Graduate School of Business Administration
University of Virginia

UVA-F-1362-SSRN
Version 3.6

Hostile Takeovers:
A Primer for the Decision-Maker

The game of professional investment is intolerably boring and overexacting to anyone who is entirely exempt from the gambling instinct; whilst he who has it must pay to this propensity the appropriate toll.

John Maynard Keynes[a]

1. Introduction: takeovers are games

A hostile tender offer ("takeover") begins with an unsolicited offer by a bidder to purchase a majority or all of the target firm's shares. The bidder will set the offer for a particular period of time, at a price, and a form of payment, and may attach conditions to the offer. The target will ordinarily undertake evasive maneuvers. Research shows that the hostile bidder consummates a deal in about 20 percent of the cases. In roughly 30 percent of the cases, the target is acquired by another, usually "friendly," firm. And in the remainder of the cases, the target remains independent. The complexity, uncertainty, and drama of these events seem to defy an easy grasp.

Keynes' famous words afford a basis for understanding, analyzing and designing or repelling hostile tender offers: takeovers are *games*. In the arena of M&A, the professional investor that Keynes cites is the arbitrageur. One can understand these events and the arbitrageur better by studying them the way one studies a game:

- Gain the perspective of the various players in the takeover scenario, their motives and behaviors.
- Master important rules and defenses that constrain the players.
- Anticipate the paths that outcomes may take.

The analytics of hostile tender offers significantly entail the assessment of probabilities. Takeover attempts are bets on uncertain outcomes. The players' strategies are aimed at tilting the odds in one's favor. The homework necessary to assess these odds and play them well surely constitutes Keynes' "appropriate toll." Of course, understanding the game is no assurance of likely success--it also takes skill. As John McDonald said about poker,

A knowledge of mathematical probabilities will not make a good poker player, but a total disregard for them will make a bad one.[b]

2. Be aware of the players, both on the field and off.

One begins an introduction to a game by surveying the people gathered around the table.

Attacker (or in street parlance, a **bidder**). The popular press and halls of government view bidders rather harshly, for it is the bidders who propose to wrest control, close plants, lay off workers, and take other actions to enrich themselves. A more benign view is that bidders are *entrepreneurs* who through research and initiative discover profitable opportunities. The hostile tender offer is the action taken to begin to harvest the profit.

Defender or **target** *is* the profitable opportunity. Usually, targets have underperformed against one or more benchmarks, about which the target managers are doing little, or floundering in attempts to improve performance. The bidder may see hidden or underutilized assets that could be sold, or businesses that are draining cash and could be restructured or closed.

It is naïve to see the hostile tender offer as a contest simply between bidder and target. The field is considerably more complicated. Viewed through a lens of economics, the contest embraces the following kinds of players:

Free riders versus the bidder. Free riders are shareholders who may not be well-informed but who suspect that the bidder knows something they don't, and who are tempted to participate in some of the profits flowing to the bidder. These shareholders seek to ride free in harvesting the profitable opportunity. The bidder would like to quell the free riders, because they reduce the bidder's profit.

Groups within the target. One of the worst mistakes is to view the target as a solid bloc of decision-makers. In reality, the target harbors important divisions which the bidder can exploit:

- **Managers versus directors.** Usually senior target company managers lose their jobs following a successful hostile takeover. Even if they do not lose them, salaries, and perquisites tend to be distributed less freely. In short, target managers have a strong incentive to oppose a hostile bid. A firm's directors, however, are bound by legal doctrines of the duties of care and loyalty to maximize the welfare of shareholders. Failing to do so exposes directors to micromanagement by courts of law, and possible personal liability for past errors. Obviously, the interests of managers and directors can diverge. The **Target's board of directors** is at the fulcrum of pressure and can reverse management's strategy in the game through such means as rescinding the firm's antitakeover defenses, and declaring an auction for the firm.
- **Insiders versus outside directors.** The board itself may consist of subgroups that harbor divergent interests. Inside directors are usually also managers. Other directors who side with

the manager-directors may have links by marriage or work experience that tie them by loyalty more closely to managers than to shareholders.

- **Large shareholders versus small shareholders.** Not all target shareholders are equal; their relative voting power can have an influence on the board of directors.

Other potential buyers, who would have an interest in acquiring the target, but have yet to enter a bid. These might include friendly buyers (also called, "white knights"), and friendly investors in special controlling securities (also called, "white squires."[1])

Arbitrageurs who make a living betting on price movements in takeovers. Once a takeover is announced, the "arbs" (as they are more popularly known) practically absorb all loose shares sloshing around in the stock market, and almost certainly become the crucial deciders of any contest--for this reason, they deserve careful examination.

3. The arb is the consummate economic actor

The arbs' outlook is rationalistic, impatient, and always oriented toward value maximization. Appeals to loyalty, tradition, or some vague plan will have little influence over them. They like immediate cash profits. Arbitrageurs are short-term investors driven only by economic motives. They invest funds in takeover situations and recapitalizations and try to limit the exposure to the likelihood of a deal not being consummated. They often provide liquidity to investors who do not wish to wait out a battle for corporate control.

