A THEORY OF BUST-UP TAKEOVERS AND TAKEOVER DEFENSES

David A. Butz
Department of Economics
University of California, Los Angeles
405 Hilgard Avenue
Los Angeles, California   90024
(213) 825-6838

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Abstract

Many takeover models treat corporations as single individual wholes rather than as bundles of assets each part of which might be affected by a control contest. Here management and shareholders contest the operation of individual assets, and can resolve their differences through negotiations rather than more costly tender offers. Four results emerge. First, large minority shareholders wield ongoing control by employing takeover threats. When credible these threats need not be exercised except when management is incompetent. Second, a hostile tender offer can demonstrate that the bidder has low takeover costs. This provokes management into selling underperforming assets. The bidder then withdraws -- with a sizeable profit. Third, management may employ short-term debt to bond its promises to sell assets. Finally, a large risk neutral shareholder always profits from the purchase of additional shares.

I. INTRODUCTION

Many formal models of markets for corporate control operate from the
mistaken assumption that control contests always involve all-or-nothing out-
comes: either the bidder gains control and restructures the firm, or the
bidder withdraws and the firm remains as it was. A corporation in this
view is seen as a single individual whole rather than a bundle of assets
each part of which might be affected by a control contest. Perhaps even
more important, this literature often fails to recognize management's incen-
tives to restructure the firm in order to preempt takeovers. If a dissatis-
fied shareholder has a credible takeover threat, it should succeed in wrest-
ing concessions from management without resort to costly control contests
even if all internal controls fail.

This paper allows incumbent management and large shareholders to con-
test the operation or sale of individual assets, and gives management the
opportunity to act at the outset to preempt a takeover. It also models
takeover costs formally. In particular, a bidder incurs transactions costs
during the period leading up to an initial tender offer and also in the
period between the initial offer and a change in control. If the bidder
makes an initial offer but subsequently withdraws, it avoids the costs of
completing the takeover even though the costs associated with the initial
offer are sunk.

By making these modifications, the paper offers plausible explanations
for three puzzles which current models do not successfully address. First,
why do we observe costly control contests when shareholders and management
have incentives to resolve their differences through less costly negotia-
tions ("jawboning")? The paper makes several points, but one stands out:
absent information asymmetries, control of the firm changes hands only if

incumbent management is incompetent. Takeover <u>threats</u> discipline managerial shirking. In fact, even where incumbent managers lack the ability to run the firm, they may avert a takeover by selling off some poorly performing assets. In other words, management can relinquish control over a portion of the firm in order to retain control of the remainder.

Second, how can some raiders earn large profits even though they rarely win control of the corporations they stalk? T. Boone Pickens, for example, has never gained control of a major corporation despite numerous hostile bids, yet he and his backers earn high returns. This paper shows how control contests of this type can stem from asymmetric information. Prior to a tender offer, management overestimates the large shareholder's cost of taking control. By committing resources in a hostile tender offer, the bidder shows that it has low takeover costs and stands willing and able to assume control. Management then updates its beliefs and agrees either to restructure the firm or to sell assets to others who can manage them more profitably. Once management takes these actions, the bidder withdraws -- with a sizable profit. To put this another way, Pickens can force firms to restructure by committing resources in an initial tender offer. He need not take control, bear the firm-specific risk that comes with majority ownership, or administer the restructurings personally.

Third, why do firms involved in control contests often take on high levels of debt, <u>and then act to repay the debt quickly</u>? Such behavior is inconsistent with conventional explanations of highly leveraged transactions. If, for example, many takeovers arise because of the tax advantages afforded debt, then why do firms often make extraordinary efforts to repay this debt and thereby give up these advantages? This paper argues that high

levels of <u>short</u>-term debt bond managerial promises to sell poorly performing assets. This argument differs from Jensen's (1986,1988) explanation for debt-financed takeover battles in two key respects: free cash flow plays no immediate role and debt must be repaid quickly.

This modeling framework also sheds light on share purchases by large shareholders. It shows that a risk neutral shareholder unfettered by wealth constraints always profits by purchasing more shares. By buying shares, this shareholder has more to gain from taking control, and its takeover threat becomes more credible. In response, management must make more improvements in the firm. Consequently, risk aversion or wealth constraints must be invoked to explain why large shareholders do not increase their holdings up to the point where they take control.

