varphi\sigma_H\right) - I\right].$$

When the above condition fails, the pooling equilibrium does not exist and, as a result, the agency problem does not arise. In this case, there is a separating equilibrium in which the managers always have an incentive to act in the shareholders interest. Their motivation for not making the investment when $x = x_L$ is the same in this case as in the pooling equilibrium. When $x = x_H$, the managers are now willing to make the investment because the formal condition that now holds is

$$\varphi b_s < s\left[\left(x_H + \varphi\sigma_H\right) - I\right].$$

When this condition holds, the managers do implement the new corporate policy when $x = x_H$, because the value of the policy to them as shareholders exceeds the expected value of the private benefits that might be lost if they lose control of the firm. In this equilibrium, the bid does take place and is successful when the synergies actually arise. Alignment of interest occurs, because managers have a large enough stake in the firm or because the investment is simply so attractive. As in any separating equilibrium, outside investors always correctly interpret the signal sent by the managers' investment decision. As we demonstrate in the next section, this separating equilibrium is similar to but not the same as the one that arises in the case of management discretion.

2.4 The Case of Management Discretion

Management discretion means that the managers can decide to maintain takeover defenses that prevent shareholders from tendering into the bidder's offer. Since they are no longer concerned about losing control of the firm to a hostile tender offer, the

managers' interests are aligned with those of the shareholders when the firm's corporate policy is chosen. Now, the equilibrium is one in which the managers invest when the NPV of the investment is positive and don't invest when the NPV is negative. The outside investors believe that the managers invest only when the when the NPV is positive.

When the investment's NPV is positive, and the managers invest, they face no risk of a bid and, as a consequence, their compensation is

$$(1-s)b_m + s(cf + C + x_H - I)$$

If they choose not to invest, their compensation is

$$(1-s)b_m + s(cf + C).$$

Since

$$x_H - I > 0,$$

the managers prefer to invest.

When the investment's NPV is negative, and the managers invest, they face no risk of a bid and, as a consequence, their compensation is

$$(1-s)b_m + s(cf + C + x_L - I).$$

If they choose not to invest, their compensation is

$$(1-s)b_m + s(cf + C).$$

Since, in this case,

$$x_L - I < 0,$$

the managers prefer not to invest.

Consequently, when managers can defeat uninvited tender offers, they will adopt whatever corporate policies maximize the value of the firm. This is the major benefit of a

management discretion regime. It occurs because managers own a fraction, *s*, of the firm and making the correct value maximizing decisions poses no threat to their private benefits b_m.

2.5 The Legal Systems Compared

When the corporate policy opportunity has a positive NPV and creates the possibility of synergies for potential bidders, the shareholder choice and management discretion regimes generate different outcomes for shareholders if the private benefits of control are significant and the risk of the new corporate policy actually generating a hostile bid is sufficiently high. Under a shareholder choice regime, the managers choose to avoid the risk of losing their private benefits as the result of a successful hostile bid by choosing not to implement the new policy even though they know they are making a choice that is not in the interests of shareholders. In this case, the shareholders' interest in the corporation is always the value of the corporation under the existing or prior corporate policy, minus the private benefits taken by the managers

$$cf + C - b_s .$$

Under management discretion the corporate policy opportunity is always adopted when it is a positive NPV opportunity, but the hostile tender offer is rejected if it occurs. Hence, the shareholders get

$$cf + C + \mu_H \left(x_H - I \right) - b_m ,$$

where μ_H is the probability of $\tilde{x} = x_H$. The shareholders are clearly better off under management discretion if

$$\mu_H \left(x_H - I \right) > b_m - b_s ,$$

where the left side of the above inequality is the expected value of the investment if it is made when the NPV is positive. This condition means that shareholders are better off under management discretion if the expected benefits from the new corporate policy, ignoring the possible forsaken gains from a potential takeover, exceed the additional agency costs of management discretion.