Consider the example[c] of a target company, which receives an offer of $60 per share for all the shares of the company. If the shares are trading at $40 per share when the offer is announced, one could make a profit of $20 by buying instantaneously, and holding until the transaction is completed. Unfortunately, the Stock Exchange would probably suspend trading in the stock as investors flood the market with orders to buy or sell. When order has been regained, the stock will resume trading at a point where there are both buyers and sellers at the same price. At that point, the shares may be trading at $57 or $58 a share. Institutions and private investors would be able to sell shares immediately to the arbs at $57, reaping a $17 gain. The $3 difference or spread can be viewed compensation to investors for any remaining uncertainty about whether the transactions will be consummated, and for the time remaining to closing of the deal. The bidder's share price declines $3 upon the announcement to close at $50, and remains there until the end of the arb's holding period.

[1]Warren Buffett has played the "white squire" to several firms, most notably Gillette. He has purchased convertible preferred stock, which if converted would represent a material minority of shares outstanding. The shares represented in these white squire positions require added investment on the part of a hostile bidder and thus have a deterrent effect.

The task for the arbs is to evaluate the likelihood of the deal being consummated and structure an investment position based on that view. The arb will seek to create a hedged position, whose risk is determined by the deal, rather than by general market conditions. A typical arbitrage position following a hostile takeover announcement would be to take a Along@ position in the shares of the target company, and a "short" position in the shares of the bidder--this reflects the typical movement of share prices at the announcement of hostile bids, but the structure also cushions the arb against general movements in the stock market.

3.a. Return to the arbitrageur

The following example calculates the return to the arb in the transaction described above:

(1) Position Taken: 100 Target Company shares bought at $57. 100 Bidder Company shares sold short at $50.

(2) Date Position Taken: June 1, 1996

(3) Date Shares Tendered: June 28, 1996

(4) Date Proceeds Received: July 10, 1996

(5) Total Time Involvement: 40 days

(6) Capital Employed:

Assets		
Long 100 shares of Target x $57/share =		$5,700
Liabilities and Capital		
Short 100 shares of Bidder x $50/share =	$5,000	
Borrowed 100 shares of Bidder =		($5,000)
Bank Borrowings (70% of Assets) =		$3,990
Capital (30% of Assets) '=		1,710
Total:		$5,700

(7) Net Spread Calculation:

$300	Gross Spread (Target: [$60-$57] x 100 shares) plus (Buyer [$50-50]x100 shares)
(43)	Interest Cost (10% for 40 days on credit of $3,990)
(20)	Short Dividends Foregone
30	Long Dividends Received
$267	Net Spread or Return on Investment

(8) Annualized Return on Capital

$$\text{Average Capital Employed} = \frac{40 \text{ days}}{365 \text{ days}} \times \$1{,}710 = \$187$$

$$\text{Annualized Return on Capital Employed} = \frac{\$267}{\$187} = 142\%$$

While this is a high apparent return on capital, the arb could sustain a sizable loss if the hostile bid does not succeed. Note also, that this ROI is very sensitive to small variations in waiting period, and dollar return.

3.b. The Arb's Choice Between Tendering into a Hostile Bid, and Waiting for the Target's Recapitalization

In deciding where to tender their shares in a contest for corporate control, the arbs will determine which offer gives them the highest annualized return on their invested capital. To continue our example, an arb would prefer $60 on July 10 as opposed to payment of $61 received in September. With capital costs of 30-40 percent per year, the timing of cash flows received is crucial to their decision. Lastly, the decision of arbs to tender their shares to a raider will, in almost all cases, mean that a company will not have ample time to complete its own recapitalization if it is calculated to have a lower blended value.

Assume the Target Company decides to mount its own recapitalization plan by buying back 35 percent of its shares at $85 per share. Furthermore, assume that the stub share (i.e., a share of the common stock remaining after the recapitalization) will be estimated to trade at approximately $55 per share afterward.

Blended Value = (35% * $85) + (65% * $55) = $65.50

Note that an arb would prefer a blended value of $65.50 if that value could be delivered on a timely basis.

More usually, risk arbitrageurs will play both sides of a hostile tender offer, taking a long position in the shares of the target, and a short position in the shares of the bidder. One of the leading arbs, Guy Wyser-Pratte, has written,

> *An arbitrageur is not an investor in the formal sense of the word: i.e., he is not normally buying or selling securities because of their investment value. He is, however, committing capital to the "deal"--the merger, tender offer, recapitalization, etc.--rather than to the particular security. He must thus take a position in the deal in such a way that he is at the risk of the deal, and not at the risk of the market.*[d]

As Wyser-Pratte suggests, the arb will be extremely sensitive to the values underlying the deal, and to its outcome. To illustrate why, consider Table 1, which expands the results of the example given above, and gives the annualized rates of return associated with different holding periods and payoffs.

