Does Governance Pay, or Is Entrenchment the Way? Merger Gains and Antitakeover Provisions

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Abstract

This paper develops and tests a theory of corporate governance based on competition in the market for corporate control. Antitakeover provisions allow target shareholders to commit ex-ante to prolonging the takeover process. Results support the hypothesis that this commitment is valuable in concentrated industries where acquirers overbid to retain market power. Using a measure of industry concentration based on domestic market power and external pressure, I document that firms in concentrated industries are more likely to have antitakeover provisions. Consistent with my commitment hypothesis, I find a positive interaction effect of concentration and antitakeover provisions on shareholder wealth. In particular, an increase in industry concentration mitigates the negative price impact of antitakeover provision adoption announcement and strengthens the positive impact of antitakeover provisions on target premiums. Employing a novel identification strategy, I find that the mediating effect of concentration is not spurious. My findings suggest that antitakeover provisions are reliably associated with higher shareholder value in concentrated industries, but lead to lower shareholder value in unconcentrated industries.

1 Introduction

This paper develops and tests a model that explains to what extent and when competition in the market for corporate control affects shareholder rights. I study shareholders' decision to adopt antitakeover provisions when the takeover process can result in value-destroying bidding competition. I develop a theoretically motivated measure of overbidding based on industry concentration. I find that antitakeover provisions are reliably associated with *higher* shareholder value in concentrated industries, but lead to *lower* shareholder value in unconcentrated industries.

Much of the corporate governance literature that explains the value of shareholder rights rests on a stylized representation of the market for corporate control. For example, Grossman and Hart (1980) focus on the case of a single potential bidder who can acquire control of the target if its first attempt is successful, or lose its potential gains from control otherwise. Even in bargaining models (e.g. Stulz (1988)), where shareholders accept restrictions of their control rights in hopes of receiving higher takeover offers, there is no scope for the everyday realities of the takeover process, such as competition among bidders or protracted negotiations.

While this approach has provided important insight into the broad consequences of weak shareholder rights, its representation of the market for corporate control is unrealistic. Anecdotal evidence and recent empirical studies show that the takeover process often involves value-destroying bidding wars for scarce targets. Take, for example, the string of topping bids by Whirlpool to counter Ripplewood for Maytag, or by Qwest to counter Verizon for MCI,[1] or the Paramount contest between QVC and Viacom in the early 1990s, in which Hietala, Kaplan, and Robinson (2003) estimate that Viacom overpaid by more than $2 billion.

I argue that value-destroying competition in the market for corporate control leads to significant distortions in corporate governance. My main observation is that antitakeover provisions, by transfering decision-making authority to the board of directors, allow shareholders to commit ex-ante to prolonging the takeover process. This commitment is critical for acquirers who fear the prospect of being dragged into a bidding war involving rounds of offers and counteroffers, each carrying a significant negative wealth effect. In this case, I show that antitakeover provisions induce acquirers to sweeten their initial bid offers. Therefore, my commitment hypothesis holds that whenever competition for a target results in overbidding, target shareholders benefit from antitakeover provisions.

The key contribution of my paper is to develop a theoretically motivated measure of overbidding. I build on the recent literature on auctions with externalities (Jehiel, Moldovanu, Stacchetti (1999), Jehiel and Moldovanu (2001)) and exploit the link between industry structure and the incentives of raiders to bid in takeover contests. In concentrated industries, each bidder exerts a negative external effect on others, since when the takeover is completed, his rivals lose market shares. I show that due to this effect, potential acquirers overbid, i.e., they bid above their valuation in order not to lose market shares. As a consequence, overbidding should be more likely in concentrated industries in which, if the target is acquired, one firm can gain market dominance. I combine two measures of concentration: a domestic measure, which is based on industry-level market shares, and an external measure, which is based on industry-level import penetration.

While theoretically motivated, my overbidding measure is consistent with anecdotal evidence of value-destroying bidding wars for scarce targets in concentrated industries. In the mid 1990s, the railroad industry's eight-month Conrail takeover contest between CSX and Norfolk Southern produced a 64% premium for Conrail. Dominance in railroad freight hauling in the eastern U.S. was at stake after the consolidation wave led by the merger of Union Pacific with Southern Pacific and Burlington Northern with Santa Fe in 1995. Esty (1998) details that the financial projections of both CSX and Norfolk Southern for the proposed merger each included estimates of the loss in revenues resulting from losing Conrail to a competitor. An investment banker described the basic idea effectively to the *Financial Times*: "When a valuable property looks like it might be lost to a competitor, companies seem more willing to move to prevent it."[2]

I apply my overbidding measure to a panel data set of publicly traded corporations in the U.S. between 1990 and 2001 for which information on ATPs is available. As bidding wars are more likely to destroy value in concentrated industries, my commitment hypothesis holds that firms in concentrated industries are more likely to have ATPs. Using a variety of ATP indices[3] and controlling for firm characteristics, such as size, age, and financing; managerial characteristics, such as CEO compensation; and other governance mechanisms, such as institutional ownership and CEO equity incentives, I find strong empirical support for my hypothesis: firms in concentrated industries are, on average, more likely to have ATPs, and this difference is both statistically and economically significant. To rule out the possibility that my results are due to endogeneity or omitted variable bias, I use changes in trade costs as instruments and find that the link between concentration and ATPs is not spurious.

Next, I test one of the central predictions of my commitment hypothesis. Since acquirers are willing to sweeten their initial bid offers only when they fear value-destroying bidding wars, my model implies that ATPs increase target shareholder wealth, but only in concentrated industries. In a sample of 2,346 takeover contests for exchange-listed target firms from 1975 to 1996 I find that acquisition announcements for firms with ATPs generate higher target premiums than those made for firms without ATPs and the difference is significant both statistically and economically, but only in concentrated industries.

To shed further light on the association between firm value and ATPs, I consider several measures of firm value. These are Tobin's Q, operating performance as measured by firm's return on assets (ROA), and abnormal returns. These alternative measures provide further support to my commitment hypothesis: controlling for firm, managerial, and other governance characteristics, I find that ATPs are associated with higher firm value in concentrated industries and reduced firm value in unconcentrated industries. In both cases, the association between ATPs and firm value is not only statistically significant, but also economically meaningful.

For my performance results, simultaneity is a potentially important concern: although ATPs can lead to changes in firm value, a selection effect might be at work as well. For example, high-value firms could decide to adopt ATPs in concentrated industries to protect themselves from a takeover. To rule out simultaneity, I estimate a system of simultaneous equations that allows ATPs to affect firm value, while properly controlling for the effect of firm value on ATPs. To rule out spurious correlation, I explore a novel approach to identify the causal link between ATPs and firm value. This approach exploits differences in the variability of firm value between the mid-1970s to mid-1980s compared to the mid-1980s to mid-1990s. When I replicate my battery of performance tests while allowing for reverse causality within an identified system of simultaneous equations, I continue to find that ATPs have significantly positive effects on shareholder wealth, but only in concentrated industries.

I also provide complementary evidence that the interaction of concentration and ATPs has explanatory power for takeover characteristics other than premiums. In particular, I find that ATPs are positively associated with the likelihood of an all-cash payment, but only in concentrated industries. I do not find evidence of an association between ATPs and takeover success likelihood or takeover form, i.e., the likelihood that the takeover results in a contest or auction, in concentrated industries. I find that ATPs are only weakly and negatively associated with takeover success and auction likelihood in unconcentrated industries. Finally, I find that takeover contests are reliably associated with lower acquirers' returns, but only in concentrated industries.

My commitment hypothesis has several policy implications. Since they have no reason to take into account the interests of potential entrants, target shareholders will typically adopt too many ATPs and excessively limit competition for corporate control. As a consequence, I share with traditional shareholder-capture theories the recommendation of promoting competition in the market for corporate control. However, my findings suggest that policies aimed at promoting competition for corporate control by limiting board entrenchment may induce a significant redistribution of wealth away from targets to acquirers. My model also provides an alternative angle on the governance role of product markets, highlighted by Hart (1981), in that pro-competitive antitrust interventions are likely to reduce the scope for weak governance.

The remainder of the paper is organized as follows. Section I outlines a simple model that delivers my main prediction that industry concentration leads shareholders to adopt ATPs. Section II introduces my data and describes the construction of my concentration measure. Section III provides evidence that concentration increases the likelihood of adoption of ATPs. Section IV documents a *positive* relation between ATPs and shareholder wealth, but only in concentrated industries. Section V concludes.

2 A Model of Antitakeover Provisions

I develop a simple model to illustrate the link between governance and the incentives of acquirers to bid in a takeover contest. The key feature of the model is that, by including ATPs in the firm charter, shareholders commit ex-ante to prolonging the time that the initial bid is outstanding, hence effectively increasing the odds that a second bidder may come along.

My overbidding story fits nicely with the events that led to the recent merger between the Franco-German Aventis and the French Sanofi-Synthelabo. The Aventis board rejected Sanofi's initial bid of 46.18 billion Euros ($57.15 billion), was challenged in court for adopting a poison-pill, and responded by having friendly merger talks with Novartis, the largest drug manufacturer in Switzerland[4]. Importantly, in its April 22 issue, the *Financial Times* reported a person close to Aventis as saying that Aventis had acknowledged that the combination of poison-pill and friendly talks was aimed at putting pressure on Sanofi to raise its bid[5]. On April 26, although no official bid from Novartis was ever made, the Aventis board accepted a sweetened offer from Sanofi, with a 14% increase to 55.3 billion ($65 billion) and a nearly doubled payment in cash. The merger was finalized by the summer[6].

The model has three dates, $t = 0$, 1, and 2. The timing of events is summarized in Figure 1. At $t = 0$, shareholders, facing a positive probability of receiving a takeover offer at $t = 1$, determine whether to adopt ATPs, $\alpha \in \{0, 1\}$where $\alpha = 1$ denotes the decision to adopt ATPs and $\alpha = 0$ denotes the decision not to adopt ATPs. Adopting ATPs involves a cost, K, which I interpret as the agency cost of entrenched boards. All firms compete in the product market at $t = 2$, collect profits, and are liquidated. For simplicity, I set the interest rate to zero. Let π_S denote the target value if there is no takeover.

At $t = 1$, a company interested in buying the firm arrives. This potential buyer, or raider, has higher valuation for the firm, or target, due to a synergy from combining the assets of two firms. Enhanced efficiency allows raider i to derive profit $\pi_i > \pi_S$ at $t = 2$, the product market competition phase. I denote buyer i's pure valuation for the target (i.e., its profit from acquiring the target) by v^r.

The raider approaches the target's board by making a take-it-or-leave-it offer, P. If the board accepts the offer, the buyer pays P to the target, takes the target over, and derives value $v - P$. If the board rejects the offer, the raider has two options: go hostile, by making a direct tender offer to the firm's shareholders, or renegotiate with the board. This decision crucially depends on whether the target has ATPs. If the target has no ATPs, a hostile offer will be approved regardless of the board's position as long as shareholders deem the offer acceptable. In this case, the raider pays P to the target and derives value $v - P$. With ATPs, however, the board can credibly threaten to reduce the value that the raider derives from the merger whenever the raider goes hostile[7]. Formally, in this case the raider pays P to the target and derives value $v - P - H$, where $H > 0$ reflects value-reducing takeover defenses.

Thus, with ATPs, upon initial rejection of the offer, the raider may want to repeat negotiations with the board rather than bypass the board and make a direct tender offer to the target's shareholders. For simplicity, I assume that the second offer would not be resisted by the board[8], so that negotiations per se do not have any value for the target. However, the raider faces a risk that, with positive probability γ, one more bidder arrives during negotiations. In this case, the raider will have to bid for the target in a takeover contest.

The rules of the contest are those of a second-price sealed-bid auction with no reserve price. my key observation is that product market competition outcomes at $t = 2$ make firms' valuations for the target interdependent. Let p be the payment that the winning bidder makes to the target. Taking into account product market outcomes at $t = 2$, the utilities of the firms at $t = 1$ are as follows: p for the target; $v - p$ for the winning bidder with private valuation v; $\varepsilon < 0$ for the losing bidder. The extended form game representation of the model setup is summarized in Figure 2.

2.1 Value-Destroying Bidding Competition in Concentrated Industries

I start by discussing the payoffs to the bidder and the target in the case where, following an initial rejection by the board, bidding competition takes place. The payoffs do not depend on whether the target has ATPs or not (I have assumed that the target removes its takeover defenses in case of bidding competition). The initial bidder's valuation is v^r, and it is private information. The second bidder's pure valuation (synergy) is private information, and is drawn from the interval $[\underline{v}, \overline{v}]$ with positive density f, cdf F, independently of the first bidder's valuation.

Product market competition takes place at $t = 2$ and introduces non-trivial considerations in the firms' willingness to bid. More precisely, if firm i wins the auction, its payoff will be the profit of the more efficient merged firm, π_i^W, less the price it has to pay for the takeover of the target. If firm i loses the auction, its payoff will be π_i^L. If synergies for the acquiring firm are high enough, i.e. if $s \geq \frac{A-c}{4}$, π_i^L is lower than the pre-merger profit. Thus, firms' maximum willingness to pay for the target will depends on the size of the synergy s.

After the merger, the losing firm's net value is $\pi^L(s)$. The winning firm's net value is its post-merger profit minus the price it pays for the target, $\pi^W(s) - \max\left(\pi^W(s) - \pi^L(s), \pi_N\right)$. The net profit of the winning firm is decreasing in s and, in the case of identical synergies, it is going to be equal to the net profit of the losing firm. The reason for this is that in order to win the auction, the winner has to bid up to the value of the losing firm, which in this case is the same as the value of the winner. For high enough synergy value, both the winner and the losing firms end up worse-off than they were before the merger.

I normalize to zero the target shareholders valuation of the target, and I assume that $\underline{v}$ is sufficiently high: $\underline{v}F(\underline{v}) \geq 1^9$. The takeover contest is then equivalent to a second-price auction.

Definition 1 *A vector of bidding strategies, $\beta^*(v) = (\beta^*(v_i), \beta^*(v_j))$ constitutes an equilibrium if, given externality ε, (1) $\beta^*(v_i)$ maximizes bidder i's expected payoff given rival's bidding strategy $\beta^*(v_j)$; and (2) $\beta^*(v_j)$ maximizes bidder j's expected payoff given rival's bidding strategy $\beta^*(v_i)$.*

In concentrated industries, a successful merger by one firm entails a loss to all its rivals since they now have a more efficient competitor. As a result, all firms bid aggressively as they become averse to losing and are willing to preempt their rivals. The optimal bidding strategy is to bid

$$\tilde{\beta}(v_i) = v_i - \varepsilon > v_i \tag{1}$$

since $\varepsilon < 0$. To see this, first assume that buyer 2 bids according to the optimal strategy $\tilde{\beta}(v_2)$ which is monotonically increasing and differentiable. Buyer 1's expected utility given that he has type π_1 and makes a bid b is:

$$U(v_1, b) = E\left[v_1 - \tilde{\beta}(v_2) | \tilde{\beta}(v_2) \leq \tilde{\beta}^{-1}(b)\right] + E\left[\varepsilon | \tilde{\beta}(v_2) > \tilde{\beta}^{-1}(b)\right]$$

In deciding on a bid, buyer 1 weighs the payoff from winning, $v_1 - \tilde{\beta}(v_2)$, against the payoff from losing,

ε. Using $\tilde{\beta}(v_i)$, I have that $v_1 - \beta(v_2) - \varepsilon = (v_1 - v_2)$. Hence, bidding above $\beta(v_2)$ is optimal if $v_1 \geq v_2$, and bidding below $\beta(v_2)$ is optimal if $v_1 \leq v_2$. By the monotonicity of the function $\beta(v_2)$, the bidding function $b(v_1) = \beta(v_1)$ satisfies all these optimality requirements for all v_1.

The following Proposition summarizes equilibrium behavior in bidding contests with antitakeover provisions.

Proposition 1 $\forall v \in [\underline{v}, \overline{v}]$, $\underline{v} \geq 0$, *the bidding strategy defined by*

$$\beta(v_i) = v_i - \varepsilon$$

constitutes a unique Nash equilibrium. With symmetric synergies, both firms will bid $\pi_i^W - \pi_i^L$ *in every equilibrium.*

Proof. *See Appendix A.* ■

This proposition shows that bidders in concentrated industries tend to overbid, in the sense that they bid in excess of their true valuation for the target, the synergy value v. Not surprisingly, target shareholders, who end up receiving the full value of the negative externality in addition to any gains from bids to realize synergies, benefit from the fierce competition between the bidders. The expected revenues of the target are given by

$$U_S = E\left[v_2 - \varepsilon | v_2 \leq v^r\right] + E\left[v^r - \varepsilon | v_2 > v^r\right] = 2E\left[(v - \varepsilon)(1 - F(v))\right] \tag{2}$$

I denote expected payoffs from the takeover contest to the initial bidder and the target by U^r and U_S, respectively.

Example: With synergies drawn from a uniform distribution with support $[0, 1]$ and $|\varepsilon| < 1$, the expected payoff to the raider is $U^r = (\pi^r)^2 - \frac{\pi^r}{2} - \varepsilon$ and the expected payoff to the target is $U_S = \frac{1}{3} + \varepsilon$. Note that $U^r < v^r \; \forall v^r$.

2.2 Takeover Bidding Strategies With and Without ATPs

Having established the payoffs to the initial bidder and the target in case a takeover contest takes place, I now show that ATPs alter the initial offer the raider makes. I model the takeover process as a two-stage game. In the first stage, a bidder, who can derive a synergy of v by taking over the target, makes an initial offer P to the target's board, which the board has the power to accept or reject. Whenever the initial offer is accepted, the bidder pays P to the target and derives value $v - P$. If the initial offer is rejected, the game proceeds to the second-stage, where the bidder has the option to either revise its offer and propose it to the target's board again, a friendly strategy I denote by F, or bypass the board and make a direct tender offer to the target's shareholders, a hostile strategy I denote by H. I solve this game by using backward-induction.

In the second-stage, the raider has to decide whether to go hostile, H, or to return to the board with a new offer, F. The payoff to F depends on whether there's a second bidder or not. With probability γ, a second bidder arrives and a takeover contest takes place, resulting in expected payoffs (U^r, U_S), discussed in the previous subsection. With probability $(1-\gamma)$, no rival will contest the offer. As, by assumption, the game ends if no agreement is reached, the raider's offer in this case is $P = \pi_S$, i.e. the reservation (status-quo) value of the target, resulting in expected payoffs $(\pi_S, v^r - \pi_S)$.