These results differ markedly from those outlined in related work by Shleifer and Vishny (1986,1988). In their model, large shareholders cannot control management through such internal controls as boards of directors or pay-for-performance contracts. Large shareholders must therefore mount costly takeover contests in order to wield control. Shleifer and Vishny assume that managers either fail to recognize takeover threats or lack the ability to take preemptive actions. Although management and large shareholders can undertake informal negotiations, such efforts lead to only modest improvements, and the size of these improvements does not depend upon such factors as the size of the large shareholder's stake in the firm or the cost of taking control. Shleifer and Vishny also show that for a variety of reasons (discussed in Section IV) large shareholders rarely undertake pre-offer purchases of shares unless they can do so secretly.

In contrast, the sections that follow show that the success of such

informal negotiations depends crucially upon both the size of the large shareholder's stake and the cost of taking control. Dissatisfied shareholders employ takeover threats in their negotiations with management, and these threats become more credible as their stakes rise and as takeover costs fall. Large shareholders' influence comes primarily through ongoing supervision and negotiation rather than costly takeovers, even if all internal controls fail. Takeovers occur only when management is incompetent and must be replaced.

Section II illustrates the results with an example. Section III provides the model. Section IV discusses pre-offer trading by the large shareholder. Section V outlines the role of short-term debt as a means to bond managerial promises to restructure the firm. A conclusion follows.

II. AN EXAMPLE

Consider a firm with three unrelated divisions. Under incumbent management each division has a $20 million market value. Under different management each division would be worth $25 million. Any one of these divisions can be sold without affecting the value of the remaining two. Table 1 lists four possible outcomes. If management retains all three divisions, the firm's value equals $60 million. With a takeover and liquidation, this value rises to $75 million. Intermediate outcomes result from the sale of one or two divisions. Begin by assuming common knowledge.

Table 1 About Here

Management is assumed competent but lacks the incentive to maximize the current market value of the firm. In short, management can make changes to raise the firm's value to $75 million but prefers not to do so. Such

TABLE 1

Outcome	Division #1	Division #2	Division #3
Status Quo	Retained. Worth $20 million	Retained. Worth $20 million	Retained. Worth $20 million
	Total Value – $60 million		
Limited Restructuring	Sold for $25 million	Retained. Worth $20 million	Retained. Worth $20 million
	Total Value – $65 million		
Major Restructuring	Sold for $25 million	Sold for $25 million	Retained. Worth $20 million
	Total Value – $70 million		
Takeover and Liquidation	Sold for $25 million	Sold for $25 million	Sold for $25 million
	Total Value – $75 million		

preferences may arise because of agency problems (Jensen and Meckling, 1976) which are not fully resolved by pay-for-performance contracts, board super-vision, or other internal controls. In this case, management may have con-siderable discretion to pursue ends inconsistent with value maximization.

Alternately, these preferences may stem from differences of opinion regarding the best use of assets. Management may have private information suggesting that its own strategy maximizes future profits, while others (with different information) disagree. Even if management is both correct and fully competent to pursue the strategies proposed by others, the firm's current market value might rise following a change in control.

Initially, suppose one large shareholder (hereafter L) owns 20% of the firm; all other shareholders are atomistic. By gaining control, L can liquidate the firm and raise its value by $15 million. Small shareholders will not sell shares for anything less than their post-takeover value (Grossman and Hart, 1980), so L can reap only 20% of this capital gain.

This shareholder incurs a variety of takeover expenses, including legal and investment banking fees, and the administrative costs of assembling the initial 20% foothold. They do not include the costs of the shares them-selves.[1] These costs are incurred in two stages: L expends $1.25 million to make the initial offer, and another $1.25 million if the takeover is completed. Gaining control therefore involves total costs of $2.5 million. Since L earns $3 million from a takeover, a tender offer is warranted.

The four scenarios that follow illustrate each of the paper's main points. They assume that management prefers not to take actions which maxi-mize the firm's current value, and that internal controls do not adequately align these preferences with those of shareholders.