Table 1
Sensitivity Analysis of Annualized Rate of Return to
Variations in Length of Holding Period and Expected Payoff from Investment

		Expected Value Per Share								
		$55	**$57**	**$59**	**$60**	**$61**	**$63**	**$65**	**$67**	**$69**
Days in Holding Period	**20**	-226%	-13%	201%	308%	414%	628%	841%	1055%	1268%
	25	-186%	-15%	156%	241%	327%	497%	668%	839%	1010%
	30	-159%	-16%	126%	197%	268%	411%	553%	695%	838%
	35	-139%	-17%	105%	166%	227%	349%	471%	593%	715%
	40	-125%	-18%	89%	142%	195%	302%	409%	516%	622%
	45	-113%	-19%	76%	124%	171%	266%	361%	456%	551%
	50	-104%	-19%	66%	109%	152%	237%	322%	408%	493%
	55	-97%	-19%	58%	97%	136%	213%	291%	369%	446%
	60	-91%	-20%	51%	87%	123%	194%	265%	336%	407%
	65	-86%	-20%	46%	78%	111%	177%	243%	308%	374%
	70	-81%	-20%	41%	71%	102%	163%	224%	285%	346%
	75	-77%	-20%	36%	65%	93%	150%	207%	264%	321%
	80	-74%	-21%	33%	59%	86%	139%	193%	246%	300%

Note: Shaded cell indicates example case in text.

The table reveals that apparently small variations (e.g. $2.00) in expected payoffs produce sizable swings in returns--returns vary directly with payoffs. The table also shows that returns vary inversely with holding period--the longer the period, the smaller the returns[2]. Plainly, a takeover consummated in 20 days results in dramatically higher returns than those taking 40 and 80 days.

The implication of Table 1 is that the arb will be extremely sensitive to variations in time and payoff. This sensitivity means that bidders and targets that seek the support of arbs must tailor their tactics to exploit this sensitivity.

4. The arb assesses a recapitalization proposal in terms of blended value.

One common response by takeover targets is to initiate a leveraged recapitalization of the firm. This entails borrowing substantially and paying a large one-time dividend to all shareholders and/or a large one-time share repurchase. Asset sales or other restructuring tactics may be involved also. The result is a highly levered acquisition target that is probably less attractive to a hostile bidder. The arb assesses the share-repurchase recapitalization as a blend of values.

Assume the target company decides to mount its own recapitalization plan by buying back 35

[2]The inverse relationship between holding period and return is true for all but the left-most column, in which the return is less negative, the longer the period. This is because at short holding periods, the annualization multiple (365 divided by days in holding period) has a huge effect in amplifying a negative return to be even more negative. For longer periods, the annualization impact is less pronounced.

percent of its shares at $85 per share pro rata among all shares. Furthermore, assume that the stub share[3] will be estimated to trade at approximately $55 per share after the recapitalization is completed. The share value to the arb of this recapitalization is a blend of the two:

Blended Value = (35% * $85) + (65% * $55) = $65.50

Note that in this example, an arb would prefer a blended value of $65.50 realized from the recapitalization (as opposed to the raider's $60 offer) if that value could be delivered on a timely basis. To continue the previous example, if the arb realizes a value of $65.50 per share, the return on investment for 40 days will be 48 percent[4], and the annualized return will be 436 percent. As this second example illustrates, the high leverage of the arb's position causes the returns to swing dramatically with small changes in the gross spread per share.

In deciding where to tender their shares in a contest for corporate control, the arbs will determine which offer (i.e., the hostile bid, or the recapitalization) gives them the highest annualized return on their invested capital. To continue our example, an arb would probably prefer $60 cash on July 10 as opposed to cash and securities of $65.50 received on October 10.[5] With capital costs of 30-40 percent per year, the timing of cash flows received is crucial to the arbs' decision. Lastly, the decision of arbs to tender their shares to a raider will, in almost all cases, mean that a company will not have ample time to complete its own recapitalization if it is calculated to have a lower blended value.

5. Takeover defenses alter the probabilities of outcomes.

Target management can undertake a series of maneuvers to delay or completely stop the consummation of a hostile acquisition. These are commonly known as "antitakeover defenses." Courts have shown strong reluctance to invalidate these defenses without some proof of conflict of interest, negligence or fraud on the part of target management.

Classified boards dictate the election of a fraction of the total directors each year, thus delaying the attainment of control by the bidder through domination of the board.

---

[3] "Stub shares" are the shares of a company that remain after a major recapitalization. For instance, if a Parent Company decided, in the face of a hostile tender offer, to sell off two of its major business lines and borrow a significant amount of money to buy back two-thirds of its shares, the shares left over would be called stub shares.

[4] The gross spread is $65.50-$57 x 100 shares, or $850 on the position in the Target, and $50-$50 x 100 shares or zero on the position in the buyer. Deducting interest of $43.73 and dividends foregone from the short sale of $20, and adding dividends received of $30 gives a net spread of $816.27. Dividing the net spread by capital committed of $1710 gives a return on capital of 48 percent, which is annualized to 436 percent.

[5] Assuming a 40 percent annual discount rate, the present value of $65.50 received in four months is $58.55.

The **supermajority amendment to the bylaws** specifies that a large percentage of the currently outstanding common shares must approve a merger between the Company and an acquirer. Generally, acquirers would be hesitant to make an offer for a company if they believed they would not be able to complete the merger.