The payoff to H, on the other hand, depends crucially on whether the target has ATPs. With no ATPs, the raider can successfully obtain control of the target by making a tender offer of π_S, since target shareholders cannot commit not to sell above the status-quo value. In this case, the expected payoff to the raider from going hostile is $v^r - \pi_S$. With ATPs, even if target shareholders agree to tender at π_S, the raider cannot gain control of the target until it can replace the incumbent board. I capture the cost to the raider from this delay by assuming that ATPs destroy the value from acquisition by tender offer by a fixed amount H, so that the payoff from going hostile is $v^r - \pi_S - H$.

The following Proposition summarizes the raider's second-stage equilibrium strategy:

Proposition 2 *When the target has no ATPs, going hostile is the dominant second-stage strategy for the raider, $\forall v^r$. With ATPs, for effective takeover defenses, i.e. if $H \geq \gamma\left(\frac{1}{2}+\varepsilon\right)$, going friendly is the dominant second-stage strategy for the raider, $\forall v^r$.*

Proof. *See Appendix A.* ■

In the first-stage, while shareholders accept any offer that exceeds π_S, to induce the board to accept the raider needs to offer at least the reservation value of going to the second-stage to the target, which depends on whether the target has ATPs or not. The offer that makes the board indifferent between accepting and rejecting depends on whether or not shareholders adopted ATPs, i.e. $\alpha = 1$ or $\alpha = 0$, respectively, and is given by:

$$P(\alpha = 1) = \gamma U_S + (1-\gamma)\pi_S = \pi_S + \gamma(U_S - \pi_S) > \pi_S \tag{3}$$

$$P(\alpha = 0) = \pi_S \tag{4}$$

Whether the target receives this offer depends on the synergy (type) of the raider. If the target has no ATPs, then it always receives $p\left(\alpha=0\right)$, since $v^r \geq \pi^S \; \forall v^r$. If the target has ATPs, then the raider will offer $p\left(\alpha=1\right)$ as long as $\gamma\left(v^r - U^r - \left(U_S - \pi_S\right)\right) \geq \pi_S$. Denote v^r that solves this π^*.

Note that the target's expected revenue, whenever it has chosen $\alpha = 1$, is $P\left(\alpha=1\right), \forall v^r$.

2.3 Shareholders' Decision to Adopt ATPs

Target shareholders' expected revenues from having chosen to adopt ATPs, denoted by $p\left(\alpha=1\right)$, do not depend on the raider's synergy, v^r. Intuitively, this is due to the fact that target shareholders are indifferent between having the board receive and accept an initial offer of $p\left(\alpha=1\right)$, or having the board reject that offer and receiving its expected value equivalent from the second-stage game. Combining equations (3) and (4), I can derive the expected value of adopting ATPs for target shareholders, $V\left(\alpha=1\right)$, as:

$$V\left(\alpha=1\right) = p\left(\alpha=1\right) = \pi_S - K + \gamma\left(U_S - \pi_S\right)$$

The expected revenues of target shareholders if they do not adopt ATPs, $V\left(\alpha=0\right)$, are:

$$V\left(\alpha=0\right) = p\left(\alpha=0\right) = \pi_S$$

To isolate the effect of overbidding, I assume that the cost of entrenchment is high enough to offset the expected benefits to the target from bidding competition in the absence of overbidding. Formally this assumption implies setting the entrenchment cost, K, such that the expected value of adopting ATPs for target shareholders equals π_S or $\gamma\left(U_S^{\varepsilon=0} - \pi_S\right) = K$ whenever $\varepsilon = 0$. The following Proposition summarizes the effect of overbidding on target shareholders' decision to adopt ATPs:

Proposition 3 *Whenever there is value-destroying bidding competition between acquirers, i.e. $\varepsilon < 0$, target shareholders adopt ATPs, i.e. $\alpha^* = 1$. Conversely, if bidding competition between acquirers is not value-destroying, i.e. $\varepsilon = 0$, target shareholders' optimal choice is not to adopt ATPs, i.e. $\alpha^* = 0$.*

Proof. *See Appendix A.* ■

2.4 The Role of ATPs for Society

I have established that it is optimal for target shareholders to adopt ATPs whenever there is value-destroying bidding competition between acquirers. However, target shareholders have no reason to take the interests of excluded bidders into account, and they will typically include too many ATPs in their charters. As a consequence, they will excessively limit competition for corporate control.

To see this point, denote by W the expected social revenues associated with ATPs. These revenues are given by:

$$W = 2E\left[(v+\varepsilon)(1-F(v))\right]$$

Since ε is negative, I obtain $W < U_S$, for $\forall v$. Thus, denoting the socially optimal level of ATPs by α_S, the following obtains

Proposition 4 *Target shareholders adopt "too many" ATPs, i.e.* $\exists \underline{\varepsilon}, \overline{\varepsilon} > 0$, *s.t.* $\forall \varepsilon \in [\underline{\varepsilon}, \overline{\varepsilon}]$, $\alpha^* = 1 > 0 = \alpha_S$.

Proof. *See Appendix A.* ■

Since target shareholders excessively limit competition for corporate control, my overbidding-based explanation for entrenchment has policy implications. I share with traditional shareholder-capture theories the recommendation of promoting competition in the market for corporate control. However, my findings suggest that policies aimed at promoting competition for corporate control by limiting board entrenchment may induce a significant redistribution of wealth away from targets to acquirers.

Finally, my overbidding story provides an alternative angle on the governance role of product markets, highlighted by Hart (1981), since pro-competitive antitrust interventions are likely to reduce the scope for weak governance.

2.5 Empirical Implications

Assuming all else equal, I can summarize the model's main empirically testable predictions on the effect of concentration on ATPs as follows:

PREDICTION 1: Determinants of Antitakeover Provisions. Firms in concentrated industries are more likely to adopt antitakeover provisions than firms in unconcentrated industries. The effect of concentration on antitakeover provisions is more pronounced for equity-dependent firms.

PREDICTION 2: Wealth Effects of Antitakeover Provisions. In concentrated industries shareholders benefit from antitakeover provisions, i.e. there is a positive interaction effect between concentration and antitakeover provisions on shareholder wealth. In particular, (i) an increase in industry concentration mitigates the negative impact of ATP adoption announcement on the price of the adopting firm. (ii) An increase in industry concentration strengthens the positive impact of ATPs on target premiums. (iii) An increase in industry concentration mitigates the negative impact of ATPs on the stock price of a firm.

These predictions follow immediately from Proposition 3 and form the basis for my empirical tests. The empirical analysis consists of two steps. The first step is the construction of an empirical measure of my overbidding story based on concentration. The second step is the analysis of the relation between concentration and the likelihood of adoption of antitakeover provisions (Prediction 1) and the wealth effect of antitakeover provisions (Prediction 2).

3 Data and Overbidding Measure

The commitment hypothesis predicts a positive relation between antitakeover provisions and shareholder wealth whenever bidding competition between potential acquirers is value-destroying. If competition between potential acquirers is not value-destroying, in contrast, no such relation is expected. In order to implement a test of this argument, I need to specify an empirical model relating ATPs to shareholder wealth, and also to build a proxy for the extent of value-destruction in bidding competition. In this section I tackle the latter issue. In particular, after describing my panel data set, I detail my theoretically motivated approach to measure the extent of overbidding based on the link between industry structure and incentives of acquirers to bid in a takeover contest. As illustrated by my simple model, my measure of overbidding is based on whether firms operate in concentrated or unconcentrated industries.

3.1 Data

In the next three subsections, I discuss the measurement of three categories of variables: antitakeover provisions indices, target premiums and other measures of shareholder value, and firm- and deal-specific characteristics.

ATPs indices. I use two alternative measures of antitakeover provisions for a sample of an average of 1500 publicly-traded firms for the years 1990 to 2001. The first measure is the GIM index constructed by Gompers, Ishii, and Metrick (2003), which measures the number of antitakeover provisions in a firm's charter. The data for the index is assembled and reported about every two years (1990, 1992, 1995, 1998, 2000) by the Investor Responsibility Research Center (IRRC) and the index varies between 0 and 24. Higher values of the GIM-index are associated with more ATPs.

Bebchuk, Cohen, and Ferrell (2004) argue that not all of the 24 provisions in the GIM index are effective antitakeover measures and construct a more parsimonious alternative to the GIM-index, the E-index, which uses only six provisions[10]: staggered boards, limits to shareholder bylaw amendments, limits to shareholder charter amendments, supermajority requirements for mergers, poison pills, and golden parachutes. In line with the argument in Bebchuk et al. (2004), who show that their index has a stronger association with stock returns and firm value than the GIM index and that an index of the other 18 provisions is not significantly related to firm value, my empirical tests use the E-index, but I also report the results from baseline specification using the GIM index. The GIM and E indices have a positive 74% correlation. Following Gompers, Ishii, and Metrick (2003) and Bebchuk, Cohen, and Ferrell (2004), I assume that the index remains unchanged for the years in which IRRC does not report scores[11].

Finally, to control for internal governance I build a dummy based on the presence of an institutional blockholder. I define blockholders as shareholders, external to the firm, with an ownership greater than 5% of the firm's outstanding shares. To construct this measure, I use data on institutional share holdings from Thompson/CDA Spectrum, which collects quarterly information from the SEC 13f filings. By using institutional blockholding rather than simply institutional ownership, I mitigate the problem that institutions with minor stakes have few incentives to be involved in firm-specific decisions and reduce the noise associated with picking up non-monitoring shareholders. I experiment also with an alternative measure of internal governance based on the presence of pension funds.[12]

Target premiums and other measures of shareholder value. In order to examine the relation between ATPs and shareholder value, I supplement the IRRC data set with various items from the COMPUSTAT and CRSP databases. I study 2,296 exchange-listed target firms from 1975-96 with sufficient stock return data available on the CRSP database to measure the takeover premium realized by target stockholders associated with the takeover offers.[13]

I measure target premiums by market model adjusted stock returns around the first bid. In particular, following Schwert (2000) I compute premiums as the sum of a runup component, measured as the market-adjusted return to the targets stock in the three months before the first bid [trading days (-63, -1) relative to the first bid], and a markup component, measured as the market-adjusted return to the targets stock in the six months after the first bid [trading days (0, 126) relative to the first bid], where event day 0 is the announcement date of the initial takeover bid. I use the CRSP equally-weighted return as the market return and estimate the market model parameters over the period from event day -253 to event day -64.

Firm characteristics are from the CRSP/Compustat merged industrial annual database (CCM). The following filters are imposed. Financing firms (SIC codes 6000-6999), regulated utilities (SIC codes 4900-4999), and firm-years when the firm is involved in major mergers and acquisitions (Compustat footnote codes AB) are excluded. Outliers are removed by winsorizing the extreme observations in the 1% left or right tail of the distribution. I measure cash flow as earnings before extraordinary items (item 18) plus depreciation (item 14), and capital as property, plants, and equipment (item 8). I normalize cash flow with beginning-of-the-year capital. Although my sample is limited to manufacturing firms, I check the robustness of my results to normalization by assets (item 6).

I measure Q as the ratio of market value of assets to book value of assets. Market value of assets is defined as total assets (item6) plus market equity minus book equity. Market equity is defined as common shares outstanding (item 25) times fiscal-year closing price (item 199). Book equity is calculated as stockholders equity (item 216) [or the first available of common equity (item 60) plus preferred stock par value (item 130) or total assets (item 6) minus total liabilities (item 181)] minus preferred stock liquidating value (item 10) [or the first available of redemption value (item 56) or par value (item 130)] plus balance sheet deferred taxes and investment tax credit (item 35) when available minus post retirement assets (item 336) when available. Book value of assets is total assets (item 6). I measure return on equity (ROE) as the ratio of earnings to average equity for the prior fiscal year (item 20/(item 60+ item 60_{t-1})).

Firm- and deal-specific characteristics. I consider two categories of factors that are related to shareholder value: firm and CEO characteristics and deal characteristics. I use several firm characteristics, such as age, size, and financial position, CEO characteristics, such as compensation level and structure. Firm characteristics are from the CRSP/Compustat merged industrial annual database (CCM). Outliers are removed by winsorizing the extreme observations in the 1% left or right tail of the distribution. I use the ExecuComp database to collect information on CEOs' age, tenure, equity ownership, option holdings, equity and option grants and several other compensation items. Since the ExecuComp database does not contain all companies that are part of the IRRC universe, I retrieve all missing CEO information by looking up the companies' proxy statements directly.

I consider several characteristics of takeover deals, including whether the target was successfully taken over without more than a one year interval between bids, whether other formal bids are made for this target firm, whether the payment to target shareholders is all in the form of cash, or in the form of equity, whether the deal is a tender offer, and whether the first or winning bidder is an exchange-listed company. Following Schwert (2000), I also consider a measure of hostility, Host(Factor), which is the first factor or principal component from the following three dummy variables: Host(WSJ), if the WSJ Index or DJNR characterized the bid as hostile at any time from 1975-98, including retrospective descriptions of the deal; Host(Uns), if there is either an unnegotiated tender offer for control of the target firm or a merger proposal that specifies a price; Host(Pre), if during the 12 months before an initial bid, a 13D statement is filed in which the buyer discloses an intent to seek control, or there are significant merger rumors about the target firm.[14]

Table 1 presents the summary statistics of the key variables in my data.

3.2 Overbidding Measure: Concentration

To measure overbidding, i.e. to proxy for the intensity of bidding competition, ε, I draw from the Bureau of Census and combine two variables: four-firm domestic concentration ratios,[15] which are reported quinquennially (1992 and 1997), and import penetration ratios, which are reported annually. As the product market externality is larger in more concentrated industries and smaller with more vigorous import competition, my proxy for my overbidding effect, ε, multiplies domestic concentration, by a dummy variable equal to 1 if import penetration is above sample mean. I use four-digit SIC classifications to define industry membership. Although all of the results in the paper are presented with four-digit SIC classifications, in unreported tables I replicate my findings at the three-digit level with no qualitatively different results.

Taking this approach allows me to address an important measurement problem as commonly available measures of product market concentration include only domestic producers. To fully measure the mechanism behind my main predictions, in building my measure of concentration I have to take into consideration the extent to which industries are subject to import penetration as a given level of domestic concentration might overstate the actual size of the market in industries, such as for example car makers, where domestic producers are subject to high competition from foreign companies.

In Table 1, Panel B, I present the pairwise correlations among my concentration measure and firm characteristics. Perhaps not surprisingly, there is a strong positive correlation between Concentration and firm size and age (0.141 and 0.134 respectively). However, the correlation between Concentration and Tobin's Q is positive but much weaker (0.002). Overall, these relations suggest that qualitatively my measure is capturing the desired effect.

Panel C shows summary statistics of antitakeover provisions for two subsamples of firms determined by whether my Concentration measure is high or low as defined by above or below sample mean respectively. Note that the proportion of firms with a low level of antitakeover provisions is comparable across the two subsamples. However, high adoption of antitakeover provisions is markedly more frequent in relatively more concentrated industries (for the highest level of my index the proportion more than doubles across the two subsamples from 2.36% to 6.05%). Moreover, other than in firm size, there are no significant differences in observable firm characteristics across the two subsamples. In this sense, my summary statistics suggest that my concentration measure is orthogonal to firm characteristics, at least as measured at the industry level. Figure 3 illustrates this graphically by grouping industries into concentration quintiles and plotting the frequency distribution of ATPs by concentration quintile. Clearly as one moves from lower to higher concentration quintiles the right tail of the distribution containing firms that adopt a high number of ATPs fattens significantly.

Panel D of Table 1 contains descriptive statistics on ATP-indices and firm value in concentrated and unconcentrated industries. I form two portfolios using two different classification schemes, based on the GIM-index and on the E-index. First, following Bebchuk and Cohen (2003) (Gompers, Ishii, and Metrick (2003)), firms with $E = 0$ ($GIM \leq 5$) are considered with low levels of ATPs. Those with $E \geq 4$ ($GIM \geq 14$) are firms with a relatively high level of ATPs. Firms with E (GIM) in the intermediate range are discharged. Similarly, I also divide firms into 2 groups based on whether their respective industry has above or below median concentration. Those with above sample median concentration are defined to have high concentration.

I then investigate the equity returns for the various portfolios created by sorting stocks according to the antitakeover provisions and concentration. To ensure that differences in riskiness or 'style' do not drive my results I calculate abnormal returns using the four factor model described below, which includes the three factor Fama-French (1993) model augmented by the momentum factor (see Jegadeesh and Titman (1993) and Carhart (1997)). The estimated abnormal return is the constant, or α, in the model $R_t = \alpha + \beta_1 MKT_t + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 UMD_t + \varepsilon_t$, where R_t is the excess return over the riskless rate to some portfolio in month t. MKT_t, SMB_t, HML_t and UMD_t are the returns on the market portfolio and the three portfolios that capture the size, book-to-market and momentum effects.

All firms are sorted into $2 \times 2 = 4$ portfolios, sorting all firms first on the level of antitakeover provisions and than on the level of concentration of their industry. I estimate the abnormal returns (alphas) for the 4 resulting portfolios and for two sets of long-short portfolios. First, keeping the level of concentration fixed, I estimate the abnormal returns accruing to a portfolio that buys firms with the highest takeover vulnerability and sells firms with lowest takeover vulnerability. I have two such portfolios, one for each of the two groups of concentration. Second, keeping the level of takeover vulnerability fixed, I estimate the alphas to the portfolios that buys firms with the low level of concentration and sells firms with the high level of concentration. Finally, both equally and value weighted portfolios are considered.

For both classifications, a portfolio that longs Dictatorship firms and shorts Democracy firms on average earns positive abnormal returns in concentrated industries, but negative returns in unconcentrated industries. Statistically, abnormal returns are significant only in concentrated industries. These results are most pronounced for the E-index-based classification and least pronounced for the GIM-index-based classification.

The positive relation between ATP indices and abnormal returns that I report in Panel D of Table 1 is consistent with my commitment hypothesis, but it does not allow me to draw reliable inferences, since it does not takes into account the correlations between ATP indices and other determinants of shareholder value. For example, the different abnormal returns of the dictatorship and democracy portfolios could be an artifact of the two portfolios having different acquisition characteristics, such as different frequencies of payment methods and target listing status. Therefore, in my tests of Prediction 2 I deepen my analysis of the specific channels through which ATPs affect shareholder value and, consistent with my model, focus on target premiums, while also controlling for all the important variables shown in prior research to affect target premiums.