A. Preemptive Actions to Thwart Takeovers

With full information, management should perceive an imminent takeover and take preemptive measures. In particular, it can sell one division for $25 million. This "limited" restructuring raises the firm's value to $65 million. A takeover would then raise the firm's value by $10 million, of which L would reap only $2 million. Since costs equal $2.5 million, L makes no offer and settles for a final wealth of $13 million.

B. Asymmetric Information and Hostile Tender Offers

Now suppose instead that management believes initially that L can take control only at a cost of $5 million: $2.75 million to launch an initial tender offer and $1.25 million more to complete the takeover. Consequently, it sells no divisions.

To raise the firm's value, L must therefore launch a takeover. Yet once L commits resources toward an initial offer, management recognizes its error. Since L has sunk $1.25 million, however, a limited restructuring no longer suffices. Management must initiate major changes -- by selling two divisions, management can increase the firm's value to $70 million.

At this point, L reconsiders. Completing the takeover costs $1.25 million, and L's gain is only $1 million. Hence, L withdraws with compensation of $12.75 million (20% of $70 million minus costs). L prefers this outcome both to a takeover and to doing nothing, but would have done best if there had been some way to convey takeover costs without resort to a costly tender offer.

C. The Bonding Role of Short-Term Debt

If L makes a hostile offer, management may have little time to respond. What if these divisions are not perfectly liquid? Even if management's

response requires the sale of illiquid assets, it can quickly demonstrate its willingness to restructure by issuing short-term debt and using the proceeds to pay an extraordinary dividend.

Suppose management issues $66 million in short-term debt and pays out the proceeds to shareholders. The firm's balance sheet appears in Figure 1A. The transaction reduces net worth to -$6 million. If management refuses to sell assets, the firm defaults once the debt matures. Furthermore, management cannot avoid bankruptcy by divesting only one of its divisions (see Figure 1B). If management sells a single division, the firm still has a negative net worth (-$1 million), so default remains inevitable.

Figure 1 About Here

To remain solvent, management must sell two divisions and use the proceeds to repay $50 million of the debt at maturity. It can then refinance the remaining $16 million using the last division as collateral (see Figure 1C).

D. Pre-Offer Trading

Reconsider the perfect information scenario of Section II.A. Suppose at the outset L buys an additional 10% stake in the firm. With 30% of all shares, L has a more credible takeover threat. In particular, L now reaps 30% of the gains associated with a change in control. To preempt a tender offer, management must sell two divisions rather than one, and the firm's value rises from $60 to $70 million.

When purchasing this 10% stake, suppose L commits to make no further secondary market purchases (but retains the option to make a tender offer). Then other shareholders can infer the firm's final value -- $70 million -- and stand willing to sell their shares to L on this basis. In short, L can

FIGURE 1A

ASSETS	LIABILITIES
3 Divisions (worth $20 million each)	$66 million short-term debt

FIGURE 1B

ASSETS	LIABILITIES
2 Divisions	$41 million short-term debt

FIGURE 1C

ASSETS	LIABILITIES
1 Division	$16 million long-term debt or equity

raise its stake from 20% to 30% at a cost of $7 million.

L's final 30% stake is worth $21 million. Subtracting the cost of the additional shares, L's final wealth equals $14 million. Had L not bought these shares, management would have sold only one division, and L's final wealth would have been $13 million (20% of $65 million). Hence, the purchase raises L's final wealth by $1 million.

E. Summary

Each scenario illustrates one of the paper's four points. First, management and shareholders have incentives to resolve their differences without resort to costly control contests. Since takeover threats discipline managerial shirking, takeovers should be rare except when management is incompetent and must be replaced. Second, a large shareholder may be forced to commit resources in a hostile tender offer in order to demonstrate that it has low takeover costs. If management responds with asset sales or other concessions, the bidder may withdraw the offer yet consider the outcome a complete success. Third, management may employ short-term debt to bond its promises to sell or scrap poorly performing but illiquid assets. Finally, a large shareholder (risk neutral and unfettered by wealth constraints) gains from a purchase of additional shares. Such a purchase gives the shareholder greater leverage in negotiating with management. These scenarios are discussed at greater length in the sections that follow.