The **fair price amendment to the bylaws** requires that all selling shareholders receive the same price from a buyer. This prevents the implementation of a two-tier or "freeze-out" tender offer in which a controlling block of shares is purchased at a premium, and the remaining minority is purchased at a discount.

Golden parachutes grant target management generous severance payments if they are fired following an acquisition. This has the effect of raising the cost of acquisition to a bidder.

A **leveraged recapitalization** by the target entails borrowing heavily, and paying a large one-time dividend to target shareholders. Thus, a hostile acquirer will need to assume a large debt burden from the target. Moreover, many debt provisions in highly leveraged recapitalizations include **poison puts** that make the debt immediately payable upon a change of control of the target firm. Thus, the bidder must be prepared to refinance the target's debt upon acquisition.

The **shareholder right** (or "poison pill" as it is commonly called) is a nondetachable right to obtain common shares at nominal cost. All shareholders participate in the right except for an "interested person" who acquires more shares than allowed under the rights plan. Thus, the plan discriminates against an unwanted acquirer in favor of all other shareholders, making the acquisition more expensive (e.g. 25 to 50 percent more) than otherwise. Typically the right is effective for 10 years unless extended by the board of directors. Nondetachable rights are distributed pro rata to all common stockholders as a stock dividend. The rights are automatically transferred with the shares of common stock to which they relate but do not become exercisable (and indeed are not even represented by separate instruments) until the occurrence of a "Triggering Event." At that point, separate instruments representing the rights are distributed to shareholders. The Rights detach from the common shares and become separately tradable.

- Triggering event, "Interested Person" The triggering event is defined as the acquisition by any person (or group of persons acting in concert) of a certain percentage (today, typically 10 percent) of outstanding common stock without the prior consent of the firm's board of directors. Such an acquirer is known as an "Interested Person." An "Interested Person" may not exercise the rights.

- "Flip In" and "Flip Over" Provisions The rights plan may contain either or both "Flip In" and "Flip Over" provisions. The latter apply only when the Interested Person, having acquired

voting control of the firm, attempts to merge the firm into itself. At that point, holders of the Rights become entitled to purchase common shares of the surviving firm at nominal value. "Flip In" provisions entitle the holders to purchase common shares of the target firm at nominal value. Both the "Flip In" and "Flip Over" provisions impose significant economic dilution on the interested person.

- ! Redemption The board of directors may redeem the rights at any time prior to the Triggering event and for 10 days thereafter at the redemption price of $0.01 per Right. The rights become irredeemable after a 10 day "window."

- ! Qualified Offer, "Dead Hand" Provision The board may also choose to exempt a qualified offer from the operations of the rights plan. A "Qualified Offer" is defined as an all-cash, any-and-all-shares tender offer, or merger proposal that has been approved by the board. After a "Change of Control," defined as the replacement of fifty percent of the board in a proxy contest, the rights may be redeemed only by a majority of, but at least two, "Continuing Directors." A "Continuing Director" is defined as a person who was a member of the target board at the time the rights plan was adopted or was nominated by a majority of the directors then in office or their nominees

Poison pills are by far the most effective defense in the corporate arsenal. Pills have never been deliberately triggered, and, unless rescinded by target directors, are virtually guaranteed to halt a hostile takeover. But the poison pill defense is not without weaknesses. On occasion, courts have required boards to rescind poison pills. Some targets have appealed to directors and shareholders successfully to rescind pills (usually this is accompanied with a large acquisition premium.)

6. Court decisions, laws, and regulations affect the game considerably.

Government intervention in hostile takeovers influences the takeover process considerably. At the federal government level in the U.S., securities law has been oriented toward creating a "level playing field" in the spirit of enhancing competition among bidders. Antitrust law has been oriented toward protecting consumers and generally enhancing competition in product markets. At the state government level, antitakeover laws have been oriented toward simply preventing unwanted takeovers. These and other laws and regulations constrain the behavior of bidders and targets and affect the odds of successful acquisition. The following government-imposed requirements give a sense of the constraints on bidder and target managements.

A. The acquisition of shareholdings in excess of 5 percent of a target's shares must be disclosed within 10 days to the Securities and Exchange Commission (Rule 13-D). Arbitrageurs, major trading houses, and financial institutions employ runners to transmit copies of these 13-D filings

with the SEC immediately to their employers. Disclosures of major changes in shareholding become rapidly impounded in share prices. The effect of this requirement is to telegraph the intentions of a bidder to the target and the rest of the market, well in advance of acquiring control through open market purchases.

B. A tender offer must remain open 20 business days (Rule 14e-1(a)). Before the Williams Act, raiders could set a relatively short time to expiration of the offer, compelling hasty decision-making on the part of the target shareholders, and preventing action by target management. The effect of this rule is to give the target a window in which to organize a defense or a counterproposal to the arbs.

C. The bidder must honor all shares tendered into the offering *pro rata*, rather than on a first-come, first-served basis (Rule 14d-8). This relieves some of the target shareholders' compulsion to decide quickly in order to get in line early--offers for a controlling interest (e.g. 51 percent) rather than 100 percent of shares might be intended to induce a shareholder stampede. Similarly, this rule defuses somewhat the impact of the two-tier tender offer.