Before turning to the effects of concentration, I acknowledge the possibility of alternative explanations of my measure, such as, for example, the competitiveness hypothesis of Hart (1983) and Scharfstein (1988a)). I take steps to distinguish my overbidding story from alternative explanations in the context of the empirical analysis that follows.

4 Test 1: Does Concentration Cause ATP Adoption?

The commitment hypothesis predicts that the likelihood of adoption of antitakeover provisions increases in concentration (Prediction 1). To test this prediction I run a battery of tests. I start with simple probit and ordered probit specifications. However, if, for example, more entrenched managers compete more aggressively and drive rivals from the market, firms with a higher level of antitakeover provisions will end up in more concentrated industries, biasing the results of my probit analysis. To address potential endogeneity and omitted variables issues, I use an instrumental variables approach based on an exogenous source of variation in my concentration measure: the downward trend in trade costs in the mid 1990s. I then check for whether my results are robust to controlling for CEO characteristics and governance mechanisms other than ATPs. Finally, I explore the interaction between financial characteristics and industry concentration.

4.1 Probit Analysis of ATPs

To test the model's prediction that the likelihood of adoption of antitakeover provisions increases in concentration (Prediction 1), I use the following general regression specification:

$$\Pr\left(E_i \geq 4\right) = f\left(\alpha + \beta C_i + \gamma X_i\right) \tag{5}$$

where firm have a high level of antitakeover provisions if their E (GIM) index is "high" with cutoff of 4 (13),[16] C is my concentration measure, and X is a set of control variables including mainly firm characteristics, i.e. age, size, and performance, as measured by market value of assets over book value of assets. X also includes antitakeover provision statutes in the state of incorporation (overall number of antitakeover provision statutes) and a dummy for whether firms are incorporated in Delaware. I also include year- and industry-fixed effects. The null hypothesis is that β, the coefficient on concentration, is equal to zero.

One alternative to controlling for industry effects would be to remove all cross-sectional variation by including firm-fixed effects in the analysis. Because my measures of antitakeover provisions do not display a sufficient amount of time-series variation, identifying the effect only from time-series variation within the firm is typically not feasible. That is, there are an insufficient number of cases of reversal of firms from high to low levels of antitakeover provisions in the same firm to draw a robust inference from any estimations. The lack of identifiable cases points to a potentially severe sample selection bias from including fixed effects in panel regressions and identifying solely out of somewhat anomalous firms with multiple antitakeover provision reversals. Finally, in order to account for serial correlation and heteroskedasticity, I estimate compute the standard errors by clustering the observations within each firm. This process treats the time series of observations within the firm as a single observation, effectively eliminating any serial correlation.

Table 2 reports my results from estimating (5). I run a set of three baseline regressions to demonstrate the effects of concentration, my proxy for ε, on antitakeover provisions: first with no additional controls, then including industry-fixed effects, and finally including industry-fixed effects as well as controls. In all specifications I find a positive and highly significant coefficient on concentration (0.184 in the specification with controls). Although this is likely to overcontrol, the result is robust to including industry effects. As predicted by my model, firms in highly concentrated industries adopt high levels of antitakeover provisions. The marginal effect of my estimates is large: moving a firm from the lowest quartile of industry concentration to the highest increases its likelihood of adopting a high level of antitakeover provision of about 50% of the unconditional sample mean. I also estimate a simple linear probability model (OLS), use GIM as an alternative measure of ATPs, and estimate a random effects model for robustness. The results are the same.

Among the control variables, I confirm previous findings of a negative and significant correlation between antitakeover provisions and Q (although this effect is not large). After controlling for Q and concentration, older firms are only weakly more likely to adopt antitakeover provisions. Interestingly, in contrast with previous findings, larger firms are weakly less likely to adopt antitakeover provisions.

Ordered probit analysis of ATPs. Clearly, although my choice in this respect is standard, one might suspect my results so far are an artifact of the choice of threshold in the antitakeover index. To address this issue I estimate a more general ordered probit model where I do not need to make assumptions about what constitutes a high level of antitakeover provisions and I can just estimate the likelihood of adopting one, versus two, versus three antitakeover measures. In general, the model's prediction can be represented by an ordered probability model with unknown thresholds, where concentration (and a linear combination of concentration and control variables) determines the estimated thresholds. In particular, I use the following general regression specification:

$$\Pr\left(ATP_i\right) = f\left(\alpha + \beta C_i + \gamma X_i\right) \tag{6}$$

where firm have a high level of antitakeover provisions if their E (GIM) index is "high" with cutoff of 4 (13),[17] C is my concentration measure and X is a set of control variables including mainly firm characteristics, i.e. age, size, and performance, as measured by market value of assets over book value of assets. X also includes antitakeover provision statutes in the state of incorporation (overall number of antitakeover provision statutes) and a dummy for whether firms are incorporated in Delaware. I also include year- and industry-fixed effects. The null hypothesis is that β, the coefficient on concentration, is equal to zero.

Table 3 reports my results from estimating (6). Also in this case I run a set of three baseline regressions to demonstrate the effects of concentration, my proxy for ε, on antitakeover provisions: first with no additional controls, then including industry-fixed effects, and finally including industry-fixed effects as well as controls. The results confirm the findings of the simple probit analysis: in all specifications I find a positive an highly significant coefficient on concentration (0.578 in the specification with controls). Again the result is robust to including industry effects, estimating a simple linear probability model (OLS), and using G as an alternative measure. As predicted by my model, firms in highly concentrated industries adopt high levels of antitakeover provisions.

Among the control variables, I confirm the findings of the simple probit analysis: a negative and significant correlation between antitakeover provisions and Q, a weak positive (negative) correlation between age (size) and antitakeover provisions.

4.2 Endogeneity: Instrumental Variables Analysis of ATPs

Up to this point, I have not addressed potential endogeneity and omitted variables issues. However, such concerns are hardly implausible. For example, if more entrenched managers compete more aggressively and drive rivals from the market, firms with a higher level of antitakeover provisions will end up in more concentrated industries, biasing the results of my analysis. Since potential endogeneity makes the interpretation of the panel estimated coefficient problematic, I need to consider exogenous sources of variation in my concentration measure.

I find such determinants in the downward trend in trade costs in the mid 1990s, thereby using the time-series variation in the cross-sectional characteristics of import penetration as an instrument for my concentration measure. The idea is that changes in trade costs are unexpected shocks determined by regulation and other conditions that are reasonably exogenous to the firms in my sample. The second stage, therefore, estimates the effect of unexpected changes in concentration, and gets around endogeneity concerns and the potential bias problems.

Before going to the results, a few observations on the motivation behind my choice of trade costs as an instrument. The 1990s decade has been hailed as the era of globalization, with trade agreements like NAFTA and the creation of the World Trade Organization bringing about substantial decline in trade costs. In fact, post-NAFTA, from 1997 to 2000, most industries have experienced large increase in import penetration. For example, even among technology industries, import penetration rates rose from 19 percent to 24.9 percent in relays and industrial controls, from 12.5 percent to 16.3 percent in switchgear and boards, from 13.2 percent to 19.4 percent in pharmaceuticals and medicines, and from 36.9 percent to 53 percent in optical instruments and lenses. Thus, it appears that reduction in trade costs contributed to higher import penetration. The effect of falling trade costs however was not homogenous across industries. Can these differences account for the variation in the level of antitakeover provisions firms adopted?

To verify that my probit estimates are not spurious, I estimate (5) through two-stages least-squares using trade costs as an instrument for my concentration measure. Trade costs are defined as the sum of ad valorem tariff and ad valorem transport costs (this definition in standard in the empirical literature on international trade. See, for example, Bernard, Jensen and Schott (2004)). Table 4 presents the results. I run a set of three baseline regressions to demonstrate the effects of concentration, my proxy for ε, on antitakeover provisions: first with no industry-fixed effects, then including industry-fixed effects, and finally including the level of import penetration as an extra control. As expected, the instrumental variables estimates are larger in absolute value than the OLS estimates in all regressions: for the case with industry-fixed effects I obtain a strongly significant coefficient of 0.775 relative to 0.184 in the previous specifications. This points to a large economic effect of concentration on antitakeover provisions: moving a firm from the lowest quartile of industry concentration to the highest increases its likelihood of adopting a high level of antitakeover provision of about twice the unconditional sample mean. Finally, I estimate an unrestricted version of my model where I allow for a potentially different effect of domestic and foreign measures of concentration. Results are reported in column 4 of Table 4. Standard tests of the difference in coefficients fail to reject the null of equal effect of the two measures, confirming that my original specification is correct. Finally, given that my estimates could in principle capture influential observations, in unreported analysis available upon request I also explore the robustness of the results to estimating a median regression in the second stage. The estimated coefficients indicate that outliers are not likely to account for my findings.

In sum, instrumental variable estimates point to a causal effect of concentration on antitakeover provisions, which is significantly larger than the estimated effect using cross-sectional specifications. The large gap between instrumental variable and OLS estimates suggests that OLS underestimates the true differential in the adoption likelihood of antitakeover provisions between concentrated and unconcentrated industries. An alternative interpretation of this finding is that in concentrated industries there are important benefits to firms adopting antitakeover provisions. I explore this alternative interpretation in detail in the next section.

So far my results suggest that in concentrated industries shareholders are more likely to adopt ATPs. However, I have not controlled for other governance mechanisms that could mitigate the conflict of interest between managers and shareholders nor I have controlled for CEO compensation and firm financial characteristics. These omissions are especially problematic given possible interdependencies among various control mechanisms found in studies by Pound (1992), Gillan, Hartzell, and Starks (2003), and Cremers and Nair (2004). In Table 5 I report the results of estimating (5) with these extra controls to investigate whether the observed difference in average adoption of ATPs between concentrated and unconcentrated industries can be explained by cross-sectional differences in internal governance, CEO equity incentives, or firm financial characteristics.

As expected, the internal governance measure pension fund has a significantly positive coefficient, consistent with the finding of complementarity between internal and external governance mechanisms of Cremers and Nair (2004). It is noteworthy that the positive effect of concentration on the ATP indices becomes even stronger than in Table 4.

4.3 ATPs and Financial Constraints

In Section 1, I argue that concentration should matter most for firms that are equity-dependent (Part 2 of Prediction 1). This is consistent with the idea that leverage is a takeover deterrent (see Zwiebel (1996) for a theoretical statement of this view, and Berger, Ofek, and Yermack (1997), Garvey and Hanka (1999), and Novaes (2002) for empirical evidence): if a firm's takeover likelihood is negatively affected by its untapped debt capacity, then concentration should matter most for firms that have least accessed the equity market.

To test this prediction I construct the Kaplan-Zingales index of financial constraint for my sample of firms along the lines of Lamont, Polk, and Sae1-Requejo (2001), Malmendier and Tate (2005), and Baker, Stein, and Wurgler (2003). Kaplan and Zingales (1997) generate direct measures of financing constraints to classify their sample of firms as either constrained or unconstrained. They then estimate an ordered logit of this classification on five accounting ratios meant to quantify financial constraints: cash flow to total capital, Q, debt to total capital, dividends to total capital, and cash holdings to capital. I apply the estimates of this ordered logit regression to my sample and construct an index of financial constraints (or equity dependence) as follows:

$$\begin{aligned} KZ_{it} &= -1.001909 * \frac{CF_{it}}{K_{it-1}} + 0.2826389 * Q_{it} + 3.139193 * Leverage_{it} \\ &\quad -39.3678 * \frac{Dividend_{it}}{K_{it-1}} - 1.314759 * \frac{C_{it}}{K_{it-1}} \end{aligned}$$

Higher values of the KZ-index imply a higher degree of financial constraint. I separate my sample into tercels based on the lagged value of the Kaplan-Zingales index and estimate Equation (5) using IV separately on each tercel.

Table 7 shows that, consistent with my prediction, the effect of concentration on the likelihood of adoption of antitakeover provisions is largest for the highest tercel of the Kaplan-Zingales index. To check for robustness of these results, I also consider measures of equity dependence other than the Kaplan-Zingales index, such as dividend payment and S&P long-term debt ratings. Unreported results available upon request confirm that concentration matters more for the ATP adoption decisions of firms that are more equity-dependent.

5 Test 2: Does Concentration Mitigate the Wealth Effect of ATPs?

The commitment hypothesis predicts a positive relation between ATPs and shareholder wealth, but only in concentrated industries (Prediction 2). I test the specifics of this prediction in turn. In particular, I start with an analysis of the announcement effect of ATPs. Then, I analyze takeover target premiums. Finally, I use standard Tobin's Q-regressions to test for the mitigating effect of industry concentration on the negative impact of ATPs on firm stock price. Although ATPs can lead to changes in firm value, low-value firms could decide to adopt ATPs to protect themselves from a takeover. To rule out simultaneity, I then estimate a system of simultaneous equations that allows ATPs to affect firm value, while properly controlling for the effect of firm value on ATPs. To rule out spurious correlation and identify the causal link between ATPs and firm value I explore a novel approach to identification that exploits differences in the variability of firm value between the first and the second half of the 1990s.

5.1 Announcement Effect of ATPs

Table 8 reports the results of OLS regression showing the average wealth effect of initial poison-pill rights issues announced in the period 1983-96 for NYSE, AMEX and NASDAQ-listed stocks, by whether a 13D filing, rumors of a bid, or an explicit takeover bid make it likely that a control premium is built into the issuer's stock price at the time of the announcement. A variable also measures whether merger and acquisition (M&A) news is announced at the same time as the pill. Also, a dummy variable is used to distinguish NASDAQ-listed firms. The dependent variable is measured as the cumulative abnormal return over days -1 to +1 using a market model estimated using the CRSP value-weighted market portfolio during the year prior to the pill announcement.

The wealth effect of a pill adoption is a combination of a stock price decline amounting to the expected present value of future takeover premiums forgone due to deterrence, offset by the expected present value of any increase in premiums due to a gain in bargaining power versus bidders. In addition, prices can change due to a revelation of managements private information. Some managers probably wait to adopt pills until they know that an offer is imminent. They could be engaged in merger talks, for which public disclosure is not usually required, they could be aware that an investment bank is shopping the company, or they could anticipate a takeover based on undisclosed corporate performance.

Information effects make it difficult to measure deterrence using stock prices. To address this problem, previous researchers have analyzed the subset of pill adoptions made after the market is already aware of a merger interest. Presumably, managements informational advantage regarding any outstanding merger interest is diminished when a merger interest has already been revealed. I refer to these cases below as the control premium subset of pill adoptions. Even in this subset, however, it can be difficult to separate deterrence and information effects. During merger negotiations, the announcement of a pill is tantamount to a disclosure of the bad news that a deal has yet to be struck, so a decline in stock price does not necessarily imply deterrence.

Subject to this caveat, my evidence on the wealth effects of pill adoptions, while confirming earlier studies such as, for example, Comment and Schwert (1995), offer strong support to my commitment hypothesis. Table 8 shows estimates of the effect of poison pill adoptions on shareholder wealth, measured by the three-day return on the common stock of the issuing firm, centered on the day of the announcement. To adjust for market movements, I subtract the prediction from a market model regression using the CRSP value-weighted portfolio, as estimated over the previous 253 trading days.

Table 8 contains two estimates of average abnormal returns associated with announcements of poison pill adoptions. The regression includes dummy variables for control premium cases, for simultaneous M&A news, for NASDAQ listing, and for the year of adoption. I include adoption-year dummy variables in case there is a different market reaction to more recent pills. Principally, I find that a prior control premium decreases the pill announcement effect by - 2.09%, but only in unconcentrated industries. This finding offers strong support to my commitment hypothesis as it implies that ATPs carry a negative wealth effect due to either deterrence or bad news about the progress of takeover negotiations, but only in unconcentrated industries.

NASDAQ companies do not have lower announcement effects. This result is not uncommon in the previous literature which interprets it as reflecting larger fractional inside ownership. McWilliams (1990) shows that the stock market reaction to adoptions of antitakeover charter amendments is negatively related to the fraction of insider ownership, based on 763 announcements by exchange-listed firms in the period 1980-84. Brickley, Coles, and Terry (1994) show that the stock market reaction to 247 pill adoptions depends on the composition of the board of directors: firms with insider-dominated boards had more negative announcement effects. They find no evidence that the takeover rate is lower for firms with insider-dominated boards.

5.2 ATPs and Target Premiums

Tables 9 and 10 show estimates of a regression model that predicts the premium received by target shareholders, where the premium is measured as the cumulative abnormal return to the target firms stock for trading days (-63, 126) relative to the date of the first bid. Following Schwert (2000), I include standard controls such as ROE, Sales Growth, Liquidity, D/E, M/B, P/E, and Size. I estimate both a baseline specification and richer specifications that include hostility, and three other deal characteristics, auction, cash, and tender, i.e., respectively, whether another bidder enters the competition for the target firm, whether the payment to target shareholders is all in the form of cash, and whether the deal is a tender offer. Unlike the performance and hostility variables, these deal characteristics are generally not known before the first bid is announced, and some are not known until the outcome of the deal has been determined.

There is weak evidence that takeover premiums are negatively related to target firm size. The performance variables are also not reliably related to takeover premiums, which is consistent with the results of Schwert (2000) and Comment and Schwert (1995). Hostility is not associated with differential premiums, except when the other deal characteristic variables are included. Controlling for hostility and the other deal characteristics, ATPs are associated with higher average premiums of 15.7% in concentrated industries, but lower, although not statistically significant, average premiums of 7% in unconcentrated industries. Table 10 shows that there is a positive a statistically significant effect of the interaction of concentration and ATPs on premiums. In particular, it show that in concentrated industries ATPs are associated with higher average premiums of 23.6%.

My model emphasizes that the decision to make a hostile bid is a strategy choice for the bidder firm. It reflects a judgment that a favorable outcome is more likely from the hostile bid than from private negotiations with the target firm, and that a hostile bid is better than making no bid at all. Alternative views of this process assume less rational decision-making by bidders. For example, Rolls (1986) hubris hypothesis asserts that bidders pay too much for target firms in the interest of winning a competitive takeover contest.