III. THE MODEL

Consider a firm in which management lacks the incentive to maximize the current market value of outstanding equity. Let V represent the market value of the firm's assets, and let V^* be the firm's potential value. In-

cumbent management is assumed competent -- it can set V at any level up to V^* by improving operations or selling assets. Let $V_0 \leq V^*$ be the firm's initial value, where management chooses V_0 in a manner described below. Management maximizes (expected) utility, $U(V)$, which is strictly decreasing over the range of values discussed here. If incumbent management loses control, utility equals $U_\ell < U(V^*)$, so management would prefer to make all potential improvements rather than lose control of the firm.

Atomistic shareholders own a fraction $(1-\alpha)$ of the firm's equity, and a single large shareholder, L, owns a fraction α. This large shareholder maximizes wealth and can wrest control from incumbent management by purchasing a critical fraction of the firm's shares (for simplicity, assume 50%). A takeover involves transactions costs, which are defined as all costs except the direct cost of the shares themselves. Assume that L incurs transactions costs C_0 leading up to the initial tender offer, and additional costs C_1 from the time of the initial offer through a change in control. The total costs of taking control are $C = C_0 + C_1$.

A. Perfect Information

Assume first that all information is common knowledge. Consider a simple two-stage game in which management begins by choosing the firm's initial value, V_0, and L responds either by accepting this value or by taking control of the firm.

If L chooses not to take control in the second period, then managerial utility equals $U(V_0)$ and L's final wealth is

(1) $W = \alpha V_0$ (no tender offer)

If L chooses instead to take control, shares outstanding must be purchased

at their full post-takeover value (Grossman and Hart, 1980). In this case,
managerial utility equals U_ℓ and L's final wealth is

$$(2) \qquad W = \alpha V^* - C \qquad \qquad \text{(takeover)}$$

Comparison of equations (1) and (2) reveals that L takes control of the firm
if and only if $\alpha V^* - C > \alpha V_0$. Solving for V_0 gives a critical initial
value for the firm:

$$(3) \qquad V_0^* = V^* - (\tfrac{1}{\alpha})C$$

If $V_0 \geq V_0^*$, L makes no offer. If $V_0 < V_0^*$, L takes control.

All information is common knowledge, so management can infer V_0^* at
the outset. Since $U_\ell < U(V^*) \leq U(V_0^*)$, it follows immediately that man-
agement chooses $V_0 = V_0^*$. In short, management sets the firm's initial
value just high enough to preempt a takeover in the second period. This
yields the paper's first proposition.

Proposition 1: Assume that management is competent and that all information
is common knowledge. Then if management has the opportunity to restructure
the firm or sell assets, a takeover never occurs.

Simply put, incumbent management and the large shareholder resolve their
differences without resort to a costly control contest.

B. Asymmetric Information and Hostile Tender Offers

Now assume two types of large shareholders, $\theta = A$ and $\theta = B$, which
are distinguished by their takeover costs. Define C_0^θ and C_1^θ as the cost
of an initial offer and subsequent takeover, respectively, for a type-θ
large shareholder (L_θ); and let $C^\theta = C_0^\theta + C_1^\theta$. Assume that $C_0^A < C_0^B$ and

$c_1^A - c_1^B - C_1$, so that L_A has lower costs than L_B.[2] These costs may differ for a variety of reasons, including differential access to low-cost capital or a better takeover technology.

Only L knows θ. All other information is common knowledge. Initially management perceives probabilities ρ that $\theta - A$ and $(1-\rho)$ that $\theta - B$. The game now has four periods (illustrated in Figure 2). In period one, management chooses $V_0 \leq V^*$. In period two, L has the option to make a cash tender offer for the firm's outstanding shares. Management then has an opportunity in period three to respond to a tender offer by improving operations or selling assets. Let V_1 represent the firm's value at the end of the third period. In the last period, L decides either to withdraw the initial offer or to take control.

Figure 2 About Here

If L makes no offer in period two, the game ends. Managerial utility equals $U(V_0)$ and L's wealth is given by equation (1). If L makes an offer and then withdraws, managerial utility equals $U(V_1)$ and L receives

(4) $\qquad W - \alpha V_1 - c_0^\theta$ $\qquad$ (initial offer withdrawn)

If dissatisfied with management's choice of V_1, L pursues the bid and takes control. Managerial utility equals U_ℓ and L's final wealth is

(2') $\qquad W - \alpha V^* - c^\theta$ $\qquad$ (takeover)

Comparison of equations (1), (2') and (4) reveals L's tradeoffs. An initial offer involves costs, but induces management to raising the firm's value. Taking control results in further gains as well as additional costs.