D. Target shareholders may withdraw their tenders for any reason in the first 15 days of a tender offer (Rule 14d-7(a)(1)). This permits shareholders greater flexibility in responding to competing offers, should they appear.

E. Tender offer time periods are extended by 10 days if a competing offer appears. (Rule 14d-7(a)(1)).

F. Directors must exercise duties of care and loyalty to the shareholders. (Case law). This extremely important doctrine prevents directors from giving much weight to the considerations of other stakeholders in the firm. Directors must do what is best for the shareholders first, and must do so in an informed and diligent manner.

G. Directors and managers must disclose *material* information about the company to the public. (Case law). For instance, receipt of a bona fide certain offer to buy a company that is communicated to management under some circumstances must be communicated to shareholders. However, what is "material" is a key matter of judgment. If management receives an offer then they must determine, with or without the assistance of an investment banker, if the offer is *bona fide*. For instance, an offer made by someone without financial support may not be deemed to be *bona fide*. If the offer is deemed to be *bona fide*, then at the very least the Board of Directors should be notified. At that point, legal counsel should be sought to make a determination of the disclosibility of the offer. The Company should never lie to the press because to do so would make them liable to charges of fraud. They may elect, as a matter of corporate policy, not to comment on market rumors.

H. If it is determined that the company is to be sold, the directors must sell it to the highest bidder. (Case law, the "Revlon Decision.")

I. The courts are disinclined to intervene in, or second-guess, management decision-making unless gross negligence or fraud can be proved. This is the "Business Judgment Rule" doctrine in U.S. federal courts. This puts the burden of proof on the bidder if the bidder seeks to have a court invalidate a target's antitakeover defenses.

J. In the event that a management group conducts an auction for the company, managers must be careful to maintain a level playing field during the auction process. They can give no bidder a preferred advantage in the bidding process.

7. Selling shareholders face a prisoner's dilemma

The decision of whether or not to sell into a tender offer creates an unusual conflict of interests for the selling shareholders of target companies. On one hand, by waiting and not tendering, there may be a higher offer down the road--or management might reveal some hidden value justifying a higher share price and bid offer. On the other hand, by selling now locks in a certain value. The only way to find out whether there is more value in the target firm is for target shareholders to band together, delay in tendering into the bidder's offer, and to wait to see if a higher value (or bid) emerges. The problem is that unified action among a highly atomistic shareholder group is difficult, if not impossible, to engineer.

This is the classic problem of the "prisoner's dilemma."[e] In this hypothetical case, two robbers are arrested by the police in the belief that they acted together in committing a crime. The prisoners are separated in different cells and interrogated independently. The prosecutor encourages each to confess, and implicate the colleague. If neither prisoner confesses, the prosecutor believes the court can be convinced to send the suspects to jail for 5 years. If both prisoners confess *and* implicate each other, the court will send the suspect to jail for 10 years. If one prisoner confesses and implicates the other, and the other neither confesses nor implicates, the one who confesses will get 3 years (time off for assisting the prosecution), and the other will get 8 years. The "prisoner's dilemma" is whether to confess or not, and offers four possible outcomes, represented in Table 2.

Table 2

		Prisoner B	
		Doesn't Confess	Confess
Prisoner A	Doesn't Confess	I. A gets 5 years B gets 5 years	II. A gets 8 years B gets 3 years
	Confess	III. A gets 3 years B gets 8 years	IV. A,B get 10 years, each

Plainly, Quadrants II and III are the best outcomes for the two prisoners individually, since these result in lower jail terms for each. But if *both* prisoners take the incentive offered, they will wind up with the longest sentences, 10 years each. The safest course of action is for neither to confess, since it results in a jail term materially shorter than 8 or 10 years, and not much longer than 3 years. Unfortunately, with the prisoners separated and unable to communicate, the collaboration and mutual assurances necessary to achieve Quadrant I are unlikely.

The "prisoner's dilemma" illustrates how opportunism and the absence of joint action result in least-desirable outcomes. The model has been used to explain a wide range of phenomena in business and finance. The key here is in anticipating the probabilities and actions of other players in the game.

The decision facing target shareholders (especially arbs) is similar. Table 3 recasts the Prisoner's Dilemma into a takeover setting. Here, two shareholders contemplate a two-tier tender offer of $80 cash paid per share for the first 51 percent of shares, and $60 in securities for the rest. Target shareholders face the payoffs shown in the cells of Table 2, associated with either tendering immediately, or waiting. With an immediate tender, the investor accepts the raider's offer. If both wait, the offer is defeated and the raider must raise its offer. If only one waits, the waiting shareholder becomes a minority investor in the firm, and eventually sells to the raider at a much-reduced price.

Table 3

		Investor B	
		Wait	Sell into Offer
Investor A	Wait	I. A gets $100/shr. B gets $100/share.	II. A gets $60/share B gets $80/share
	Sell into Offer	III. A gets $80/share B gets $60	IV. A,B get $70 each*

*The $70 payoff in Quadrant IV assumes proration of the front-end and back-end payments, 50% times $80 plus 50% time $60.