Table 14 shows the average values of several variables that might be related to the bidders stock price when takeover bids are announced. I also estimate a model that includes deal characteristics, some of which are not generally known at the time of the first bid, including whether cash is the only form of payment and whether there is eventually a successful takeover. Bidders involved in auctions have returns that are 8.4% lower. This is consistent with my overbidding story, since the occurrence of an auction is likely to be bad news for the first bidder.

Endogeneity. Regressions like those in Tables 9 and 10 could fail to explain much of the cross-sectional variation in targets and bidders stock returns because many of the explanatory variables are choice or strategy variables. If the bidder is selecting the value-maximizing strategy at each opportunity, there may be no reliable relation between realized stock returns and the choices that were made. Only in cases where the choices are not solely determined by the bidder, or there are unforeseen surprises, or if the bidder is not pursuing a value-maximizing strategy, would I expect to see predictable relations between bidder returns and the chosen strategies. To address these potential endogeneity issues I use instrumental variables methods analogous to these employed in the Q-regression. The unreported results available upon request confirm that ATPs are reliably associated with higher target premiums, but only in concentrated industries.

Other Takeover Characteristics. Table 11 shows estimates of a probit model that predicts whether a takeover offer is successful. The dependent variable is a dummy variable that equals one when a bid leads to an acquisition of a target firm (even if a different bidder is the acquirer), and zero otherwise. The explanatory variables are the same performance variables used for premiums in Tables 9 and 10. These models are estimated with and without hostility, and with and without other deal characteristics.

Given the other characteristics of the target firm, success is 46.3% less likely when the bid is hostile. Among the performance variables, targets with lower debt/equity ratios are more likely to be successfully taken over. Similarly, target firms with higher market/book ratios are more likely to be successfully taken over. These effects parallel the findings of previous studies such as Schwert (2000). Again, in line with previous research and my model, Table 11 shows no evidence of a deterrence effect of poison pills neither in concentrated nor in unconcentrated industries.

If hostility is a result of target resistance that is intended to seek a better deal, the frequency of multiple bidder auctions should be higher when an offer is hostile. To the extent that target firms simply want to avoid being taken over, there would be no advantage to seeking additional bidders. Table 12 shows estimates of a probit model that predicts whether more than one bidder is competing for a given target firm. The performance variables used in Tables 9 and 10 (ROE, Sales Growth, Liquidity, D/E, M/B, P/E, and Size) are included. Hostility is reliably associated with higher probability of leading to an auction, both in concentrated and unconcentrated industries. Given the other characteristics of the target firm, an auction is 36.9% more likely when the bid is identified as hostile. None of the performance variables or the pre-bid runup is a reliable predictor of whether an auction will occur.

5.3 ATPs and Firm Value: Q-Regressions

As a final step in my study of the association between ATPs and shareholder value, I use Tobin's' Q as the measure of firm value. In doing so, I follow earlier work on the association between corporate arrangements and firm value (see, e.g., Bebchuk and Cohen (2005), Demsetz and Lehn (1985), Morck et al. (1988), McConnell and Servaes (1990), Lang and Stulz (1994), Yermack (1996), Daines (2001)).

My first Q-regression includes as control variables only firm characteristics, i.e. age, and size, antitakeover provision statutes in the state of incorporation (overall number of antitakeover provision statutes) and a dummy for whether firms are incorporated in Delaware. I also include year- and industry-fixed effects. The results are displayed in Table 16, column 1. In line with previous studies such as Bebchuk and Cohen (2005), ATPs are associated, at 99% confidence, with lower firm value. However, industry concentration is a significant mediating factor in the relation between ATPs and firm value: the interaction of ATPs and industry concentration is associated with higher firm value. In Table 16, columns 2 and 3 I turn next to controlling for corporate governance mechanisms other than ATPs, such as internal governance and CEO compensation respectively. This leaves the negative effect of ATPs on firm value largely unchanged, but strengthens the mediating effect of concentration.

As to the coefficients of the various controls that I use, one that has received much attention in the previous literature is the coefficient of Delaware incorporation. The correlation between Delaware incorporation and firm value has already attracted some attention because of its potential implications for the long-standing debate on regulatory competition among states. In some of the regressions displayed in Table 16, the coefficient of Delaware incorporation is statistically insignificant, while in others it is negative and significant. Daines (2001) finds positive association between firm value and Delaware incorporation during the period 1981 to 1996. Subramanian (2004) finds that such an association did not exist during the 1990s except for small firms during the period of 1991 to 1996. My findings, even after controlling for the mediating effect of concentration, are in line with the findings of Bebchuk and

Cohen (2005), who also fin negative coefficient after controlling for ATPs.

Endogeneity. The correlation identified between ATPs and firm value raises the question of simultaneity. Do ATPs bring about a lower firm value, or is the correlation produced by the selection of ATPs by firms with lower value? A similar objection could be raised for my finding of a mediating effect of concentration. My very commitment hypothesis illustrates that ATPs are both a cause and an effect. Simple OLS regressions that relate ATPs to firm value are likely to yield seriously biased results if used to infer the causal impact of right-hand side variables on the left-hand side variable.

The standard solution to this conundrum in cross-sectional work has been to employ either an instrumental-variable or a difference-in-difference approach. This entails finding a variable (the instrument) that (a) is exogenous; (b) is correlated with the endogenous variable for which it is instrumenting; and (c) does not influence the dependent variable through any channel other than the relevant endogenous variable. Once such a variable is located, unbiased estimates of the causal effects can be recovered.

This approach has yielded considerable progress in recent years. Several papers in this line of work are particularly noteworthy (e.g. Bertrand and Mullainathan (2003)). While the IV approach has paid off, it also has some drawbacks. Most importantly, the requirements for an instrument to be valid (as discussed briefly above) are quite demanding. In particular, it is difficult to come up with truly exogenous variables that also satisfy the exclusion restriction - i.e., indicators that can be argued to influence firm value solely through the determinant for which they are instrumenting. Consequently, the list of plausible instruments that can be used in this line of inquiry is extremely short. This results in just-identified specifications, restricts the range of questions that can be posed, and raises interpretational difficulties.

Moreover, neither an IV nor a difference-in-difference approach can shed light on the reverse causality running from firm value to ATPs. Doing so would require coming up with an instrumental variable for firm value – a variable that affects firm value but not any of its determinants. Perhaps for obvious reasons, no-one has yet embarked on such an effort. Also, existing instruments do not allow to distinguish, say, between internal and external governance mechanisms and gauge their respective contributions to firm value.

I pursue an alternative identification strategy which does not have these disadvantages (see Kadyrzhanova (2005) for details). In a nutshell, I rely on identification through heteroskedasticity (IH), a method that does not require an instrumental variable and achieves identification by exploiting plausible differences in the variances of error terms across sub-samples of the data. To see the intuition behind the IH method, consider the pair of equations that describe the relationship between Tobin's Q and ATPs:

$$Q = \beta E + \varepsilon \quad (7)$$

$$E = \theta Q + \nu \quad (8)$$

where ε and ν are the random shocks to the performance and governance equations respectively. This is an unidentified system. The usual IV approach would be to find a variable that enters the ATPs equation (8) but not equation (7). But suppose I can split my data into two sub-samples A and B such that the variance of the shock to the governance equation (σ_ν^2) is larger in sub-sample A than it is in sub-sample B. This helps me to uncover the structural parameters of the model without an instrumental variable. What the hypothesized difference in shocks in the two sub-samples means is that the scatter of observations in (Q, E) space in sub-sample A is aligned more closely along the performance equation (7) than it is in sub-sample B. In the limit, if the variance of ν is infinite in sub-sample A, the scatter of observations in that sub-sample would trace out the income equation (7) perfectly. More generally, as long as relative variances of the structural shocks differ across sub-samples, this difference provides me with a probabilistic instrument, and allows me to solve the problem of identification.

The IH method relies on the critical identification assumption that I can split the data into sub-samples with different relative variances of the structural shocks. This is where I need to rely on prior assumptions and make plausible guesses. In this paper I distinguish between first and second half of the 1990s. While both time periods exhibit wide variance in firm value, the (unconditional) variance of firm value is typically larger in the second half of the 1990s. My maintained assumption here is that the stock market bubble changed the variance of shocks to which firms are subject. Note that making this distinction between the two groups is not inconsistent with the assumption that the parameters of interest are stable across the two groups. During the bubble there may have been more heterogeneous outcomes (due to exogenous shocks), but that does not imply that the impact of ATPs on firm value, or vice versa, is any different in that sample.

I apply the IH approach to my Q-regressions and analyze the joint determination of Tobin's Q, ROA, ATPs, and internal governance as measure by institutional ownership. Aside from these variables, my specification includes as controls firm characteristics, such as size and age, and the Delaware dummy. The results for the E-index and the GIM-index are displayed in Tables 17 and 18, respectively. In line with my previous findings, ATPs are associated, at 99% confidence, with lower firm value in unconcentrated industries, but wit higher firm value in concentrated industries. This confirms that industry concentration is a significant mediating factor in the relation between ATPs and firm value.

Finally, an advantage of my procedure is that because all the variances and coefficients are estimated I can compute a variance decomposition and evaluate the respective contributions of the explanatory variables to explaining the observed variance in firm value. Moreover, through this variance decomposition I can provide some direct evidence of the extent of endogeneity of ATPs. The results are reported in Table 19. ATPs account for up to 33 percent of variation of firm value across companies and through time in unconcentrated industries, but only for up to 0.3 percent in concentrated industries. Moreover, consistent with the commitment hypothesis, there is evidence of sizable endogeneity of ATPs only in concentrated industries. In fact, firm value accounts for up to 33 percent of variation of ATPs across companies and through time in concentrated industries, but only for up to 0.9 percent in unconcentrated industries.

These results are generally robust to changes in the year-threshold. In unreported analysis available upon request, I re-estimate the same system of equations using different splits, and various different ATP indices. In all these estimations the coefficients turned out to be relatively stable. In comparing my baseline specification to the ones from this sensitivity analysis, I find that coefficients that are significant in the former usually are also significant in the latter, with the same sign.

Thus, both predictions of my simple model of antitakeover provisions are confirmed in the data.

6 Conclusions

This paper shows that competition in the market for corporate control affects shareholder rights. My arguments consists of two main steps. First, I construct a simple two-stage model where antitakeover adoption allow target shareholders to commit ex-ante to prolonging the takeover process. I show that when takeover contests are likely to result in overbidding, this evidence of their commitment is valuable to the targets shareholders because it encourages acquirers to avoid the prospect of bidding competition by sweetening their initial bid offers. Building on the recent literature on auctions with externalities (Jehiel, Moldovanu, Stacchetti (1999), Jehiel and Moldovanu (2001)), I then develop a theoretically motivated measure of overbidding based on industry concentration. I combine two measures of concentration: a domestic measure, which is based on industry-level market shares, and an external measure, which is based on industry-level import penetration.

I apply my overbidding measure to a panel data set of publicly traded corporations in the U.S. between 1990 and 2001 for which information on ATPs is available. I find a strong positive relation between likelihood of adoption of antitakeover provisions and industry concentration. The estimated coefficients are highly significant and more so when I mitigate endogeneity concerns by instrumenting for industry concentration using an arguably exogenous source of variation in trade costs. I also find that concentration matters more in firms that are equity dependent, as predicted by my model.

Consistent with my commitment hypothesis, I find a positive interaction effect of concentration and antitakeover provisions on shareholder wealth. In particular, an increase in industry concentration mitigates the negative price impact of antitakeover provision adoption announcement and strengthens the positive impact of antitakeover provisions on target premiums. Employing a novel identification strategy, I find that the mediating effect of concentration is not spurious.

Finally, the novel identification approach I use allows me to provide an empirical assessment of corporate governance as an endogenously determined institution. Supporting the endogeneity of antitakeover provisions in concentrated markets, I find that antitakeover provisions account for up to 33 percent of variation of firm value across companies and through time in unconcentrated industries, but only for up to 0.3 percent in concentrated industries. On the other hand, firm value accounts for up to 30 percent of variation of antitakeover provisions across companies and through time in concentrated industries, but only for up to 0.9 percent in unconcentrated industries.

My findings suggest that antitakeover provisions are reliably associated with *higher* shareholder value in concentrated industries, but lead to *lower* shareholder value in unconcentrated industries. These results have important implications for contracting practices and corporate law. Specifically, they confirm the need for promoting the contestability of product markets as well as the market for corporate control. However, my findings suggest that policies aimed at promoting competition for corporate control by limiting board entrenchment may induce a significant redistribution of wealth away from targets to acquirers.

Notes

[1]"Verizon Wins Bidding for MCI; Qwest Drops Out," The Wall Street Journal, May 3, 2005

[2]"Wall Street returns to its normal state of war" October 5, 2005, The Financial Times

[3]I primarily use the Gompers, Ishii, and Metrick (2004) GIM-index, based on 24 ATPs; and the Bebchuk, Cohen, and Ferrell (2004) E-index, based on six out of the 24 ATPs. I also check for robustness by using an alternative index composed of only three ATPs, in analogy with Cremers and Nair (2005). Each governance index of each firm is equal to the number of ATPs the firm has. Therefore, the more ATPs a firm has in place, the higher its governance index. The appendix in Gompers, Ishii, and Metrick (2004) contains a detailed description of the ATPs.

[4]"Aventis to alter 'poison pill'," Financial Times, 22 April 2004

[5]"...In the case of a higher bid, the bid would be given greater consideration." - "Aventis Contends A Sanofi Merger Isn't the Best Fit," The Wall Street Journal, 8 March 2004

[6]Aventis-Sanofi is just the most recent of a number of cases of "rich bids and quick closes" common in the '90s, when corporate buyers with strategic rather than financial motives came in with hostile but rich bids and managed to turn their unwilling targets around in as little as a week. For example, the Lotus Development Corporation capitulated to IBM's sweetened bid of more than $3.5 billion, only six days after having become the target of the unwanted advances of the blue-chip suitor. Or Clark Equipment accepted Ingersoll-Rand's sweetened offer of $1.46 billion, 12 days after having derided Ingersoll-Rand's bid as an outrageous invasion. This bidding strategy was customarily adviced by M&A lawyers to pressure a board of directors to take swift action: "When they start out at a high price, the target board realizes it can't cower under the table saying 'poison pill, poison pill, poison pill,"' Robert Friedman, a partner at Simpson Thacher & Bartlett, which advised Ingersoll on its bid for Clark, was reported saying by the New York Times ("New Tactics In Takeovers: Rich Bids and Quick Closes," June 15, 1995). Moreover, in most of these deals the buyer's stock was not under pressure. For example, the day after IBM and Lotus struck their deal, shares of IBM actually rose $1.125. "Companies are more open-minded about this tactic as one that might actually mean they pay a lower price," Mr. Friedman continued, contrasting it to the 80s, "when a bidder was more likely to start out low, attract competition for the company, and duke it out for months as the target danced with an ever-greater number of suitors."

[7]For example, a classified board can credibly threaten not to redeem a poison pill in a reasonable amount of time.

[8]Our setup can be easily extended to allow for a repeated negotiation game with the board, that would result in similar qualitative implications and predictions. Our assumption simplifies the exposition and solution of the model, and allows for a transparent exposition of the commitment mechanism at the heart of the model.

[9]This simplifies the exposition by ensuring that the target finds it optimal to always conclude a sale.

[10]A detailed description of the ATPs included in the GIM-index and E-index can be found in Gompers, Ishii, and Metrick (2003) and Bebchuk, Cohen, and Ferrell (2004).

[11]The results do not depend on the assumption that the value of the antitakeover provision index in-between survey years is unchanged. In unreported results based solely on data from the survey years, we replicate the reported results.

[12]For details on the construction of the internal governance variables see Cremers and Nair (2005).

[13]We employ the takeover sample from Schwert (2000) to which we refer for further details. The takeover sample data is available at http://schwert.ssb.rochester.edu/host.htm.

[14]See Schwert (2000) for further details on the construction of these variables.

[15]$CR4$ is the ratio of the sales of the top four firms in an industry to total industry sales.

[16]We have explored robustness of our results to alternative cutoffs and/or measures of ATPs. The results are qualitatively similar to those reported in the text and available upon request.

[17]We explore robustness of our results to this measures in Section 5.

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7 Related Literature

At the theory level, my study is related to the literature on bidding competition starting with Fishman (1988) that models explicitly the dynamics of the takeover process (Fishman (1989), Giammarino and Heinkel (1999), Hirshleifer and Png (1989) and, more recently, Povel and Singh (2005)). This literature emphasizes asymmetries across bidders and information as a source of externality. By contrast, I build on Jehiel, Moldovanu, Stacchetti (1999), and Jehiel and Moldovanu (2001), and emphasize allocation externalities that allow me to link antitakeover provisions to industry concentration.

I contribute to the literature on the determinants of corporate governance by highlighting the role played by competition in the market for corporate control as a determinant of antitakeover provisions. Bebchuk (2003) offers a thorough and up to date discussion of the state of the art of the literature on the determinants of takeover defenses. While some lawyers (Kahan and Rock (2003), Stout (2002), see also references in Subramanian (2003)) and M&A practitioneers (Gordon (2002)) have speculated that takeover defenses might be an ex-ante choice of optimal selling strategy, to my knowledge this paper is the first to articulate this view formally and establish conditions under which it holds.

I contribute to the literature on the consequences of corporate governance by highlighting the role of industry concentration as a mediating factor in the wealth effect of antitakeover provisions. Previous studies focus on the effects of takeover defenses on executive compensation ((Bertrand and Mullainathan (1999), and Fahlenbrach (2004)), firm leverage (Garvey and Hanka (1999)), in addition to firm value and long term stock performance (Gompers, Ishii, and Metrick (2003), Core, Wayne, Rusticus (2004), Bebchuk and Cohen (2004), Bebchuk, Cohen, and Ferrell (2004), and Cremers and Nair (2004)).

A growing body of research suggests that takeovers are driven by efficiency considerations in response to changes in optimal firm boundaries that are brought about by unexpected economic changes. Mitchell and Mulherin (1996) find evidence consistent with the argument that major economic changes shape the takeover and restructuring markets (see also Andrade et al. (2001); Andrade and Stafford (2004), Eckbo (1983), Song and Walkling (2000), Fee and Thomas (2004), Servaes and Tamayo (2005)). Of course there are other possible motives for takeovers such as agency problems (Jensen (1986)), hubris (Roll (1986)), and market misvaluations (Shleifer and Vishny (2003)), among others. I contribute to the literature on the efficiency gains from mergers by developing and testing a mode that provides a formal link between merger gains and antitakeover provisions.