Solve for equilibrium by moving backward through the game tree. Suppose L has made a tender offer and management has chosen V_1. Comparing equa-

tions (2′) and (4), L takes control in the final period if $V_1 < V_1^*$, where

(5) $\qquad V_1^* = V^* - (\frac{1}{\alpha})c_1$

Otherwise, L withdraws the initial offer.

In period three, management knows it must set $V_1 \geq V_1^*$ to avert a takeover in the final period. Since management would prefer to raise the firm's value rather than lose control, it undertakes just enough improve-ments to preempt a takeover in the final period. Consequently, $V_1 = V_1^*$. In this model, such a move always preempts a takeover in the final period.

When deciding whether or not to make a tender offer in the second period, L knows how management will respond in the third. L therefore makes an initial tender offer if and only if $\alpha V_1^* - c_0^\theta > \alpha V_0$. Solving for V_0 gives two critical initial values for the firm:

(6) $\qquad V_0^\theta = V^* - (\frac{1}{\alpha})c^\theta \qquad\qquad\qquad \theta = A, B$

If $V_0 < V_0^\theta$, L_θ makes a tender offer in the second period. Otherwise, L_θ makes no offer and the game ends.

At the outset, management has two options. By setting $V_0 = V_0^A$, management preempts all tender offers. By setting $V_0 = V_0^B$, management receives a tender offer from L_A but not L_B. Management never chooses any other initial value because it could then lower V_0 without affecting the likelihood of a tender offer. In period one, management chooses the firm's initial value to maximize its expected utility:

(7) $\qquad V_0 = \begin{cases} V_0^A & \text{if } \rho U(V_1^A) + (1-\rho)U(V_1^B) < U(V_0^A) \\ \\ V_0^B & \text{otherwise} \end{cases}$

Under this rule, L_B never makes a tender offer. L_A makes an offer if and only if $V_0 = V_0^B$; management then sets $V_1 = V_1^A$ and L_A withdraws.

This model gives rise to hostile tender offers as a commitment device. Suppose, for example, that management is not strongly risk averse and initially perceives little likelihood that L has low takeover costs ($\rho \approx 0$). Under these circumstances, it sets $V_0 = V_0^B$, and L_A responds by committing resources toward an initial tender offer. Management realizes that it has misjudged the large shareholder's true takeover costs. But because L_A has already borne some of the costs of taking control, management must make more improvements than would have been necessary to preempt a tender offer at the outset. In short, management must undertake a major restructuring in order to retain control. With the restructuring complete, L_A aborts its tender offer -- not because management has erected a successful defense but rather because L_A has succeeded in getting the changes it demands.

IV. PRE-OFFER TRADING BY THE LARGE SHAREHOLDER

Shleifer and Vishny (1986) employ a model where L can invest in monitoring activities which would raise the firm's value following a takeover (but not otherwise). Only L knows the firm's true post-takeover value. In their framework, Shleifer and Vishny argue that L rarely makes pre-tender offer stock purchases unless these transactions take place secretly. They reason that if small shareholders observe L trying to purchase shares, they draw inferences which make them reluctant to sell. For instance, if L tries to buy shares after monitoring the firm -- and after learning its true value -- small shareholders infer both that the firm's value would rise dramatically following a takeover and that a takeover is likely. They therefore refuse to sell except at a price which reflects the firm's post-takeover

value. At this price, however, L finds such a purchase unprofitable.

Shleifer and Vishny argue that L would rarely profit from buying addi-
tional shares even if it has not yet learned the firm's post-takeover value
(in part because of L's difficulty in claiming not to know this value). The
authors identify only one case where L would profit from a publicly observa-
ble share purchase: L must buy before learning the firm's true post-takeover
value; L must claim credibly not to know this value; L must commit not to
make subsequent share purchases; and L must already own a significant frac-
tion of the firm. If the firm initially has diffuse ownership, the authors
therefore conclude that a large shareholder will emerge only in the presence
of anonymous trading.