It should be noted that in both legal regimes the shareholders lose the expected value of the synergies. Under shareholder choice this happens because the investment is never made even when it should be. Hence the opportunity to make use of the synergies does not arise. Under management discretion, the investment is made, but the synergistic bid is rejected. If these bids were not rejected, the firm would be worth

$$cf + C + \mu_H\left(\left[x_H + \varphi\sigma_H\right] - I\right) - b_m$$

to the shareholders. Thus, the total cost of the new agency problem we have identified as arising in a shareholder choice regime is

$$\mu_H\left(\left[x_H + \varphi\sigma_H\right] - I\right),$$

the expected value of the investment opportunity. By switching to a management discretion regime, only part of this agency cost is avoided; namely

$$\mu_H\left(x_H - I\right).$$

What is lost in both regimes is

$$\mu_H\varphi\sigma_H,$$

the expected value of the synergies.

In the comparison of the legal regimes that emerges from the model as described above, the cost borne by shareholders in a managerial choice regime is the increase in the agency costs

$b_m - b_s$.

3. Possible Solution to the Agency Problem

Are there market or contracting solutions to the agency problem we identify or is a management discretion regime truly required to eliminate the problem? The market solution to the problem is a going-private transaction. Going private, of course, eliminates virtually all agency problems and can be expected to eliminate the one we have identified as well. An alternative solution involves contracting between shareholders and managers to eliminate the problem. In order to implement either of these solutions, outside investors must be able to anticipate the agency problem and be relatively well informed about the likelihood of its occurrence and expected cost.[12]

3.1 Going Private as a Solution to the Agency Problem

A market solution to the agency problem would be possible if outside investors were well informed about the likelihood of its occurrence and its expected cost. In that case, the firm's value would be reduced by the expected cost of the problem. This discount creates an opportunity for private equity investors who can pay a premium to buy the firm equal to the expected agency cost. If this were the case, managers would understand that their defensive measures were observable and thus ineffective. The emergence of the agency problem is, however, not easy to anticipate and outside investors will, as a result, have difficulty knowing how much the firm's value should be reduced because of it.

[12] The emergence of the agency problem is like the many contingencies discussed by Williamson (1979) and Grossman and Hart (1986) that are difficult to anticipate and contract for in advance.

For the going-private transaction to succeed, the bidders must also have enough information to put a value on the probabilistic gains they achieve by eliminating the agency problem. If they have that information, bidders will know what premium to pay for the firm. If, however, the determination of this value is elusive, bidders may be unwilling to bid because they do not know the premium they can afford to pay.[13]

If in a shareholder choice regime, outside investors did anticipate the emergence of the potential new investment opportunity and could accurately assess the probabilities we have discussed as well as the probability of the emergence of the investment option, which we denote by ψ . In that case, a bidder who intended to take the firm private could make an expected profit, taking into account the cost of the bid, by buying the firm, making the investment if the opportunity to do so arose and if it was a positive NPV investment. He could then sell the firm if the synergy value of the new assets for another bidder were positive. The expected cost of the agency problem avoided by taking the firm private is

$$\psi\mu_H\left(x_H + \varphi\sigma - I\right),$$

and this minus the cost of a bid is also the profit to the bidder who takes the firm private. Even when outside investors accurately assess the probabilities of the investment opportunity arising, being a positive NPV investment and creating synergies for another bidder, the managers of the firm can prevent a bid by reducing the private benefits by the amount

$$\psi\mu_H\left(x_H + \varphi\sigma - I\right).$$

When

[13] This again follows from the point made by Williamson (1979) and Grossman and Hart (1986) on the possibility of anticipating all future contingencies.

$$\psi\mu_H\left(x_H + \varphi\sigma - I\right)$$

exceeds the cost of a bid the managers cannot prevent the firm from being taken private in the initial equilibrium even if they reduce the private benefits they extract to zero. In that case, the firm will be taken private and the agency problem will fail to arise. The effect of this reduction in the private benefits extracted by managers is a reduction in the traditional agency cost borne in a shareholder choice regime. It does not eliminate the agency problem we have identified but it does reduce the total agency cost.