8 Appendix A: Proofs

Proof of Proposition (1)**.** We first assume that buyer 2 bids according to the strategy $\beta(v_2)$ which is monotonically increasing and differentiable, and we derive the necessary FOC for buyer 1. Buyer 1's expected utility given that he has type v_1, and given that he makes a bid b is:

$$U(v_1, b) = \int_{\underline{\pi}}^{\beta^{-1}(b)} (v_1 - \beta(v_2)) f(v_2) \, dv_2 + \int_{\beta^{-1}(b)}^{\overline{\pi}} \varepsilon f(v_2) \, dv_2$$

Differentiating the above expression with respect to b we obtain:

$$\frac{\partial U(v_1, b)}{\partial b} = \frac{d\beta^{-1}(b)}{db} f\left(\beta^{-1}(b)\right)\left(v_1 - \beta\left(\beta^{-1}(b)\right) - \varepsilon\right)$$

By symmetry we must have in equilibrium that $\beta^{-1}(b) = v_1$. Hence, we obtain:

$$\begin{aligned} \frac{\partial U(\pi_1, b)}{\partial b} &= 0 \\ v_1 - \beta(v_1) - \varepsilon &= 0 \\ \pi_1 - \varepsilon &= \beta(v_1) \\ b &= \beta(v_1) \end{aligned}$$

We now prove that the strategy $b(v_1) = \beta(v_1)$ is optimal for buyer 1, given that buyer 2 plays the strategy $b(v_2) = \beta(v_2)$. Assume that buyer 2 has type v_2. When buyer 1 bids above $\beta(v_2)$, he gets the good and his payoff is $v_1 - \beta(v_2)$. When he bids below $\beta(v_2)$, buyer 2 gets the good, and buyer 1's payoff is ε. Using $\beta(v_2)$, we have that $v_1 - \beta(v_2) - \varepsilon = (v_1 - v_2)$. Hence, bidding above $\beta(v_2)$ is optimal if $v_1 \geq v_2$, and bidding below $\beta(v_2)$ is optimal if $v_1 \leq v_2$. By the monotonicity of the function $\beta(v_2)$, the bidding function $b(v_1) = \beta(v_1)$ satisfies all these optimality requirements for all v_1. ■

Proof of Proposition (2)**.** We solve the game using backward induction and prove Proposition (2) by using the following lemmata.

Lemma 1 *The least costly bid to guarantee control in a tender offer is* π_S*.*

Proof. *The minimum winning bid is* $p = \pi_S$*. Any lower offer will be rejected by the shareholders, since this is the stand-alone value of the target if it proceeds to product market competition at* $t = 2$*. Since at* π_S *shareholder will tender, and given that the bidder's objective is to maximize* $v - p$*,* $p = \pi_S$ *is the equilibrium bid in a tender offer.* ■

Lemma 2 *If no second bidder arrives during negotiations with the board, the minimum offer that guarantees control of the target is* π_S*.*

Proof. *Any offer lower than* π_S *will be rejected by the shareholders, since this is the stand-alone value of the target if it proceeds to product market competition at* $t = 2$*. Since the game ends if the second offer is rejected, the board will accept an offer of* π_S*, and given that the bidder's objective is to maximize* $v - p$*,* $p = \pi_S$ *is the equilibrium bid in case there is no competition for the target.* ■

When bidding for a target that has no ATPs, upon initial rejection by the board, the bidder always chooses H. In fact, expected payoff from going hostile is $v^r - \pi_S$. Expected payoff from going friendly is $\gamma U^r + (1-\gamma)(v^r - \pi_S) < v^r - \pi_S$. Hence, H is the dominant second-stage strategy for the bidder.

If the target has ATPs, the optimal strategy in the second-stage depends on the reduction in value suffered due to the ATPs. With ATPs, expected payoff from H is $v^r - \pi_S - \eta$. Expected payoff from F is $\gamma U^r + (1-\gamma)(v^r - \pi_S)$. The buyer will choose F as long as

$$\begin{aligned} v^r - \pi_S - \eta &\leq \gamma U^r + (1-\gamma)(v^r - \pi_S) \\ \eta &\geq \gamma (v^r - U^r) \end{aligned}$$

Notice that for $v = 0$, this condition reduces to $\eta \geq \gamma \left(v^r - (v^r)^2 + \frac{v^r}{2} + \varepsilon \right)$, or $\eta \geq \gamma\varepsilon$. For $v = 1$, $\eta \geq \gamma \left(v^r - (v^r)^2 + \frac{v^r}{2} + \varepsilon \right)$, or $\eta \geq \gamma \left(\frac{1}{2} + \varepsilon \right)$. Thus, with ATPs, the bidder's second-stage strategy can be summarized as follows:

$$s(v) = \begin{cases} F \ \ \forall v^r & \text{if} \quad \eta \geq \gamma \left(\frac{1}{2} + \varepsilon \right) \\ H \ \ \forall v^r & \text{if} \quad \eta < \gamma\varepsilon \\ \begin{array}{ll} F & \text{if } \eta \geq \gamma (v^r - U^r) \\ H & \text{otherwise} \end{array} & \text{if} \quad \gamma\varepsilon < \eta \leq \gamma \left(\frac{1}{2} + \varepsilon \right) \end{cases}$$

It follows immediately, then, that for effective ATPs, $\eta \geq \gamma \left(\frac{1}{2} + \varepsilon \right)$, F is the dominant second-stage strategy for the initial bidder $\forall v^r$.

In the first-stage, the bidder has to decide on the initial offer P. While shareholders accept any offer that exceeds π_S, to induce the board to accept the raider needs to offer at least the reservation value to the target, which will depend on whether the target has ATPs or not.

$$\begin{aligned} P(\alpha = 1) &= \gamma U_S + (1-\gamma)\pi_S = \pi_S + \gamma (U_S - \pi_S) > \pi_S \\ P(\alpha = 0) &= \pi_S \end{aligned}$$

Whether the target will receive this offer depends on the synergy (type) of the raider. If the target has no ATPs, then it always receives $P(\alpha = 0)$, since $v^r \geq \pi^S \; \forall v^r$. If the target has ATPs, then the raider will offer $P(\alpha = 1)$ as long as $\gamma(v^r - U^r - (U_S - \pi_S)) \geq \pi_S$. ■

Proof of Proposition (3). To show that the decision to adopt ATPs depends on the externality, we first prove the following lemma.

Lemma 3 *The target's expected revenue, whenever it has chosen* $\alpha = 1$, *is* $p(\alpha = 1) \; \forall v^r$.

Thus, the expected value to the target from adopting ATPs does not depend on the initial bidder's valuation and is given by the following:

$$\begin{aligned} V(\alpha = 1) &= P(\alpha = 1) = \pi_S + \gamma(U_S - \pi_S) - K \\ V(\alpha = 0) &= P(\alpha = 0) = \pi_S \end{aligned}$$

We will show that the target's incentive to adopt ATPs depends on ε. Let the fixed fee of ATP adoption K be given by $\gamma\left(U_S^0 - \pi_S\right) = K$, where U_S^0 is the target's expected revenue in a takeover contest when $\varepsilon = 0$ and is given by

$$U_S^0 = E[v_2 | v_2 \leq v^r] + E[v^r | v_2 > v^r] = 2E[v(1 - F(v))]$$

This implies that $\alpha^* = 0$ whenever $\varepsilon = 0$. Equation (2) implies that, for any $\varepsilon < 0$, $U_S > U_S^0$ since

$$U_S = 2E[(v - \varepsilon)(1 - F(v))] = 2E[v(1 - F(v))] - 2E[\varepsilon(1 - F(v))] > 2E[v(1 - F(v))]$$

and hence $V(\alpha = 1) > V(\alpha = 0)$, or $\alpha^* = 1$ whenever $\varepsilon < 0$. ■

9 Appendix B: Figures

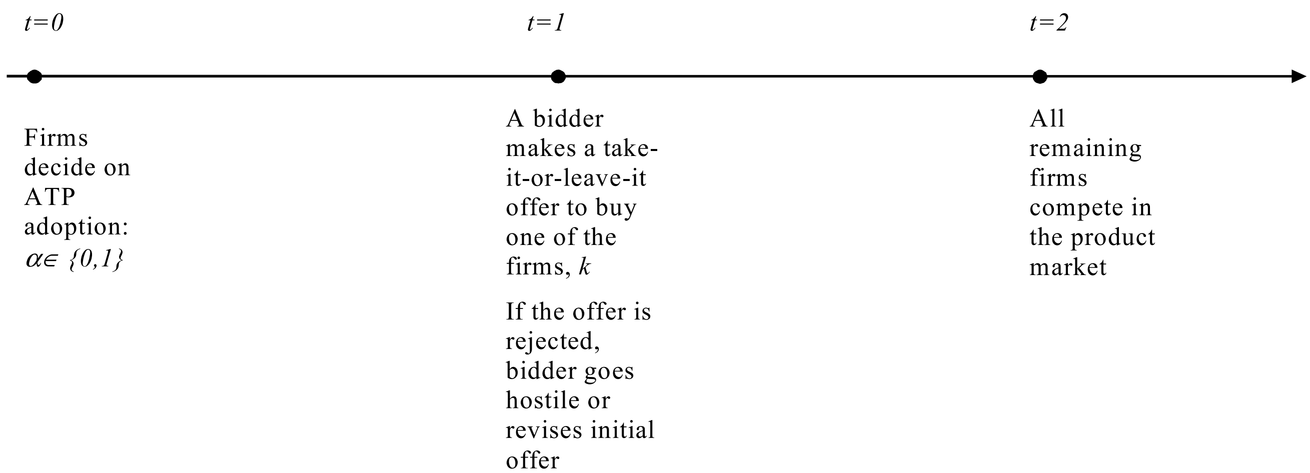

Figure 1: Timing of events

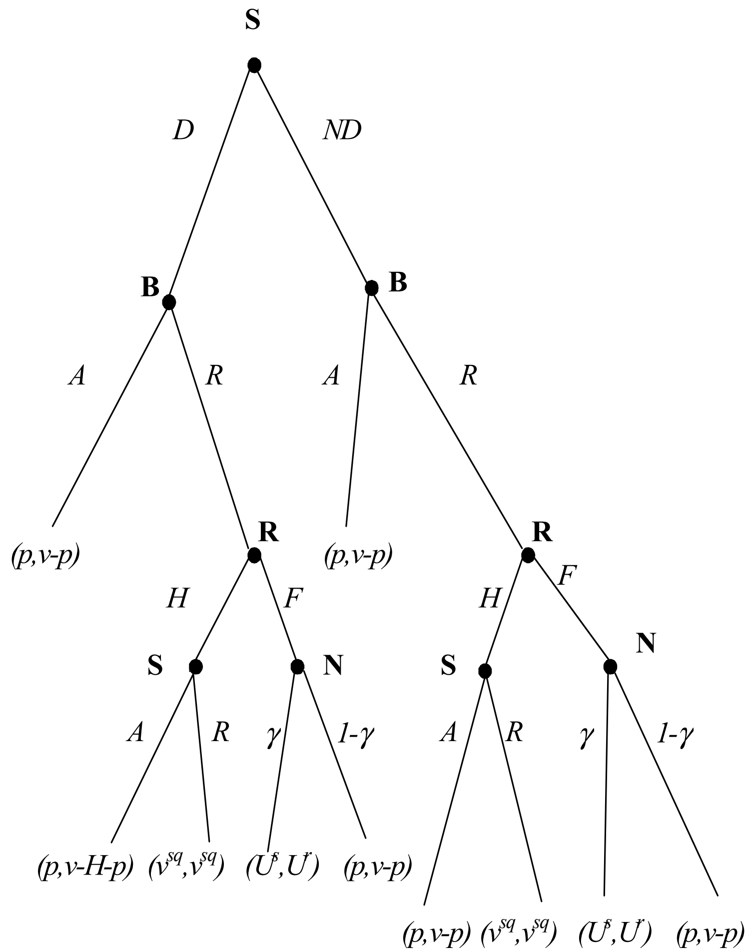

Figure 2: Game tree

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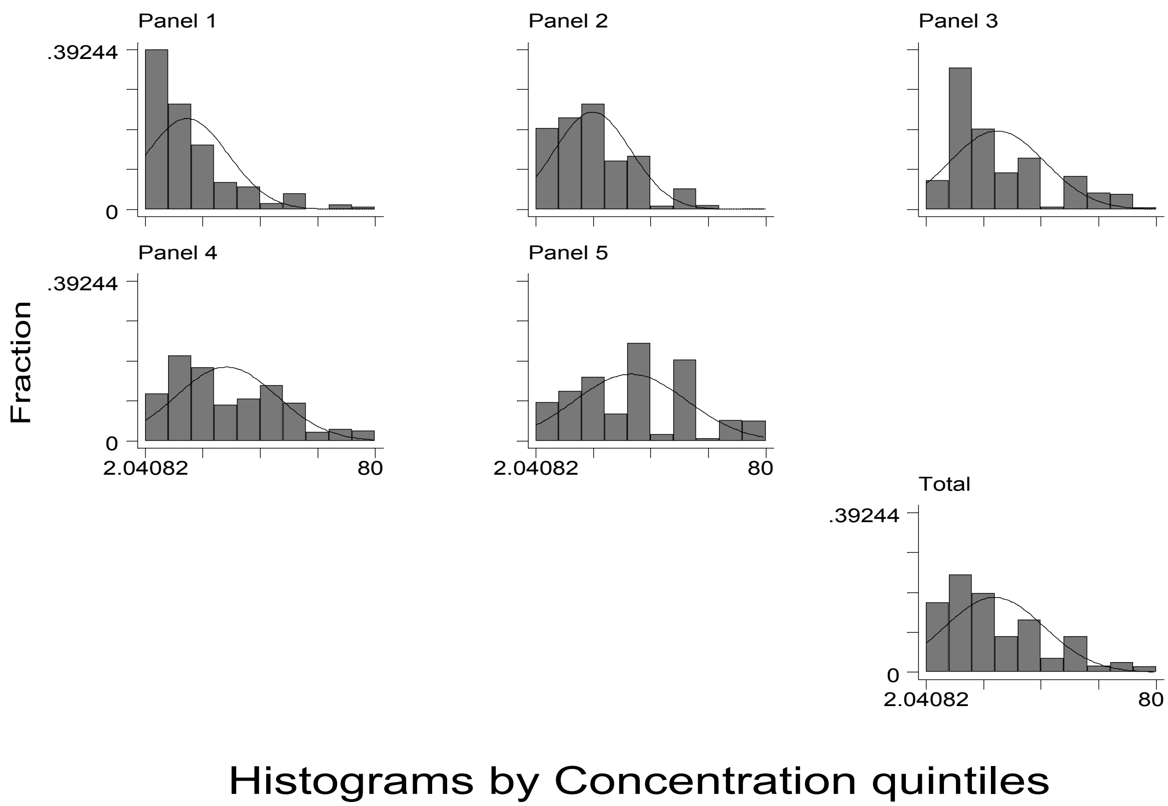

Figure 3: Incidence of ATPs in concentrated and unconcentrated industries. The graph shows the frequency distribution of industries by incidence of ATPs, defined as percentage of firms with high level of ATPs ($E \geq 4$, "dictatorship") in the industry. Panels 1-5 represent concentration quintiles from the lowest to the highest. Total is the sample average. The E-index is from Bebchuk, Cohen, and Ferrell (2004). Industry is defined by four-digit SIC code. Industry concentration is domestic concentration multiplied by a dummy variable equal to 1 if import penetration is above sample mean. Domestic concentration is the market share of four largest firms in the industry. Import penetration is the ratio of imports to domestic consumption in the industry. Data is annual for 1990-2001, with only manufacturing (SIC 2000-3999) firms included.

10 Appendix C: Tables

Table 1: Summary Statistics

The level of antitakeover protection in measured by E or GIM index. E index is from Bebchuk, Cohen, and Ferrell (2004), and GIM index is from Gompers, Ishii, and Metrick (2003). For both, higher index value corresponds to more ATPs. Domestic concentration is the market share of four largest firms in the industry. Import penetration is the ratio of imports to domestic consumption in the industry. Concentration is domestic concentration multiplied by a dummy variable equal to 1 if import penetration is above sample mean. Size is sales at the beginning of the year, winsorized at 1%. Tobin's Q is the market value of assets over the book value of assets, winsorized at 1%. Age is number of years since firm was listed. State Laws is a binary variable where 1 signifies that the state of incorporation has high (greater than 4) number of state antitakeover statutes. Delaware is binary where 1 signifies that the firm is incorporated in Delaware. Dual is a dummy variable where 1 signifies that the firm has dual-class structure. Data is annual for 1990-2001. Import penetration data is only for manufacturing (SIC 2000-3999) firms.

Panel A: Summary Statistics of Firm Data

Variable	Observations	Mean	Standard Deviation
E	13288	2.23	1.35
GIM	13288	9.03	2.80
Domestic Concentration	13288	0.36	0.18
Size	12534	3.56	6.92
Tobin's Q	11502	1.81	1.27
State Laws	13288	0.34	0.47
Delaware	13288	0.53	0.50
Import Penetration	6932	0.40	0.49
Concentration	6932	0.24	0.24
Age	13288	27.22	20.74

Panel B: Correlations

	Concentration	Size	Tobin's Q	State Laws	Delaware	Age
Concentration	1					
Size	0.141	1				
Tobin's Q	0.002	0.046	1			
State Laws	0.016	0.007	-0.001	1		
Delaware	0.017	0.040	-0.012	-0.818	1	
Age	0.134	0.483	-0.045	0.180	-0.096	1

Panel C: Total number of ATPs and industry concentration

Number of ATPs	% All firms	% Firms in unconcentrated	% Firms in concentrated
0	11.35	11.64	8.72
≥1	88.65	88.36	91.28
≥2	70.62	68.92	75.66
≥3	45.66	44.77	51.51
≥4	20.70	17.76	29.70
≥5	3.71	2.36	6.05
Observations	6932	2629	1536

Table 1: Summary Statistics (continued)

Panel D presents estimates from four-factor regressions of equal-weighted monthly returns for portfolios of firms sorted by antitakeover provisions and industry concentration. The portfolios are reset in September 1990, July 1993, July 1995, and February 1998, which are the months after new data on E and GIM became available. The explanatory variables are RMRF, SMB, HML, and Momentum. These variables are the returns to zero-investment portfolios designed to capture market, size, book-to-market, and momentum effects, respectively (Fama and French (1993) and Carhart (1997)) The sample period is from September 1990 through December 1999. Industry is defined by four-digit SIC code. Industry concentration is domestic four-firm concentration ratio multiplied by a dummy variable equal to 1 if import penetration ratio is above sample mean. Firm is in an Unconcentrated (Concenrated) industry if industry concentration is above (below) mean. Panel E presents coefficients on Dictatorship, a dummy variable that signifies that the firm has high (E=4 or GIM=13) level of ATPs in a particular firm year, in regressions of industry-adjusted ROA on Dictatorship, firm size and Tobin's Q (coefficients on control variables are not reported). The sample period is from September 1990 through December 2001. This regression is performed on subsamples with industry concentration above and below sample mean.