The model developed here leads to far different conclusions. Suppose L
buys additional shares. By committing more resources and raising its stake
in the firm, L reinforces its takeover threat and management must respond
with more improvements in order to retain control. By assumption, such a
purchase involves no transactions costs, so the capital gain on L's initial
holdings justifies the purchase even if L pays full value for the additional
shares.

The large shareholder faces only one obstacle in pursuing such share
purchases. Small shareholders know that if L buys shares once, it would
like to do so again and again until it establishes a controlling position.
Unless L can commit not to take control by purchasing shares in this
fashion, small shareholders may refuse to sell their shares for anything
less than the post-takeover price. For simplicity assume that L can take
control of the firm only through a tender offer and cannot acquire control
through piecemeal purchases of stock in the secondary market.[3] Then as the
appendix shows, the following result holds:

Proposition 2: Suppose the large shareholder cannot take control of the firm by making repeated share purchases in the secondary market. Then this shareholder always profits from a small share purchase.

This result holds even if L's original ownership stake is close to zero and even though all trades are publicly observable. It also holds whether or not L has private information about takeover costs.

To illustrate, consider the full information case and allow L an opportunity to purchase shares before management chooses V_0. Let α_0 represent L's initial holdings and define W_0 as L's wealth if L buys no more shares. With full information, management sets $V_0 = V_0^*$ and the game ends. L's final wealth equals

$$(8) \qquad W_0 = \alpha_0 V_0^* = \alpha_0 V^* - C$$

Let $(\alpha - \alpha_0)$ represent the fraction of the firm L purchases if it decides to increase its stake. Define V_s as the value of the firm as reflected in the price of the shares it purchases. Then $(\alpha - \alpha_0)V_s$ is the cost to L of buying additional shares. Once L buys shares, management sets $V_0 = V_0^*$ and the game ends. L's final wealth, represented here by W_α, equals

$$(9) \qquad W_\alpha = \alpha V_0^* - (\alpha - \alpha_0)V_s$$

With perfect information, small shareholders infer the firm's final value (V_0^*) and stand willing to sell their shares accordingly. Thus, $V_s = V_0^*$. Substitution into (9) gives

$$(10) \qquad W_\alpha = \alpha_0 \left[V^* - (\tfrac{1}{\alpha})C \right]$$

Although L pays full value for the stock it buys from small shareholders,

it has a higher stake in the firm and management must respond by setting a
higher initial value. Subtracting equation (9) from equation (10) gives

$$W_\alpha - W_0 = c\left[1 - \frac{\alpha_0}{\alpha}\right] > 0$$

Furthermore, $(W_\alpha - W_0)$ is strictly increasing in α: given the opportu-
nity, L would like to purchase as many shares as possible.

V. CREDIBLE COMMITMENTS TO SELL ASSETS

Though the use of debt in control contests has received intense scru-
tiny, few studies examine the behavior of firms once control contests end.
This section argues that no previous study explains adequately why some
firms take on high levels of debt, and then take extraordinary measures to
repay the debt quickly. It then offers an alternate explanation based on
managerial promises to sell or scrap poorly performing assets.

A. Conventional Explanations of Highly Leveraged Restructurings

Following many highly leveraged restructurings, firms quickly sell
assets and use the proceeds to reduce debt. What motivates these firms to
borrow so much <u>and then repay so quickly</u>? Conventional explanations do not
apply in such cases.[4] For example, suppose the firm borrows in order to ex-
ploit the tax preferences afforded debt. Why, then, would the firm quickly
repay the debt and give up these tax preferences? The subsidy given to debt
financing may distort the firm's restructuring decision, but under these
circumstances it cannot be the primary motive for it.

Similarly, such leveraged restructurings cannot be motivated out of any
desire to expropriate bondholder wealth. Shareholders gain at the expense
of bondholders at the time the firm restructures, but these bondholders
recoup their losses once the debt is repaid. If the firm had intended to

expropriate bondholder wealth, it would not act to repay so quickly.

Furthermore, the assets sold by these firms often end up in other firms with low ownership concentrations. If the firm liquidates assets in this manner, explanations which rely upon high ownership concentrations (and the accompanying reduction in agency costs) should be viewed with suspicion.