Note, however, that when the emergence of the new policy opportunity is "unanticipated" and investors are unable to accurately assess the expected agency cost,

$$\psi\mu_H\left(x_H + \varphi\sigma - I\right),$$

in advance, it will be impossible for private equity bidders to know what price to pay for the firm. In such a situation, taking the firm private becomes ineffective as a device for eliminating or reducing the impact of the agency problem. Also, as we noted earlier, the outside investors' inability to accurately assess the expected cost of the agency problem arising under shareholder choice implied that the potential for the problem to arise had no impact on the initial equilibrium.

The assumption that the investment opportunity is a one time opportunity that is lost if the investment is foregone is also important. If it were possible to revisit the decision to make the investment at a later time, a bidder who had observed the manager's decision not to invest could take the firm private, learn what managers know about the investment and make the investment if it were a positive NPV opportunity. In that way they could realize the expected gains

$$\mu_H\left(x_H + \varphi\sigma - I\right).$$

3.2 Contracting Solutions to the Agency Problem

The inability to anticipate the agency problem makes it difficult for shareholders to eliminate it by contracting with the firm's managers. But even if they can be anticipated, the agency problems we are discussing are resistant to contractual solutions for another reason. Here again, the key factor is the pooling equilibrium; that is the shareholders never learn whether the foregone investments were NPV positive. Because of this, it is impossible for shareholders to impose *ex post* punishments on managers who fail to invest. The managers may have failed to make the investment, not because of the agency problem, but because it was a negative NPV investment and they were simply acting in the shareholders' interest.

There is one type of contracting solution that merits a separate discussion and that is the use of "golden parachutes" which could compensate the managers for the benefits lost in the event of a hostile bid. Although golden parachutes would appear to have potential as a solution to the problem, we show in the next section that they only serve to increase its cost.

3.3 Golden Parachutes as a Solution to the Agency Problem

Golden parachutes represent a different type of contracting answer. In the section above, the financial market imposes penalties on misbehaving managers by reducing the stock price, thereby making the firm more vulnerable to a hostile takeover. An alternative strategy is for the shareholders to contract directly with the managers to essentially insure or compensate managers for the loss of their private benefits should their firm be taken over. Markets have essentially adopted this strategy, in part, by the widespread adoption of golden parachutes.

In the context of our model, introduction of golden parachutes actually make shareholders worse off by raising the cost of a bid thus worsening rather than resolving the agency cost problem. The defect of golden parachutes as a device for protecting managers is that its costs are observable and hence are built into the private benefits of the managers b. Hence, when used, golden parachutes have the disadvantage of making shareholders worse off while not protecting managers. The reason, in the context of our model is that when bidders are forced to pay for a golden parachute, the cost of a bid rises by the cost of the parachute and this makes it possible for managers to extract even higher private benefits without attracting a bid. In fact, the managers can increase the private benefits they extract by exactly the amount of the parachutes' cost.

Formally, shareholder choice creates an agency problem because managers expect to lose private benefits, b_s, when a hostile bid succeeds. As presented our argument assumes the absence of any "golden parachute," that promise managers compensation in the event of a change in control. If the firm does have a golden parachute in place, the cost of a bid will include its cost, call it p. If b_s are the private benefits extracted when there is no golden parachute, then the private benefits extracted when the cost of a bid includes p will rise to $b_s + p$. This means that the managers are able to capture the value of the parachute in the form of additional private benefits even if no bid occurs. It also means that the private benefits lost if a bid occurs are inflated by exactly the amount of the parachute paid when a takeover occurs. When there is a parachute, the condition under which the agency problem arises under shareholder choice is

$$\varphi(b_s + p) > s\left[\left(x_H + \varphi\sigma_H\right) - I\right] + \varphi p,$$

but this is the same condition under which the agency problem arose without a parachute. This means that under shareholder choice and with a parachute, the managers will misbehave in exactly the same situations as they would if there were no parachute.

The introduction of the parachute also has no impact on the situations in which a bid occurs. Without a parachute a bid occurs when, net of the bidding cost, the bidder's value of the firm exceeds the firm's market value which includes a discount for the private benefits extracted. Since the financial market deducts agency costs from the value of the firm, the market value of the company falls by p. But this fall in the cost of the shares is exactly matched by the rise in the cost of a bid. Since the cost of the bid is subtracted from the bidder's valuation of the firm, net value of the firm to the bidder is unchanged. Hence there will be neither fewer nor more bids.