Panel D: Portfolios

Given	Portfolio	α
Using E as measure of ATPs		
Dictatorship (E≥4)	Concentrated-Unconcentrated	6.17***
Democracy (E=0)	Concentrated-Unconcentrated	0.00
Concentrated	Dictatorship-Democracy	4.91***
Unconcentrated	Dictatorship-Democracy	-2.43
Using GIM as measure of ATPs		
Dictatorship (GIM≥14)	Concentrated-Unconcentrated	3.66***
Democracy (GIM≤5)	Concentrated-Unconcentrated	0.00
Concentrated	Dictatorship-Democracy	6.17***
Unconcentrated	Dictatorship-Democracy	-2.43

Panel E: Operating Performance.

	Unconcentrated	Concentrated	P-value
Dictatorship (E)	0.008	0.005	0.319
	(0.003)	(0.002)	
Democracy (GIM)	-0.003	-0.001	0.456
	(0.004)	(0.003)	
Observations	3250	2745	

Table 2: ATPs and Industry Concentration - Probit

The dependent variable is binary where 1 signifies that the firm has high (E≥4) level of antitakeover protection in a particular firm year. Industry concentration is domestic four-firm concentration ratio multiplied by a dummy variable equal to 1 if import penetration ratios is above sample mean, where industry is defined by four-digit SIC code. Size is sales at the beginning of the year, winsorized at 1%. Tobin's Q is the market value of assets over the book value of assets, winsorized at 1%. Age is number of years since firm was listed. State Laws is a binary variable where 1 signifies that the state of incorporation has high (greater than 4) number of state antitakeover statutes. Delaware is binary where 1 signifies that the firm is incorporated in Delaware. Dual is a dummy variable where 1 signifies that the firm has dual-class structure. Data is annual for 1990-2001, with only manufacturing (SIC 2000-3999) firms included. Coefficients are reported as marginal effects. Standard errors are robust to heteroskedasticity and arbitrary serial correlation within industry-year cells.

	Baseline Regressions				Alternative Specifications		
	probit, no fixed effects, no controls	probit, fixed effects, no controls	probit, no fixed effects, controls	probit, fixed effects, controls	OLS, fixed effects, controls	random effects probit, controls	probit, replace E≥4 with GIM≥13, fixed effects, controls
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Industry Concentration	0.190***	0.184***	0.212***	0.184***	0.165***	0.612**	0.146***
	(0.024)	(0.028)	(0.023)	(0.029)	(0.029)	(0.268)	(0.025)
Tobin's			-0.035***	-0.033***	-0.020***	-0.110**	-0.028***
			(0.005)	(0.005)	(0.003)	(0.050)	(0.006)
Size			-0.010***	-0.008***	-0.005***	-0.061***	-0.003***
			(0.001)	(0.001)	(0.001)	(0.020)	(0.001)
Age			0.001***	-0.0002	-0.0003	0.015***	0.002***
			(0.0003)	(0.0003)	(0.0003)	(0.005)	(0.0003)
State Laws			0.186***	0.214***	0.170***	1.113***	0.259***
			(0.022)	(0.030)	(0.021)	(0.309)	(0.044)
Delaware			0.029*	0.060***	0.048***	0.019	0.174***
			(0.017)	(0.022)	(0.016)	(0.282)	(0.027)
Dual			-0.171***	-0.166***	-0.164***	-1.667***	-0.091***
			(0.010)	(0.011)	(0.017)	(0.294)	(0.012)
Industry fixed effects	No	Yes	No	Yes	Yes	No	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6932	6252	5995	5330	5995	5995	4929
Firms	878	878	843	843	843	843	843
% Predicted correctly	98	84	87	75			72
χ^2 / F	70.43***	2995.29***	469.88***	1512.41***	599.59***	134.91***	1468.30***
Pseudo R^2 / R^2	0.02	0.15	0.10	0.21	0.26	0.06	0.16
Log-likelihood	3484.62	2793.94	2803.76	2252.49		1116.19	1868.85

Table 3: ATPs and Industry Concentration - Ordered Probit

The dependent variable the level of antitakeover protection in a particular firm year, measured by E index. Industry concentration is domestic four-firm concentration ratio multiplied by a dummy variable equal to 1 if import penetration ratios is above sample mean, where industry is defined by four-digit SIC code. Size is sales at the beginning of the year, winsorized at 1%. Tobin's Q is the market value of assets over the book value of assets, winsorized at 1%. Age is number of years since firm was listed. State Laws is a binary variable where 1 signifies that the state of incorporation has high (greater than 4) number of state antitakeover statutes. Delaware is binary where 1 signifies that the firm is incorporated in Delaware. Dual is a dummy variable where 1 signifies that the firm has dual-class structure. Data is annual for 1990-2001, with only manufacturing (SIC 2000-3999) firms included. Coefficients are reported as marginal effects. Standard errors are robust to heteroskedasticity and arbitrary serial correlation within industry-year cells.

	Baseline Regressions				Alternative Specifications	
	ordered probit, no fixed effects, no controls	ordered probit, fixed effects, no controls	ordered probit, no fixed effects, controls	ordered probit, fixed effects, controls	OLS, fixed effects, controls	ordered probit, replace E with GIM, fixed effects, controls
	(1)	(2)	(3)	(4)	(5)	(6)
Industry Concentration	0.483***	0.589***	0.558***	0.578***	0.619***	0.576***
	(0.070)	(0.089)	(0.068)	(0.085)	(0.094)	(0.081)
Tobin's Q			-0.112***	-0.111***	-0.119***	-0.072***
			(0.010)	(0.011)	(0.011)	(0.010)
Size			-0.032***	-0.028***	-0.030***	-0.019***
			(0.002)	(0.002)	(0.002)	(0.002)
Age			0.005***	0.002***	0.003***	0.012***
			(0.001)	(0.001)	(0.001)	(0.001)
State Laws			0.576***	0.702***	0.761***	0.949***
			(0.053)	(0.070)	(0.074)	(0.064)
Delaware			0.146***	0.295***	0.306***	0.676***
			(0.049)	(0.062)	(0.067)	(0.059)
Dual			-0.995***	-1.041***	-1.091***	-0.727***
			(0.047)	(0.065)	(0.065)	(0.048)
Industry fixed effects	No	Yes	No	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6932	6932	5995	5995	5995	5995
χ^2 (F for OLS)	54.27***	4156.02***	986.02***	12412.77***	390.83	10420.13***
Pseudo R^2 / R^2	0.01	0.07	0.05	0.11	0.31	0.07
Log-likelihood	-11654.12	-10895.19	9607.05	9036.30		13644.81

Table 4: ATPs and Industry Concentration - IV

The dependent variable is binary where 1 signifies that the firm has high (E≥4) level of antitakeover protection in a particular firm year. Industry is defined by four-digit SIC code. Domestic concentration is the market share of four largest firms in the industry. Import penetration is the ratio of imports to domestic consumption in the industry. Industry concentration is domestic concentration multiplied by a dummy variable equal to 1 if import penetration is above sample mean. Size is sales at the beginning of the year, winsorized at 1%. Tobin's Q is the market value of assets over the book value of assets, winsorized at 1%. Age is number of years since firm was listed. State Laws is a binary variable where 1 signifies that the state of incorporation has high (greater than 4) number of state antitakeover statutes. Delaware is binary where 1 signifies that the firm is incorporated in Delaware. Dual is binary where 1 signifies that the firm has dual-class structure. Instruments are lagged ad valorem tariff and ad valorem transport costs (Bernard, Jensen and Schott (2004)). Data is annual for 1990-2001, with only manufacturing (SIC 2000-3999) firms included. Standard errors are robust to heteroskedasticity and arbitrary serial correlation within industry-year cells.

	Baseline Specification		Alternative Specifications	
	2SLS, no fixed effects	2SLS, fixed effects	2SLS, control for Import, fixed effects	2SLS, unrestricted, fixed effects
	(1)	(2)	(3)	(4)
Industry Concentration	0.603***	0.775***	0.781***	
	(0.061)	(0.093)	(0.081)	
Tobin's Q	-0.030***	-0.020***	-0.021***	-0.020***
	(0.004)	(0.004)	(0.004)	(0.004)
Size	-0.008***	-0.007***	-0.007***	-0.007***
	(0.001)	(0.001)	(0.001)	(0.001)
Age	0.001*	-0.0002	-0.0002	-0.0002
	(0.0003)	(0.0003)	(0.0003)	(0.0003)
State Laws	0.166***	0.153***	0.157***	0.156***
	(0.018)	(0.021)	(0.022)	(0.021)
Delaware	0.012	0.039**	0.040**	0.039**
	(0.015)	(0.018)	(0.018)	(0.017)
Dual	-0.185***	-0.154***	-0.155***	-0.154***
	(0.013)	(0.018)	(0.018)	(0.017)
Import Penetration			0.010	
			(0.135)	
Domestic Concentration				0.736***
				(0.103)
(Import Penetration)*(Domestic Concentration)				-0.611***
				(0.185)
First-stage R^2	0.19	0.56		0.61
F-test on excluded	563.72	297.66		68.12
Observations	5981	5981	5981	5981
Firms	843	843	843	843
χ^2 (Hausman test)	41.67***	46.95***	46.26***	7.28***
	(0.001)	(0.000)	(0.001)	(0.007)
χ^2 (test $\beta^{Domestic} = -\beta^{Domestic^{*}Import}$)				1.53
				(0.22)
Pseudo R^2	0.24	0.37	0.39	0.39

Table 5: ATPs and Industry Concentration - Additional Controls

This table reports 2SLS estimates of the probability that the firm has high (E≥4) level of antitakeover protection in a particular firm year. Industry is defined by four-digit SIC code. Industry concentration is domestic four-firm concentration ratio multiplied by a dummy variable equal to 1 if import penetration ratio is above sample mean. Total Compensation is measured as salary and cash bonus plus dollar value of restricted stock grants at date of grant plus dollar value of option grants, calculated by the Black-Scholes formula, plus all other annual compensation. Percentage Owned is the percentage of common equity held by the CEO through stocks and options. Block is percentage of common stock held by the firms largest institutional blockholder. Pension Fund is percentage of common stock held by the 18 largest public pension funds as a group (Cremers and Nair (2004)). Cash holdings is the ratio of cash and marketable securities to total assets. Dividend is binary where 1 signifies that the firm paid had dividend payout during the year. Asset Tangibility is the ratio of tangible assets (net property, plant and equipment) to total assets. Profitability is the ratio of operating income before depreciation to book assets. Instruments are lagged ad valorem tariff and ad valorem transport costs (Bernard, Jensen and Schott (2004)). Other controls include Tobin's Q, sales, age, number of statutes in the state of incorporation, a dummy variable for Delaware incorporation, and a dummy variable for dual-class structure. Data is annual for 1990-2001, with only manufacturing (SIC 2000-3999) firms included. Standard errors are robust to heteroskedasticity and arbitrary serial correlation within industry-year cells.

	Managerial Incentives	Institutional Ownership	Financial Position	Profitability	All
	(1)	(2)	(3)	(4)	(5)
Industry Concentration	0.774***	0.760***	0.750***	0.778***	0.759***
	(0.092)	(0.094)	(0.092)	(0.093)	(0.091)
Total Compensation	0.050***				0.051***
	(0.015)				(0.015)
Percentage Owned	-0.053***				-0.049***
	(0.018)				(0.018)
CEO Age	-0.049***				-0.047***
	(0.018)				(0.018)
Block		-0.001			-0.002
		(0.011)			(0.011)
Pension Fund		0.028***			0.021*
		(0.011)			(0.011)
Cash Holdings			-0.271***		-0.258***
			(0.037)		(0.039)
Dividend			-0.021		-0.045
			(0.115)		(0.117)
Asset Tangibility				-0.025**	-0.033***
				(0.012)	(0.012)
Profitability				0.179***	0.080
				(0.056)	(0.058)
Observations	5982	5982	5982	5164	5164
Firms	843	843	843	814	814
F	498.13***	394.46***	396.92***	365.48***	421.91***
Pseudo R^2	0.38	0.37	0.38	0.37	0.37

Table 6: ATPs and Industry Concentration - Interactions

This table reports 2SLS estimates of the probability that the firm has high (E=4) level of antitakeover protection in a particular firm year. Industry is defined by four-digit SIC code. Industry concentration is domestic four-firm concentration ratio multiplied by a dummy variable equal to 1 if import penetration ratio is above sample mean. Total Compensation is measured as salary and cash bonus plus dollar value of restricted stock grants at date of grant plus dollar value of option grants, calculated by the Black-Scholes formula, plus all other annual compensation. Percentage Owned is the percentage of common equity held by the CEO through stocks and options. Block is percentage of common stock held by the firms largest institutional blockholder. Pension Fund is percentage of common stock held by the 18 largest public pension funds as a group (Cremers and Nair (2004)). Cash holdings is the ratio of cash and marketable securities to total assets. Dividends is binary where 1 signifies that the firm paid had dividend payout during the year. Asset Tangibility is the ratio of tangible assets (net property, plant and equipment) to total assets. Profitability is the ratio of operating income before depreciation to book assets. Instruments are lagged ad valorem tariff and ad valorem transport costs (Bernard, Jensen and Schott (2004)). Other controls include Tobin's Q, sales, age, number of statutes in the state of incorporation, a dummy variable for Delaware incorporation, and a dummy variable for dual-class structure. Data is annual for 1990-2001, with only manufacturing (SIC 2000-3999) firms included. Standard errors are robust to heteroskedasticity and arbitrary serial correlation within industry-year cells.

	Managerial Incentives	Institutional Ownership	Financial Position	Profitability	All
	(1)	(2)	(3)	(5)	(6)
Industry Concentration	0.819***	0.750***	0.795***	0.768***	0.842***
	(0.099)	(0.095)	(0.094)	(0.152)	(0.164)
(Total Compensation)*(Industry Concentration)	0.030				0.038
	(0.033)				(0.035)
(Percentage Owned)*(Industry Concentration)	-0.140***				-0.126***
	(0.036)				(0.039)
(Block)*(Industry Concentration)		0.025			0.035
		(0.025)			(0.027)
(Pension Fund)*(Industry Concentration)		0.008			-0.009
		(0.026)			(0.028)
(Cash Holdings)*(Industry Concentration)			-0.499***		-0.512***
			(0.084)		(0.098)
(Dividend)*(Industry Concentration)			-0.107		-0.527**
			(0.276)		(0.269)
(Asset Tangibility)*(Industry Concentration)				-0.143	-0.177
				(0.118)	(0.120)
(Profitability)*(Industry Concentration)				0.424**	-0.339*
				(0.184)	(0.192)
Observations	5982	5982	5982	5164	5164
Firms	843	843	843	814	814
F	585.30***	399.24***	393.23***	484.55***	416.70***
Pseudo R^2	0.37	0.38	0.37	0.39	0.38

Table 7: ATPs and Industry Concentration by Equity Dependence

This table reports 2SLS estimates of the probability that the firm has high (E≥4) level of antitakeover protection in a particular firm year. Size is sales at the beginning of the year, winsorized at 1%. Tobin's Q is the market value of assets over the book value of assets, winsorized at 1%. Age is number of years since firm was listed. State Laws is a binary variable where 1 signifies that the state of incorporation has high (= 4) number of state antitakeover statutes. Delaware is binary where 1 signifies that the firm is incorporated in Delaware. Dual is a dummy variable where 1 signifies that the firm has dual-class structure. The sample is split into half (columns (1)-(2)) and terciles (columns (3)-(5)) using values of the Kaplan-Zingales index at the beginning of the prior year. Data is annual for 1990-2001, with only manufacturing (SIC 2000-3999) firms included. Standard errors are robust to heteroskedasticity and arbitrary serial correlation within industry-year cells.

	KZ		KZ (terciles)		
	Low	High	Low	Mid	High
	(1)	(2)	(3)	(4)	(5)
Industry Concentration	0.446***	0.608***	0.462***	0.719***	0.808***
	(0.105)	(0.237)	(0.115)	(0.159)	(0.131)
Tobin's Q	-0.028***	-0.028***	-0.030***	-0.034***	-0.035***
	(0.005)	(0.005)	(0.005)	(0.011)	(0.007)
Size	-0.011***	-0.007***	-0.012***	-0.009***	-0.001
	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)
Age	-0.001*	0.001***	-0.001**	0.001	0.001
	(0.0007)	(0.0004)	(0.0006)	(0.0007)	(0.001)
State Laws	0.179***	0.154***	0.174***	0.150***	0.134***
	(0.030)	(0.023)	(0.027)	(0.039)	(0.040)
Delaware	-0.019	0.028	-0.023	0.019	0.032
	(0.024)	(0.020)	(0.022)	(0.037)	(0.033)
Dual	-0.247***	-0.149***	-0.264***	-0.251***	-0.079***
	(0.020)	(0.016)	(0.020)	(0.032)	(0.028)
Observations	2074	3893	2140	1578	1417
Firms	345	498	397	226	220
Pseudo R^2	0.30	0.25	0.27	0.27	0.20

Table 8: ATPs and Firm Value - Announcement of Pill Adoption

This table reports pooled OLS regressions of the average wealth effect of initial poison-pill rights issues announced in the period 1983-96 for NYSE, Amex, and NASDAQ-listed stocks. The dependent variable is the cumulative abnormal return over days - 1 to + 1 using a market model estimated with the CRSP value-weighted market portfolio during the year (trading days - 255 to - 2) prior to the pill announcement. This regression is performed on subsamples with industry concentration above (below) sample mean. Industry concentration is domestic four-firm concentration ratio multiplied by a dummy variable equal to 1 if import penetration ratio is above sample mean. The announcement is subject to speculation if a 13D filing, rumors of a bid, or an explicit takeover bid make it likely that a control premium is built into the issuers stock price at the time of announcement. Concurrent M&A news is a dummy variable equal one if M&A news is announced at the same time as the pill. A dummy variable indicates NASDAQ-listed firms. Columns (2), (4), and (6) show the average abnormal return for each subset of the sample. Standards errors use Whites (1980) heteroskedasticity-consistent covariance matrix. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1% respectively.