Finally, this behavior is difficult to reconcile with Jensen's free cash flow hypothesis (1986,1988). Jensen defines free cash flow as cash flow in excess of what is needed to fund all the firm's investment projects with positive expected net present values. Management should disgorge this cash to shareholders, but prefers to retain it to finance amenities or un- profitable business ventures. According to Jensen, leveraged restructurings force management to pay out this free cash and thereby realign managerial incentives with shareholder interests (1988, p.29):

> Debt reduces the agency cost of free cash flow by reducing the cash flow available for spending at the discretion of managers. By issuing debt in exchange for stock, managers bond their promise to pay out future cash flows in a way that simple dividend increases do not. In doing so, they give shareholder-recipients of the debt the right to take the firm into bankruptcy court if they do not keep their promise to make the interest and principal payments.

When managers employ debt in this manner, they should structure it so that payments to creditors match free cash flow. If these payments are too low, then management continues to shirk. If the payments exceed free cash flow, then the firm pays out funds which by definition it needs to fund profitable ventures. In short, if free cash flows are permanent (as we would typically expect), then the firm should adopt permanently high levels of debt.

The types of restructurings discussed here, however, involve levels of debt so high that the firm must do more than merely pay out cash flows to shareholders. To remain solvent, the firm must sell assets. The argument

developed below therefore differs from Jensen's free cash flow hypothesis in two key respects: free cash flow plays no immediate role and debt must be repaid quickly. As such, it bears a far closer resemblance to Jensen's second explanation for high debt (p.30):

> The debt created by a hostile takeover (or takeover defense) of a firm suffering severe agency costs of free cash flow need not be permanent. Indeed, sometimes "overleveraging" such a firm is desirable. In these situations, levering the firm so highly that it cannot continue to exist in its old form creates the crisis to motivate cuts in expansions programs and the sale of those divisions that are more valuable outside the firm. The proceeds are used to reduce debt to a more normal or permanent level.

This explanation -- minus the emphasis on free cash -- motivates the discussion that follows.

B.   Debt as a Commitment to Sell Assets

Reconsider the example from Section II.C. in which management employs short-term debt to bond its promises to sell illiquid assets. Two elements of the transaction make management's promises credible. First, the debt must be very high ($66 million). Otherwise management can remain solvent by selling only one division. Second, the debt must have a short duration (giving management just enough time to sell the divisions for $25 million each). With a longer maturity, management would have no immediate reason to sell assets. These ideas receive further attention here.

As a rule, management must borrow enough to ensure that the firm will default unless it initiates all promised changes. To see this, suppose management borrows only $65 million and distributes the proceeds to shareholders. The firm's net worth is -$5 million. By selling one division, however, management retains control. The proceeds from the sale can be used to pay creditors $25 million at maturity, and the remaining $40 million can be refinanced using the two remaining divisions as collateral (Fig. 3).

Figure 3 About Here

To understand the short-term role of debt, suppose instead that management borrows $66 million in long-term debt. If managers have private information which they believe provides a better indication of the firm's potential performance than the information available to others, then they may believe they can do a better job of meeting interest obligations by keeping the divisions rather than selling them. In any event, they have no reason for selling assets quickly.

If debt represents management's only commitment vehicle, the example shows that the firm must take on very high levels to retain control.[5] The debt should be structured to give management just enough time to sell assets at their full market values. This can be accomplished with either short maturities, strict sinking funds, or strong incentives to refinance.

With such high debt levels, creditors take on many of the attributes of equityholders. The key difference, however, is that if the firm fails to fulfill its promises, any creditor -- no matter how small -- can force the firm into bankruptcy. Hence, creditors wield control that individual shareholders did not have prior to the restructuring.

VII. CONCLUSIONS

Incumbent management and large minority shareholders emerge from this model with markedly different roles than they play in other frameworks. These differences stem from modifying these other frameworks in three ways. First, management can initiate improvements in the firm to preempt a takeover. Second, control contests can revolve around the operation or sale of individual assets rather than the entire firm. Third, the model recognizes

FIGURE 3

ASSETS	LIABILITIES
2 Divisions	$40 million long-term debt or equity

that a bidder does not bear all transactions costs at the time of an initial tender offer. Instead a portion of these costs are not incurred unless the bidder pursues the takeover.