If the target shareholders act in concert and wait, they may obtain better information and a better price for their firm (Quadrant I.) If some sell into the tender offer while others wait, those who sell may obtain a better deal than those who wait and wind up being minority shareholders in a firm that is dominated by the bidder. Absent joint action and communication, if all shareholders sell into the tender offer, the bidder takes the firm at the price he offered (Quadrant IV).

To the extent that takeovers conform to this model, the "prisoner's dilemma" has important implications for bidders and target shareholders:

- Bidders benefit, and target shareholders lose by the asymmetric structure of payoffs, and the difficulty of taking joint action among target shareholders.

- To heighten the bidder's benefit (and achieve Quadrant IV), the bidder should structure the asymmetry of incentives to the target shareholders to motivate all to "defect" to accept the bid. This might be achieved by offering one high and relatively certain price to those who tender early, and another, lower and less certain payment to those who tender late. Also, the bidder might send signals consistent with a likely future "minority shareholder freeze-out." The classic achievement here is the "two-tier" tender offer: cash is offered to shareholders who participate in the bidder's offer for 51 percent of the firm, to be followed by shares or high-yield bonds for the shareholders who delay and tender late, participating in the last 49 percent of the purchase. A minority that holds out entirely might see the assets of the firm stripped and sold piecemeal to the bidder, in essence liquidating the target. In 1997 Hilton Hotels Corporation bid $55 per share for ITT Corporation: for the first 50.1 percent of shares, Hilton would pay cash; for the rest of the shares outstanding, Hilton would pay $55 in shares of stock. The consideration was structured to be equivalent in value, though the cash payment appealed much more to arbitrageurs.

- A key problem for arbs and other target firms' shareholders is to assess the probability of other shareholders' actions. Nowhere does the game-like nature appear in takeovers than in this fact: like the card-player who must assess the hands and probabilities of other players, the arb in this situation must assess the likely actions of other investors.

- Collaboration among selling shareholders may pay. This perhaps explains the appearance of ad hoc committees of target shareholder groups, and the appeals to take action together.

- Securities regulation regimes that favor equitable treatment of all shareholders and "level playing field" conditions will discourage asymmetric incentives that lead to Quadrant IV outcomes.

- Time is very valuable to the target shareholders, and is the enemy of the bidder. Searching for a white knight buyer, developing a recapitalization plan, or mounting defenses take time. To the extent that the bidder can hasten the target shareholders' decision process, the less effective is bound to be the target management's evasive action.

8. To set a bid price: think like an investor.

Given the panoply of laws and takeover defenses, the bidder faces the reality that the main instrument of success is *deal design*. In an earlier chapter, I outlined the range of possible elements of acquisition terms: price, form of payment (fixed, semi-fixed, contingent, side), timing, commitments, and incentives. The task of a bidder in a hostile takeover is to fashion terms such that the acquisition succeeds, while preserving as much value as possible for the bidder. In the discussion that follows, the focus will be on price, although in reality, form of payment and the other dimensions will be very important considerations well.

Given that arbitrageurs are the significant decision-makers in a hostile tender offer, it is reasonable to assume that the highest price offered takes the company. The bidder presumably will offer to purchase shares at a premium to the pre-existing share price. They key issue is how large the premium should be? The range of choice for the bid premium will be bounded on the high side by the bidder's most optimistic estimate of the target's intrinsic value (using DCF, multiples and other valuation approaches to achieve this "high" value). At first glance, it would seem that the low end of the premium range would be determined by the pre-existing share price. But the bidder needs to assume the possibility that the target might undertake a self-initiated restructuring that would release value to its shareholders in excess of the current share price--a leveraged restructuring would be an example of such an action. Since it is reasonable to assume that target management want to keep their jobs, and that restructuring is the only alternative available if a white knight cannot be induced to enter the bidding, then in effect, this restructuring value becomes the other bound in the range of bid premia. Exactly where, within this range, the bidder will choose to make its offer is a matter of how likely the bidder

believes a competing bidder will enter the action.

The advice to a bidder in a situation like this is to *think like the target shareholder*. The shareholder's choice is simple, accept the tender offer if:

Value of Tendering $ Expected Value of Not Tendering

Since the value of the bidder's offer can be reasonably estimated, the core of the analysis lies in estimating the value of not tendering (EVNT). EVNT is a simple average of share prices under two uncertain outcomes: (a) no shares are tendered to the raider, the takeover fails, and share prices subside to the *ex ante* price[6]; and (b) no shares are tendered to the raider, but they are tendered to a higher competing bidder who buys the firm. These prices are multiplied times their probability of occurrence, and summed:

$$EVNT = (\text{Share Price}_{\text{No Competing Bid}} * \text{Probability}_{\text{No Competing Bid}}) + (\text{Share Price}_{\text{Competing Bid}} * \text{Probability}_{\text{Competing Bid}})$$

Thus, to succeed in the bidding, the raider must set the bid price somewhat higher than EVNT. Of course, this requires estimates of probabilities and the dollar offer of a competing bidder. If a decision-maker is uncomfortable with this judgment, the EVNT formula could be solved in reverse for those probabilities and competing bid prices that yield outcomes just better or worse than the bidder's possible offers. Then, the bidder can make some judgment about the reasonableness of the range of competing offers and probabilities, as a final step to preparing a bid price.