	All		Unconcentrated		Concentrated	
Variable	OLS Coefficient (1)	Average Return (2)	OLS Coefficient (3)	Average Return (4)	OLS Coefficient (5)	Average Return (6)
Subject to Speculation	-0.025**	-0.041***	-0.029*	-0.042***	-0.008	-0.019
	(0.010)	(0.008)	(0.015)	(0.013)	(0.019)	(0.014)
Concurrent M&A Announcement	0.011	0.020	-0.001	0.005	-0.064	-0.062
	(0.059)	(0.078)	(0.087)	(0.101)	(0.094)	(0.160)
NASDAQ	0.033	-0.100***	0.021	-0.049	-0.016	-0.056**
	(0.028)	(0.029)	(0.041)	(0.051)	(0.055)	(0.025)
Year fixed effects	Yes		Yes		Yes	
R^2	0.027		0.047		0.074	
Observations	958		416		277	

Table 9: ATPs and Takeover Characteristics - Target Premiums

This table reports pooled OLS regressions of the takeover premium (the cumulative abnormal return to the target firms stock for trading days (-63, 126) relative to the date of the first bid) for successful and unsuccessful takeover bids for exchange-listed target firms, 1975-96. Concentration is domestic four-firm concentration ratio multiplied by a dummy variable equal to 1 if import penetration ratio is above sample mean. ROE is earnings divided by average stockholders (book) equity and Sales Growth is the growth in sales over the fiscal year before the first bid. Liquidity is the ratio of net liquid assets to total assets, D/E is the long-term debt to book equity, M/B is the ratio of market to book value of stockholders equity, P/E is the ratio of stock price to the earnings for the last fiscal year, and Size is the logarithm of the market value of common stock, all measured at the end of the fiscal year before the first bid. Hostility is the Host(Factor) measure of hostility from Schwert (2000). Variation across time is controlled for by including year fixed effects. In addition, several variables that may be only known during the takeover contest are included in the model. Pill equals one if the target firm has a poison pill in place, Auction equals one if there are multiple bidders, Cash equals one if there is an all-cash payment to target shareholders, Tender offer equals one if the deal is a tender offer. Standard errors are robust to heteroskedasticity. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1% respectively.

Variable	Baseline (1)	Controls for hostility (2)	Controls for other deal characteristics (3)
Pill	-0.074	-0.074	-0.028
	(0.058)	(0.060)	(0.054)
Concentration	-0.024	-0.024	-0.012
	(0.029)	(0.029)	(0.029)
Pill*Concentration	0.236***	0.236***	0.179**
	(0.086)	(0.086)	(0.080)
ROE	0.029	0.029	0.091
	(0.217)	(0.217)	(0.210)
Sales Growth	-0.149	-0.149	-0.134
	(0.092)	(0.093)	(0.090)
Liquidity	-0.168**	-0.168**	-0.229***
	(0.081)	(0.081)	(0.079)
D/E	-0.063***	-0.063***	-0.057***
	(0.021)	(0.021)	(0.019)
M/B	0.016	0.016	0.014
	(0.017)	(0.018)	(0.016)
P/E	-0.004***	-0.004***	-0.003***
	(0.001)	(0.001)	(0.001)
Size	-0.020**	-0.020**	-0.021*
	(0.010)	(0.010)	(0.011)
Hostility		0.001	-0.146***
		(0.050)	(0.051)
Auction			0.113***
			(0.038)
Cash			0.080***
			(0.030)
Tender			0.164***
			(0.028)
Constant	0.603***	0.603***	0.517***
	(0.127)	(0.126)	(0.131)
R^2	0.052	0.052	0.136
Observations	837	837	837

Table 10: ATPs and Takeover Characteristics - Target Premiums by Concentration

This table reports pooled OLS regressions of the takeover premium (the cumulative abnormal return to the target firms stock for trading days (-63, 126) relative to the date of the first bid) for successful and unsuccessful takeover bids for exchange-listed target firms, 1975-96. This regression is performed on subsamples with industry concentration above (below) sample mean. Industry concentration is domestic four-firm concentration ratio multiplied by a dummy variable equal to 1 if import penetration ratio is above sample mean. ROE is earnings divided by average stockholders (book) equity and Sales Growth is the growth in sales over the fiscal year before the first bid. Liquidity is the ratio of net liquid assets to total assets, D/E is the long-term debt to book equity, M/B is the ratio of market to book value of stockholders equity, P/E is the ratio of stock price to the earnings for the last fiscal year, and Size is the logarithm of the market value of common stock, all measured at the end of the fiscal year before the first bid. Hostility is the Host(Factor) measure of hostility from Schwert (2000). Variation across time is controlled for by including year fixed effects. In addition, several variables that may be only known during the takeover contest are included in the model. Pill equals one if the target firm has a poison pill in place, Auction equals one if there are multiple bidders, Cash equals one if there is an all-cash payment to target shareholders, Tender offer equals one if the deal is a tender offer. Standard errors are robust to heteroskedasticity. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1% respectively.

	Baseline			Controls for hostility			Controls for other deal characteristics		
Variable	All	Unconc-entrated	Conc-entrated	All	Unconc-entrated	Conc-entrated	All	Unconc-entrated	Conc-entrated
Pill	0.036	-0.060	0.128	0.038	-0.076	0.157**	0.052	-0.027	0.153**
	(0.045)	(0.060)	(0.081)	(0.046)	(0.062)	(0.081)	(0.043)	(0.056)	(0.078)
ROE	-0.050	0.235	-0.275	-0.052	0.258	-0.280	-0.016	0.346	-0.314
	(0.182)	(0.240)	(0.406)	(0.183)	(0.239)	(0.399)	(0.176)	(0.209)	(0.429)
Sales Growth	-0.085	-0.171	-0.111	-0.085	-0.163	-0.145	-0.077	-0.155	-0.125
	(0.077)	(0.113)	(0.151)	(0.078)	(0.113)	(0.154)	(0.076)	(0.112)	(0.144)
Liquidity	-0.111	-0.182**	-0.214	-0.111	-0.180**	-0.207	-0.171**	-0.242***	-0.251*
	(0.069)	(0.097)	(0.148)	(0.069)	(0.097)	(0.146)	(0.068)	(0.091)	(0.148)
D/E	-0.039	-0.073***	-0.055*	-0.039	-0.073***	-0.055*	-0.034	-0.061***	-0.058*
	(0.024)	(0.023)	(0.032)	(0.024)	(0.024)	(0.032)	(0.021)	(0.023)	(0.032)
M/B	0.005	0.026	0.005	0.005	0.027	0.003	0.003	0.017	0.013
	(0.017)	(0.020)	(0.026)	(0.017)	(0.020)	(0.027)	(0.015)	(0.019)	(0.028)
P/E	-0.003**	-0.005***	-0.003	-0.003**	-0.005***	-0.004	-0.002*	-0.003**	-0.003
	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.002)
Size	-0.013	-0.027**	-0.011	-0.013	-0.029**	-0.008	-0.014	-0.033***	-0.002
	(0.009)	(0.012)	(0.019)	(0.009)	(0.012)	(0.019)	(0.009)	(0.012)	(0.021)
Hostility				-0.008	0.082	-0.107	-0.145***	-0.095	-0.215**
				(0.045)	(0.068)	(0.077)	(0.047)	(0.063)	(0.089)
Auction							0.083**	0.128***	0.085
							(0.034)	(0.043)	(0.074)
Cash							0.081***	0.093**	0.080
							(0.027)	(0.038)	(0.054)
Tender							0.153***	0.177***	0.134***
							(0.025)	(0.035)	(0.047)
Constant	0.493***	0.632***	0.562**	0.493***	0.631***	0.559**	0.423***	0.562***	0.425
	(0.109)	(0.146)	(0.251)	(0.109)	(0.146)	(0.249)	(0.115)	(0.147)	(0.270)
t-test			3.81			2.97			2.01
R^2	0.023	0.072	0.045	0.023	0.075	0.050	0.093	0.180	0.103
Observations	1070	536	301	1070	536	301	1070	536	301

Table 11: ATPs and Takeover Characteristics - Likelihood of Success

This table reports pooled probit estimates of the likelihood that takeover bids for exchange-listed target firms from 1975 to 1996 will be successful. The dependent variable is binary where 1 signifies that a bid leads to an acquisition of a target firm (even if a different bidder is the acquirer), and zero otherwise. This regression is performed on subsamples with industry concentration above (below) sample mean. Industry concentration is domestic four-firm concentration ratio multiplied by a dummy variable equal to 1 if import penetration ratio is above sample mean. ROE is earnings divided by average stockholders (book) equity and Sales Growth is the growth in sales over the fiscal year before the first bid. Liquidity is the ratio of net liquid assets to total assets, D/E is the long-term debt to book equity, M/B is the ratio of market to book value of stockholders equity, P/E is the ratio of stock price to the earnings for the last fiscal year, and Size is the logarithm of the market value of common stock, all measured at the end of the fiscal year before the first bid. Hostility is the Host(Factor) measure of hostility from Schwert (2000). Variation across time is controlled for by including year fixed effects. In addition, several variables that may be only known during the takeover contest are included in the model. Pill equals one if the target firm has a poison pill in place, Auction equals one if there are multiple bidders, Cash equals one if there is an all-cash payment to target shareholders, Tender offer equals one if the deal is a tender offer. Coefficients are reported as marginal effects. Standard errors are robust to heteroskedasticity. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1% respectively.

	Baseline			Controls for hostility			Controls for other deal characteristics		
Variable	All	Unconc-entrated	Conc-entrated	All	Unconc-entrated	Conc-entrated	All	Unconc-entrated	Conc-entrated
Pill	-0.147***	-0.181**	-0.087	-0.039	-0.078	0.030	-0.005	0.011	0.041
	(0.056)	(0.094)	(0.090)	(0.052)	(0.086)	(0.086)	(0.048)	(0.058)	(0.089)
ROE	-0.085	-0.074	-0.450	-0.208	-0.236	-0.477	-0.131	0.094	-0.482
	(0.190)	(0.261)	(0.424)	(0.190)	(0.260)	(0.435)	(0.184)	(0.183)	(0.426)
Sales Growth	-0.113	-0.114	-0.038	-0.167**	-0.168*	-0.164	-0.159**	-0.161**	-0.100
	(0.076)	(0.097)	(0.184)	(0.078)	(0.101)	(0.188)	(0.074)	(0.095)	(0.187)
Liquidity	0.082	0.108	0.081	0.090	0.101	0.125	-0.034**	-0.002	-0.026
	(0.084)	(0.121)	(0.189)	(0.083)	(0.119)	(0.187)	(0.076)	(0.096)	(0.184)
D/E	-0.055***	-0.060**	-0.083	-0.055***	-0.063**	-0.085*	-0.051***	-0.032	-0.112**
	(0.020)	(0.026)	(0.051)	(0.019)	(0.026)	(0.048)	(0.020)	(0.022)	(0.045)
M/B	0.052***	0.056**	0.088**	0.043***	0.050***	0.074**	0.042**	0.023	0.109***
.	(0.017)	(0.022)	(0.038)	(0.015)	(0.019)	(0.036)	(0.017)	(0.015)	(0.039)
P/E	-0.001	0.001	-0.004	-0.002	-0.0002	-0.004	-0.001	0.002	-0.002
	(0.001)	(0.002)	(0.003)	(0.001)	(0.002)	(0.003)	(0.001)	(0.001)	(0.003)
Size	0.007	0.016	-0.016	0.023**	0.032**	-0.002	0.017	0.018	0.010
	(0.010)	(0.015)	(0.023)	(0.010)	(0.015)	(0.022)	(0.011)	(0.013)	(0.025)
Hostility				-0.463***	-0.487	-0.421	-0.803***	-0.812***	-0.810***
				(0.056)	(0.080)	(0.106)	(0.063)	(0.089)	(0.119)
Auction							0.185***	0.143***	0.273***
							(0.025)	(0.031)	(0.046)
Cash							0.088***	0.060	0.188***
							(0.030)	(0.041)	(0.068)
Tender							0.322***	0.351***	0.313***
							(0.025)	(0.034)	(0.052)
t-test			0.74			1.15			0.78
Pseudo-R^2	0.033	0.072	0.045	0.092	0.128	0.075	0.282	0.342	0.281
Observations	1071	536	301	1071	536	301	1070	536	301

Table 12: ATPs and Takeover Characteristics - Likelihood of Auction

This table reports pooled probit estimates of the likelihood that takeover bids for exchange-listed target firms from 1975 to 1996 will lead to competition from other bidders (an auction). The dependent variable is binary where 1 signifies that a bid is followed by a formal bid for the target firm by a different bidder within a year. This regression is performed on subsamples with industry concentration above (below) sample mean. Industry concentration is domestic four-firm concentration ratio multiplied by a dummy variable equal to 1 if import penetration ratio is above sample mean. ROE is earnings divided by average stockholders (book) equity and Sales Growth is the growth in sales over the fiscal year before the first bid. Liquidity is the ratio of net liquid assets to total assets, D/E is the long-term debt to book equity, M/B is the ratio of market to book value of stockholders equity, P/E is the ratio of stock price to the earnings for the last fiscal year, and Size is the logarithm of the market value of common stock, all measured at the end of the fiscal year before the first bid. Hostility is the Host(Factor) measure of hostility from Schwert (2000). Variation across time is controlled for by including year fixed effects. Pill equals one if the target firm has a poison pill in place, Cash equals one if there is an all-cash payment to target shareholders, Tender offer equals one if the deal is a tender offer. Coefficients are reported as marginal effects. Standard errors are robust to heteroskedasticity. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1% respectively.

	Controls for hostility			Controls for other deal characteristics		
Variable	All	Unconc-entrated	Conc-entrated	All	Unconc-entrated	Conc-entrated
Pill	-0.065	-0.103*	-0.026	-0.057	-0.092	-0.033
	(0.034)	(0.045)	(0.063)	(0.034)	(0.047)	(0.057)
ROE	-0.269*	-0.264	-0.108	-0.278**	-0.247	-0.236
	(0.145)	(0.207)	(0.333)	(0.139)	(0.200)	(0.328)
Sales Growth	0.004	-0.047	0.066	0.023	-0.036	0.081
	(0.064)	(0.089)	(0.153)	(0.035)	(0.090)	(0.152)
Liquidity	0.050	0.058	0.072	0.007	0.025	0.026
	(0.068)	(0.100)	(0.147)	(0.067)	(0.101)	(0.137)
D/E	-0.008	-0.018	0.022	-0.002	-0.011	0.018
	(0.015)	(0.019)	(0.028)	(0.013)	(0.018)	(0.025)
M/B	0.015	0.027**	-0.054	0.013	0.023**	-0.033
	(0.011)	(0.014)	(0.053)	(0.011)	(0.013)	(0.042)
P/E	-0.001	-0.001	-0.003	-0.001	-0.001	-0.001
	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)
Size	0.001	0.101	-0.010	0.001	0.002	-0.004
	(0.001)	(0.077)	(0.016)	(0.009)	(0.013)	(0.016)
Hostility	0.444***	0.452***	0.397***	0.369***	0.391***	0.322***
	(0.048)	(0.070)	(0.088)	(0.048)	(0.071)	(0.090)
Runup	0.011	0.009	-0.068	-0.012	0.068	-0.052
	(0.055)	(0.065)	(0.106)	(0.056)	(0.079)	(0.099)
Cash				0.089***	0.068*	0.098*
				(0.025)	(0.035)	(0.046)
Tender				0.101***	0.081**	0.152***
				(0.027)	(0.041)	(0.051)
t-test			0.17			0.15
Pseudo-R^2	0.110	0.118	0.156	0.150	0.140	0.154
Observations	1070	536	301	1070	536	301

Table 13: ATPs and Takeover Characteristics - Method of Payment

This table reports pooled probit estimates of the likelihood that takeover bids for exchange-listed target firms from 1975 to 1996 will take the form of an all-cash payment to the targets shareholders. The dependent variable is binary where 1 signifies that the method of payment for the takeover deal is cash. This regression is performed on subsamples with industry concentration above (below) sample mean. Industry concentration is domestic four-firm concentration ratio multiplied by a dummy variable equal to 1 if import penetration ratio is above sample mean. ROE is earnings divided by average stockholders (book) equity and Sales Growth is the growth in sales over the fiscal year before the first bid. Liquidity is the ratio of net liquid assets to total assets, D/E is the long-term debt to book equity, M/B is the ratio of market to book value of stockholders equity, P/E is the ratio of stock price to the earnings for the last fiscal year, and Size is the logarithm of the market value of common stock, all measured at the end of the fiscal year before the first bid. Hostility is the Host(Factor) measure of hostility from Schwert (2000). Variation across time is controlled for by including year fixed effects. Pill equals one if the target firm has a poison pill in place, Auction equals one if there are multiple bidders, Tender offer equals one if the deal is a tender offer. Coefficients are reported as marginal effects. Standard errors are robust to heteroskedasticity. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1% respectively.