The model employs highly stylized assumptions, but reaches intuitive conclusions. Management and shareholders, for example, have incentives to resolve their differences without resort to costly control contests. Whatever the model's shortcomings, results such as these should be robust to a wide variety of modifications.

Along these lines, future work should accommodate greenmail and sources of asymmetric information other than those adopted here. The model could easily extend to proxy fights. Finally, the model has numerous testable implications which should be explored in detail.

APPENDIX

<u>Proof of Proposition 2</u>: Let α_0 represent L's initial holdings and let $(\alpha - \alpha_0)$ be the fraction of the firm bought (sold) by L in a subsequent transaction. The large shareholder buys these shares before management chooses V_0. All trades are publicly observable, but only L knows θ.

Let W_0 refer to L's final wealth if no shares are bought or sold, and let W_α represent L's wealth if they are. Let $V_s - V_s(\alpha_0,\alpha,\rho)$ represent the firm's value as reflected in the secondary market price. Then

$$
(A1) \quad W_0 - \begin{cases} \alpha_0 V_0^A & \text{if } V_0 - V_0^A \\ \alpha_0 V_1^A - C_0^A & \text{if } \theta - A \text{ and } V_0 - V_0^B \\ \alpha_0 V_0^B & \text{if } \theta - B \text{ and } V_0 - V_0^B \end{cases}
$$

$$
(A2) \quad W_\alpha - \begin{cases} \alpha V_0^A - (\alpha-\alpha_0)V_s & \text{if } V - V_0^A \\ \alpha V_1^A - (\alpha-\alpha_0)V_s - C_0^A & \text{if } \theta - A \text{ and } V_0 - V_0^B \\ \alpha V_0^B - (\alpha-\alpha_0)V_s & \text{if } \theta - B \text{ and } V_0 - V_0^B \end{cases}
$$

In equation (A1), V_0^θ and V_1^θ are determined by substituting α_0 into equations (5) and (6). If $\theta - A$, it follows that in all cases

$$W_\alpha - W_0 - (\alpha - \alpha_0)(V^* - V_s)$$

If $\alpha_0 > 0$, L_A always gains by buying additional shares if they can be purchased for less than their post-takeover value. Since a takeover never occurs in this model (since management is assumed competent), the firm's final value always lies below V_*. Hence, $V_s < V^*$ and $W_\alpha - W_0 > 0$. In

short, L_A always profits from a share purchase.

If $\theta = B$, the argument proceeds along the same lines, but one additional complication appears. If L_B does not purchase shares, management immediately infers its true type and responds by setting $V_0 = V_0^B$. In addition to the increased leverage that a higher stake has in forcing management to make improvements in the firm, L_B must also make the purchase to avoid revealing that it does not have low takeover costs. In other words, for L_B,

$$W_\alpha - W_0 \geq (\alpha - \alpha_0)(V^* - V_s)$$

Consequently, L_B also profits from a small share purchase.

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ENDNOTES

[1]The large shareholder may incur roadblocks which raise the purchase price of shares. For example, some targets have "fair price amendments" (see Jarrell, Brickley, and Netter, 1988) which force bidders to pay to all shareholders the highest price paid for any of the shares it has acquired in the target firm during a specified period of time. As another example, some bidders may pay a high price for shares because they cannot acquire a foot-hold secretly. To the extent that such factors raise the purchase price of shares, the _increase_ in price should be included in transactions costs.

[2]These assumptions are not crucial. Similar models could be constructed where $C_0^A = C_0^B$ and $C_1^A \leq C_1^B$. A signalling model could also be developed where $C_0^A < C_0^B$ and $C_1^A < C_1^B$.

[3]For example, L could face legal restrictions on taking control through such piecemeal purchases. The firm could also have fair price provisions in its corporate by-laws which make such piecemeal arrangements impractical (see Jarrell, Brickley, and Netter, 1988, p. 62).

[4]For a survey, see Jarrell, Brickley, and Netter (1988).

[5]The firm may have recourse to other commitments. For example, the directors could replace top management without yielding control, or they could index managerial compensation more closely to the firm's performance.