To illustrate how the EVNT equation can be used to help frame a bidder's analysis, consider the following example. A hostile bidder wants to prepare an initial bid for ABC Corp. ABC's current share price is $45. Under an aggressive restructuring plan (calling for asset sales, and a leveraged recapitalization), ABC would be worth $65 per share. The hostile bidder envisions some synergies with ABC, which, if applied entirely to the value of ABC, would justify a maximum bid of $77 per share. Plainly, the hostile bidder would like to appropriate as much of the middle range for itself as possible. At what price should the bidder commence the hostile offer?

As discussed earlier, the Raider's strategy will be heavily influenced by the Target's ability to counter with a value-creating restructuring plan. Thus, the Raider could consider two scenarios:

[6] When a hostile tender offer is successfully deflected, we observe that the target share price tends to subside back toward the level prevailing *ex ante*. Whether it returns to the *ex ante* price exactly, will depend on expectations of further takeover bids or possible changes in management policies.

- **Possibility A: Target does not restructure**. In this instance, if the Raider's bid fails to attract the requisite number of shares, the Target's share price could be presumed to fall back to the *ex ante* level, $45.
- **Possibility B: Target announces a restructuring.** Here the shareholders would be unlikely to part with their shares for less than $65, if they were highly confident of the Target's ability to deliver this value. For simplicity, let's assume that the restructuring value is highly likely.

Table 4 gives EVNT for various combinations of competing bid prices and probabilities in the first scenario. The shaded region indicates the break-even values for each probability and bid that the Raider must top in order to motivate the arbs to favor the Raider's bid.. For instance, an competing bid of $70 and a 50 percent probability suggests that the Raider must bid *more* than $57.50 to motivate the arbs to tender their shares to the bidder. The task of the bidder must be to assess whether any other firm could possibly afford $70 per share, which is the same as asking whether the probability of a bid at $70 is really 50 percent.

Table 4

EVNT if the "Default Value" is the Target's *Ex Ante* Share Price (Possibility A)

		Value of Competing Bid									
		$ 45.00	**$ 50.00**	**$ 55.00**	**$ 60.00**	**$ 65.00**	**$ 70.00**	**$ 75.00**	**$ 80.00**	**$ 85.00**	**$ 90.00**
Probability	**10%**	$ 45.00	$ 45.50	$ 46.00	$ 46.50	$ 47.00	$ 47.50	$ 48.00	$ 48.50	$ 49.00	$ 49.50
Of A	**25%**	$ 45.00	$ 46.25	$ 47.50	$ 48.75	$ 50.00	$ 51.25	$ 52.50	$ 53.75	$ 55.00	$ 56.25
Competing	**50%**	$ 45.00	$ 47.50	$ 50.00	$ 52.50	$ 55.00	$ 57.50	$ 60.00	$ 62.50	$ 65.00	$ 67.50
Bid	**75%**	$ 45.00	$ 48.75	$ 52.50	$ 56.25	$ 60.00	$ 63.75	$ 67.50	$ 71.25	$ 75.00	$ 78.75
	90%	$ 45.00	$ 49.50	$ 54.00	$ 58.50	$ 63.00	$ 67.50	$ 72.00	$ 76.50	$ 81.00	$ 85.50

Table 5 summarizes the results for the second scenario. Comparing the shaded areas of both tables shows that the Target's restructuring considerably reduces the buyer's room to maneuver.

Table 5

EVNT if the "Default Value" is Driven by Target's Restructuring (Possibility B)

		Value of Competing Bid									
		$ 45.00	**$ 50.00**	**$ 55.00**	**$ 60.00**	**$ 65.00**	**$ 70.00**	**$ 75.00**	**$ 80.00**	**$ 85.00**	**$ 90.00**
Probability	**10%**	$ 63.00	$ 63.50	$ 64.00	$ 64.50	$ 65.00	$ 65.50	$ 66.00	$ 66.50	$ 67.00	$ 67.50
Of A	**25%**	$ 60.00	$ 61.25	$ 62.50	$ 63.75	$ 65.00	$ 66.25	$ 67.50	$ 68.75	$ 70.00	$ 71.25
Competing	**50%**	$ 55.00	$ 57.50	$ 60.00	$ 62.50	$ 65.00	$ 67.50	$ 70.00	$ 72.50	$ 75.00	$ 77.50
Bid	**75%**	$ 50.00	$ 53.75	$ 57.50	$ 61.25	$ 65.00	$ 68.75	$ 72.50	$ 76.25	$ 80.00	$ 83.75
	90%	$ 47.00	$ 51.50	$ 56.00	$ 60.50	$ 65.00	$ 69.50	$ 74.00	$ 78.50	$ 83.00	$ 87.50

This analysis shows the enormous advantage that accrues to the first mover in hostile tender offers. Arbs must weigh the concrete offer by the first bidder against uncertain offers by potential competing bidders. Uncertainty discounts the value of these potential competitors such that it requires a relatively high probability of a high bid to dissuade arbs from tendering into a certain offer.