	Controls for hostility			Controls for other deal characteristics		
Variable	All	Unconc-entrated	Conc-entrated	All	Unconc-entrated	Conc-entrated
Pill	0.092	-0.068	0.253**	0.139**	0.021	0.282***
	(0.057)	(0.102)	(0.084)	(0.057)	(0.096)	(0.081)
ROE	0.075	-0.125	0.816*	0.172	0.005	0.949**
	(0.217)	(0.294)	(0.454)	(0.207)	(0.287)	(0.484)
Sales Growth	-0.134	-0.152	0.359*	-0.158*	-0.199*	-0.402*
	(0.088)	(0.116)	(0.211)	(0.089)	(0.118)	(0.218)
Liquidity	0.121	0.116	-0.123	0.004	0.025	-0.272
	(0.095)	(0.134)	(0.213)	(0.096)	(0.138)	(0.216)
D/E	-0.037	-0.023	-0.102	-0.040*	-0.004	-0.113*
	(0.034)	(0.023)	(0.062)	(0.023)	(0.028)	(0.063)
M/B	0.016	0.033*	-0.021	0.021	0.027	-0.004
	(0.018)	(0.019)	(0.040)	(0.017)	(0.019)	(0.041)
P/E	-0.0002	-0.002	-0.002	0.001	0.0004	0.0002
	(0.001)	(0.003)	(0.003)	(0.002)	(0.002)	(0.003)
Size	-0.068***	-0.048***	-0.125***	-0.091***	-0.070***	-0.144***
	(0.012)	(0.017)	(0.027)	(0.013)	(0.018)	(0.028)
Hostility	0.420***	0.486***	0.381***	0.223***	0.316***	0.197
	(0.068)	(0.090)	(0.133)	(0.077)	(0.099)	(0.147)
Auction				0.134***	0.088	0.171**
				(0.041)	(0.058)	(0.082)
Tender				0.353***	0.407***	0.316***
				(0.029)	(0.038)	(0.064)
t-test			2.07			2.16
Pseudo-R^2	0.103	0.113	0.233	0.201	0.242	0.305
Observations	1070	536	301	1070	536	301

Table 14: ATPs and Takeover Characteristics - Bidder Returns

This table reports pooled OLS regressions of bidder returns (the cumulative abnormal return to the bidder firms stock for trading days (-63, 126) relative to the date of the first bid) for successful and unsuccessful takeover bids for exchange-listed target firms, 1975-96. This regression is performed on subsamples with industry concentration above (below) sample mean. Industry concentration is domestic four-firm concentration ratio multiplied by a dummy variable equal to 1 if import penetration ratio is above sample mean. Hostility is the Host(Factor) measure of hostility from Schwert (2000). Target size and Bidder size are the logarithms of the market values of common stocks, all measured at the end of the fiscal year before the first bid. Target runup is the cumulative abnormal return to the target firms stock for trading days (-63, -1) before the first bid and Target markup is the cumulative abnormal return to the target firms stock for trading days (0, 126) based on CRSP value-weighted market model estimates for trading days (-316, -64). In addition, several variables that may be only known during the takeover contest are included in the model. Pill equals one if the target firm has a poison pill in place, Auction equals one if there are multiple bidders, Cash equals one if there is an all-cash payment to target shareholders, Tender offer equals one if the deal is a tender offer, and Successful equals one if the target firm is taken over by some bidder as a result of a bid that occurs within twelve months of the first bid. Variation across time is controlled for by including year fixed effects. Standard errors are robust to heteroskedasticity. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1% respectively.

	Baseline			Controls for other deal characteristics		
Variable	All	Unconcentrated	Concentrated	All	Unconcentrated	Concentrated
Auction	-0.084***	-0.071*	-0.109**	-0.103***	-0.072*	-0.139***
	(0.026)	(0.040)	(0.055)	(0.027)	(0.042)	(0.051)
Target Size	0.002	0.006	0.008	0.000	0.004	0.009
	(0.006)	(0.009)	(0.015)	(0.006)	(0.009)	(0.017)
Bidder Size	0.014*	0.002	0.013	0.012	0.004	0.009
	(0.008)	(0.020)	(0.009)	(0.008)	(0.020)	(0.007)
Target runup	0.095*	0.162***	-0.058	0.083*	0.155***	-0.075
	(0.049)	(0.053)	(0.133)	(0.049)	(0.055)	(0.133)
Target markup	0.135***	0.137***	0.100*	0.112***	0.129***	0.046
	(0.029)	(0.044)	(0.058)	(0.032)	(0.046)	(0.069)
Cash				0.005	-0.008	0.021
				(0.021)	(0.032)	(0.049)
Successful				0.026	-0.014	0.059
				(0.027)	(0.037)	(0.064)
Pill				0.078**	0.072	0.084
				(0.034)	(0.053)	(0.053)
Tender				0.045**	0.052	0.046
				(0.021)	(0.034)	(0.045)
t-test (Auction)			0.781			1.725
Pseudo-R^2	0.051	0.059	0.058	0.063	0.068	0.080
Observations	1098	491	296	1098	491	296

Table 15: ATPs and Firm Value - Q-regressions

This table reports pooled OLS regressions of industry-adjusted Tobin's Q on measures of ATPs and other governance characteristics. Tobin's Q is the market value of assets over the book value of assets, winsorized at 1%. Industry-adjusted Tobin's Q is Tobin's Q minus the median Tobin's Q in the industry, where industry is defined by four-digit SIC code. ROA is the ratio of net income to total assets, industry adjusted. Size is assets at the beginning of the year, industry-adjusted. Age is number of years since firm was listed. Delaware is binary where 1 signifies that the firm is incorporated in Delaware. Concentration is domestic four-firm concentration ratio multiplied by a dummy variable equal to 1 if import penetration ratio is above sample mean. Block is percentage of common stock held by the firms largest institutional blockholder. Pension Fund is percentage of common stock held by the 18 largest public pension funds as a group (Cremers and Nair (2004)). Total Compensation is salary and cash bonus plus dollar value of restricted stock grants at date of grant plus dollar value of option grants, calculated by the Black-Scholes formula, plus all other annual compensation. Percentage Owned is the percentage of common equity held by the CEO through stocks and options. Data is annual for 1990- 2001, with only manufacturing (SIC 2000-3999) firms included. Standard errors are robust to heteroskedasticity and arbitrary serial correlation within industry-year cells.

	ATPs measured by E			ATPs measured by GIM		
	no controls	institutional ownership	all	no controls	institutional ownership	all
Variable	(1)	(2)	(3)	(4)	(5)	(6)
ATPs	-0.070***	-0.075***	-0.076***	-0.028***	-0.030***	-0.030***
	(0.011)	(0.011)	(0.011)	(0.005)	(0.005)	(0.005)
ROA	7.033***	6.989***	6.957***	7.050***	7.007***	6.977***
	(0.141)	(0.141)	(0.141)	(0.141)	(0.141)	(0.141)
Size	0.009***	0.008***	0.006***	0.009***	0.009***	0.007***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Age	0.001	0.0003	0.001	0.0001	0.0001	0.0001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Delaware	-0.046**	-0.043**	-0.050**	-0.032	-0.030	-0.036*
	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)
Concentration	-0.086	-0.119	-0.148	-0.226	-0.291*	-0.321**
	(0.089)	(0.089)	(0.090)	(0.154)	(0.155)	(0.155)
Concentration*ATPs	0.064**	0.079***	0.082***	0.030**	0.037**	0.039**
	(0.031)	(0.032)	(0.031)	(0.015)	(0.015)	(0.015)
Block		-0.112**	-0.079		-0.103**	-0.071
		(0.048)	(0.049)		(0.478)	(0.049)
Pension Fund		-0.023	0.018		-0.014	0.026
		(0.045)	(0.046)		(0.045)	(0.047)
Block*Concentration		0.161	0.076		0.146	0.063
		(0.103)	(0.106)		(0.103)	(0.106)
(Pension Fund)		-0.178*	-0.254**		-0.197**	-0.270***
*Concentration		(0.096)	(0.101)		(0.097)	(0.101)
Total Compensation			-0.049			-0.047
			(0.067)			(0.067)
(Total Compensation)			0.358**			0.350**
*Concentration			(0.140)			(0.140)
Percentage Owned			0.003			0.005
			(0.072)			(0.072)
(Percentage Owned)			-0.178			-0.177
*Concentration			(0.155)			(0.156)
R^2	0.31	0.32	0.32	0.31	0.31	0.32
Observations	5995	5995	5995	5995	5995	5995

Table 16: ATPs and Firm Value - Q-regressions by concentration

This table reports pooled OLS regressions of industry-adjusted Tobin's Q on measures of ATPs and institutional ownership. Tobin's Q is the market value of assets over the book value of assets, winsorized at 1%. Industry-adjusted Tobin's Q is Tobin's Q minus the median Tobin's Q in the industry, where industry is defined by four-digit SIC code. ROA is the ratio of net income to total assets, industry adjusted. Size is assets at the beginning of the year, industry-adjusted. Age is number of years since firm was listed. Delaware is binary where 1 signifies that the firm is incorporated in Delaware. Industry concentration is domestic four-firm concentration ratio multiplied by a dummy variable equal to 1 if import penetration ratio is above sample mean. Block is percentage of common stock held by the firms largest institutional blockholder. Pension Fund is percentage of common stock held by the 18 largest public pension funds as a group (Cremers and Nair (2004)). Data is annual for 1990-2001, with only manufacturing (SIC 2000-3999) firms included. Standard errors are robust to heteroskedasticity and arbitrary serial correlation within industry-year cells. This regression is performed on subsamples with industry concentration above and below sample mean.

	Unconcentrated		Concentrated	
	ATPs measured by E	ATPs measured by GIM	ATPs measured by E	ATPs measured by GIM
Variable	(1)	(2)	(3)	(4)
ATPs	-0.029***	-0.040***	-0.065***	-0.074***
	(0.013)	(0.013)	(0.013)	(0.013)
ROA	0.405***	0.405***	0.456***	0.457***
	(0.013)	(0.013)	(0.012)	(0.012)
Block	-0.062***	-0.062***	-0.010	-0.010
	(0.013)	(0.013)	(0.013)	(0.013)
Pension Fund	-0.024	-0.021	-0.036***	-0.034***
	(0.013)	(0.013)	(0.012)	(0.012)
Size	0.022	0.023	0.067***	0.070***
	(0.014)	(0.014)	(0.013)	(0.013)
Age	0.069***	0.061***	0.026	0.014
	(0.014)	(0.015)	(0.014)	(0.014)
Delaware	0.007	0.009	-0.027**	-0.020**
	(0.013)	(0.013)	(0.013)	(0.013)
Observations	5287	5287	5151	5151

Table 17: ATPs and Firm Value - Q-regressions (Identification through Heteroskedasticity)

This table reports IH estimates of four simultaneous equations (industry-adjusted Tobin's Q, ATPs (E index), ROA, and institutional ownership) on each other and various controls. Tobin's Q is the market value of assets over the book value of assets, winsorized at 1%. Industry-adjusted Tobin's Q is Tobin's Q minus the median Tobin's Q in the industry, where industry is defined by four-digit SIC code. ROA is the ratio of net income to total assets, industry adjusted. Size is assets at the beginning of the year, industry-adjusted. Age is number of years since firm was listed. Delaware is binary where 1 signifies that the firm is incorporated in Delaware. Industry concentration is domestic four-firm concentration ratio multiplied by a dummy variable equal to 1 if import penetration ratio is above sample mean. Block is percentage of common stock held by the firms largest institutional blockholder (Cremers and Nair (2004)). Data is annual for 1990-2001, with financial firms excluded. Standard errors are robust to heteroskedasticity and arbitrary serial correlation within industry-year cells. This regression is performed on subsamples with industry concentration above (below) sample mean. Identification is achieved by exploiting differences in the variances of error terms before and after the Nasdaq bubble (pre- and post-1998).

Indusry	Variable	Tobin's Q	Block	ROA	E	Size	Age	Delaware
Unconcentrated	Tobin's Q		0.001***	0.472***	-0.059***	0.078***	0.171***	-0.007***
(Observations=5287)			(0.0001)	(0.005)	(0.003)	(0.002)	(0.003)	(0.001)
	Block	0.005***		-0.014***	0.361***	0.092***	0.472***	0.193***
		(0.002)		(0.003)	(0.006)	(0.001)	(0.003)	(0.002)
	ROA	0.160***	0.033***		0.018***	0.192***	0.310***	-0.013***
		(0.007)	(0.002)		(0.003)	(0.002)	(0.005)	(0.002)
	E	0.127***	-0.169***	0.141		0.162***	0.508***	0.055***
		(0.004)	(0.007)	(0.002)		(0.003)	(0.007)	(0.003)
.								
Concentrated	Tobin's Q		0.070***	0.614***	0.060***	0.102***	0.112***	0.075***
(Observations=5151)			(0.002)	(0.005)	(0.001)	(0.001)	(0.002)	(0.001)
	Block	0.069***		-0.018***	0.319***	0.050***	0.410***	0.449***
		(0.003)		(0.004)	(0.010)	(0.002)	(0.005)	(0.004)
	ROA	0.307***	0.133***		0.142***	0.112***	0.202***	0.141***
		(0.005)	(0.003)		(0.002)	(0.002)	(0.002)	(0.002)
	E	-0.016***	0.046***	0.065***		0.064***	0.384***	0.228***
		(0.002)	(0.011)	(0.003)		(0.002)	(0.006)	(0.006)

Table 18: ATPs and Firm Value - Q-regressions (Identification through Heteroskedasticity)

This table reports IH estimates of four simultaneous equations (industry-adjusted Tobin's Q, ATPs (GIM index), ROA, and institutional ownership) on each other and various controls. Tobin's Q is the market value of assets over the book value of assets, winsorized at 1%. Industry-adjusted Tobin's Q is Tobin's Q minus the median Tobin's Q in the industry, where industry is defined by four-digit SIC code. ROA is the ratio of net income to total assets, industry adjusted. Size is assets at the beginning of the year, industry-adjusted. Age is number of years since firm was listed. Delaware is binary where 1 signifies that the firm is incorporated in Delaware. Industry concentration is domestic four-firm concentration ratio multiplied by a dummy variable equal to 1 if import penetration ratio is above sample mean. Block is percentage of common stock held by the firms largest institutional blockholder (Cremers and Nair (2004)). Data is annual for 1990-2001, with financial firms excluded. Standard errors are robust to heteroskedasticity and arbitrary serial correlation within industry-year cells. This regression is performed on subsamples with industry concentration above (below) sample mean. Identification is achieved by exploiting differences in the variances of error terms before and after the Nasdaq bubble (pre- and post-1998).

Indusry	Variable	Tobin's Q	Block	ROA	GIM	Size	Age	Delaware
Unconcentrated	Tobin's Q		0.0005***	0.162***	-0.157***	0.188***	0.348***	-0.087***
(Observations=5287)			(0.0001)	(0.005)	(0.003)	(0.001)	(0.003)	(0.001)
	Block	0.002***		0.060***	0.082***	0.153***	0.648***	0.108***
		(0.001)		(0.002)	(0.004)	(0.001)	(0.002)	(0.002)
	ROA	0.292***	-0.061***		-0.102***	0.048***	0.021***	-0.093***
		(0.002)	(0.001)		(0.002)	(0.001)	(0.002)	(0.001)
	GIM	0.191***	0.073***	0.108***		0.097***	0.086***	-0.021***
		(0.003)	(0.004)	(0.003)		(0.002)	(0.004)	(0.002)
.								
Concentrated	Tobin's Q		0.067***	0.655***	0.049***	0.086***	0.090***	0.069***
(Observations=5151)			(0.002)	(0.005)	(0.002)	(0.001)	(0.002)	(0.001)
	Block	0.069***		-0.007***	0.239***	0.031***	0.429***	0.483***
		(0.003)		(0.004)	(0.009)	(0.002)	(0.003)	(0.005)
	ROA	0.333***	0.108***		0.170***	0.089***	0.191***	0.118***
		(0.005)	(0.003)		(0.002)	(0.001)	(0.002)	(0.002)
	GIM	-0.049***	0.146***	0.034***		0.075***	0.137***	0.360***
		(0.003)	(0.009)	(0.003)		(0.002)	(0.005)	(0.006)

Table 19: ATPs and Firm Value - Variance Decomposition (IH)

This table reports variance decomposition of IH estimates of four simultaneous equations (industry-adjusted Tobin's Q, ATPs (E index), ROA, and institutional ownership) on each other and various controls. Tobin's Q is the market value of assets over the book value of assets, winsorized at 1%. Industry-adjusted Tobin's Q is Tobin's Q minus the median Tobin's Q in the industry, where industry is defined by four-digit SIC code. ROA is the ratio of net income to total assets, industry adjusted. Size is assets at the beginning of the year, industry-adjusted. Age is number of years since firm was listed. Delaware is binary where 1 signifies that the firm is incorporated in Delaware. Industry concentration is domestic four-firm concentration ratio multiplied by a dummy variable equal to 1 if import penetration ratio is above sample mean. Block is percentage of common stock held by the firms largest institutional blockholder (Cremers and Nair (2004)). Data is annual for 1990-2001, with financial firms excluded. Standard errors are robust to heteroskedasticity and arbitrary serial correlation within industry-year cells. This regression is performed on subsamples with industry concentration above (below) sample mean. Identification is achieved by exploiting differences in the variances of error terms before and after the Nasdaq bubble (pre- and post-1998).

Indusry	Variable	Tobin's Q	Block	ROA	E	Size	Age	Delaware
Unconcentrated	Tobin's Q	0.779	0.003	0.115	0.033	0.054	0.0001	0.015
(Observations=5287)	Block	0.048	0.591	0.096	0.006	0.207	0.048	0.003
	ROA	0.0005	0.004	0.863	0.019	0.092	0.0005	0.015
	E	0.002	0.081	0.002	0.771	0.110	0.010	0.023
Concentrated	Tobin's Q	0.698	0.001	0.160	0.001	0.138	0.0001	0.001
(Observations=5151)	Block	0.055	0.562	0.121	0.003	0.214	0.043	0.002
	ROA	0.015	0.001	0.812	0.001	0.168	0.002	0.001
	E	0.035	0.020	0.035	0.799	0.087	0.019	0.004

Indusry	Variable	Tobin's Q	Block	ROA	GIM	Size	Age	Delaware
Unconcentrated	Tobin's Q	0.816	0.014	0.015	0.061	0.061	0.001	0.031
(Observations=5287)	Block	0.113	0.529	0.039	0.014	0.217	0.074	0.015
	ROA	0.082	0.005	0.873	0.023	0.0002	0.003	0.014
	GIM	0.016	0.000	0.001	0.939	0.034	0.001	0.010
Concentrated	Tobin's Q	0.691	0.0005	0.189	0.0001	0.118	0.001	0.001
(Observations=5151)	Block	0.061	0.537	0.126	0.017	0.209	0.048	0.001
	ROA	0.025	0.001	0.820	0.0004	0.148	0.004	0.002
	GIM	0.051	0.003	0.057	0.777	0.093	0.004	0.014