Those who prefer shareholder choice over management discretion do so because of the fact that managers are able to extract smaller private benefits when faced with the threat of takeovers that cannot be resisted under shareholder choice. Indeed, in our model the private benefits managers can extract in a shareholder choice regime are restricted to equal the cost of a bid. In this setting the advantage of a shareholder choice regime is diminished when the cost of a bid, and the private benefits extracted by managers, are inflated by the introduction of a golden parachute. Formally if we continue to interpret b_s as the cost of a bid excluding the value of the golden parachute, then a golden parachute worth p to the managers raises the cost of a takeover and hence the private benefits extracted by managers from b_s to $b_s + p$. This increase in the private benefits managers extract are an added cost to shareholders under shareholder choice.

The apparent motivation for a golden parachute is lacking in a management discretion regime. But if a golden parachute is introduced into such a regime it should have no impact on the private benefits extracted. In that case, the private benefits are b_m and independent of the cost of a bid. Thus, the increase in the cost of a bid caused by the introduction of a golden parachute has no effect and managers continue to extract b_m . Hence the introduction of a golden parachute in each regime reduces the extra private benefits extracted in a management discretion regime from

$$b_m - b_s$$

to

$$b_m - b_s - p .$$

This, of course, means that the introduction of a golden parachute diminishes the relative attractiveness of the shareholder choice regime while, as we have already noted, yielding no benefits in terms of eliminating the agency problem we have identified as arising in a shareholder choice regime.

4. Conclusion

One of the longest running debates in the corporate law literature is the appropriate legal rule for corporate defenses in the face of a hostile tender offer. Most corporate law scholars have concluded that the Delaware courts, which have accorded considerable protection to management, got it wrong. Surprisingly, no one has compared the alternative legal rules in a model that formally captures the essence of the classical corporate governance dilemma. The model of this paper does incorporate that dilemma because it assumes that managers are better informed than outside investors about the

policy choices that arise in the firm's everyday operations and do exploit their control of the firm by extracting private benefits. Using this model, we are able to analyze a type of agency cost that is rarely discussed in the literature; namely, the ability of managers to make uncontestable policy decisions under the protection of the business judgment rule that make future takeover offers less likely. While such defenses have been discussed in earlier papers, the question addressed here is whether these defenses actually work. This is a more difficult problem than it may appear.

As developed in this paper, the critical issue is to identify those types of corporate defenses that can be adopted under the protection of the business judgment rule while also being undetectable to the financial markets. This first requirement is satisfied by adopting the corporate policy in the ongoing decision making of the firm, prior to the emergence of a hostile bid. The second requirement is much more difficult to satisfy because of the watchful eyes of the financial markets.

There are two genres of takeover defenses that are legally permitted that will also escape financial market retribution. In earlier papers we explored one such strategy, which we named "managing to the market." In that strategy, managers adopt corporate policies that are favored by the market, even when the managers believe that the strategies are not appropriate. Such strategies work because, even after the fact, the market is unlikely to punish managers who have essentially done the market's bidding. The argument, however, requires a some level of financial market inefficiency in that outside investors effectively don't taken into account the fact that managers are better informed.

In this paper, we have explored another strategy. We assume that the market recognizes the managers' informational advantage. But there is a pooling equilibrium in which the mangers' choice fails to reveal what they know that the market doesn't. The resulting defense is, furthermore, non-detectable by financial markets because it is silent. To avoid the watchful eyes of financial markets, the policy choice is and must be like the proverbial "dogs-that-don't-bark." It is, in particular, a decision to not adopt a potential new business policy about which the manager is better informed than the outside investors. There is a pooling equilibrium because the policy choice is not adopted whether the manager knows it should be or not. Thus, non-adoption is entirely uninformative. Hence, the financial markets are unaware of the protective, but suboptimal policy choice, and remain so.

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