The practitioner (bidder or target) can use this analysis as follows:

1. Bound the bidding range on the low side by either the *ex ante* share price, or the value per share produced by any restructuring plan.
2. Set an upper limit on the bidding range, determined by the value of the target firm reflecting all synergies, and optimistic assumptions about operations and the ability to use financial leverage aggressively.
3. Estimate the EVNTs for various combinations of competing bids and probabilities--this is equivalent to the shaded areas in Tables 4 and 5.
4. After reflecting on competing bidders, their bid prices, and the likelihood of their entry into the contest, set an offering price that slightly exceeds the EVNT for that cell in your table.

Finally, EVNT offers general insights on two classic competing strategies: a) start with a high bid; and b) start with a low bid. Each has advantages and disadvantages:

- **Bid high.** A high initial bid is known in M&A parlance as a "bear hug"--presumably referring to the apparent expression of affection that kills all resistance. This strategy deters competitors and pressures the target's directors to accept the offer. Knowing this, and seeing the high offer, arbs will tend to support the bid. Accordingly, the high bid strategy probably wins the contest. The chief disadvantage of this strategy is that it gives value to target shareholders that might have been retained by the bidder with a lower-priced opening bid. Generally, this strategy is appropriate where the bidder fears other competitors, or is impatient.
- **Bid low.** This has the advantage of saving the gains from takeover for the bidder. But it may attract competing bidders, and almost certainly invites the target to announce an internal restructuring. This approach probably leads to a longer contest. The risk to the bidder is

higher. Generally, this strategy is appropriate where the bidder is patient and/or confident of there being no or few other competing bidders.

9. Conclusion: the game has implications for design and defense of takeovers

The discussion in this chapter suggests that practitioners need to assess and exploit uncertainty in the design and execution of hostile offers. Specific implications include these:

- Clarity about the value of the target is an absolutely essential foundation for takeover attack and defense. Value should be estimated from a variety of perspectives: current stand-alone status, status if restructured or recapitalized, value to the primary hostile bidder with synergies, and value to potential competing bidders with their synergies. At the very least, this valuation effort anticipates the likely analysis of arbitrageurs who will figure importantly in deciding the contest.

- The hostile bidder should take actions that shorten the time to outcome, that forestalls collaboration among target shareholders, that pre-empts potential competitors, that reduces investor uncertainty about the value of the bid, and that generally pressures the target board to cooperate. The target firm should do the opposite: delay, explore restructuring and white knight bidders, cast uncertainty on the hostile bidder and its bid, and generally pressure the target board not to cooperate.

- The focus of both attacker and defender should be the investor, particularly the arbitrageur. The arb is unimpressed with appeals to loyalty, tradition, or vague strategies. Cash value delivered in timely fashion will be decisive. Winning the game, then, is largely a matter of maximizing value.

- Government influence in the takeover game is immense. Courts and government agencies can intervene in the game often in unpredictable ways. An important second "front" for both attacker and defender to manage is the observance and exploitation of case law.

For Further Reading

Auerbach, Alan J., *Mergers and Acquisitions*, Chicago: University of Chicago Press, 1988.

Brams, Steven J. *Rational Politics, Decisions, Games, and Strategy*, Boston: Academic Press, 1985.

Fleisher, Arthur, Jr., and Alexander R. Sussman, *Takeover Defense*, 5th ed., (2 vols.) Aspen Law & Business, New York: Aspen Publishers, Inc., copyright 1997.

Gilson, Ronald J., and Bernard S. Black, *The Law and Finance of Corporate Acquisitions*, second edition, Westbury, The Foundation Press, Inc., 1995.

John McDonald, *Strategy in Poker, Business & War*, New York: W.W. Norton, 1989

Rapoport, Anatol, and A.M. Chammah, *Prisoner's Dilemma*, Ann Arbor: University of Michigan Press, 1965.

Smith, Adam, *the Money Game*, New York, Dell, 1969.

Thaler, Richard H., *The Winner's Curse: Paradoxes and Anomalies of Economic Life*, Princeton: Princeton University Press, 1992.

Wyser-Pratte, Guy P., *Risk Arbitrage II*, New York: Salomon Brothers Center for the Study of Financial Institutions, Graduate School of Business Administration, New York University, Monograph 1982-3-4

Endnotes

a. Quoted from Keynes' *General Theory* on page 16, Smith (1969).

b. John McDonald, *Strategy in Poker, Business & War*, New York: W.W. Norton, 1989, page 22.

c. This example was drawn from "Takeover 1997 (A)," a Darden case study, UVA-F-1170, co-authored by Robert Bruner, John P. McNicholas, and Edward Rimland.

d. Quoted from Guy P. Wyser-Pratte, *Risk Arbitrage II*, New York: New York University, Salomon Brothers Center for the Study of Financial Institutions, Monograph 1982-3-4, page 7.

e. The prisoner's dilemma was first discussed in Anatol Rapoport and A.M. Chammah, *Prisoner's Dilemma*, Ann Arbor: University of Michigan Press, 1965.