

WHAT KINDS OF TAKEOVER DEFENSES ARE MOST BENEFICIAL TO SHAREHOLDERS DURING AND FOLLOWING THE BIDDING PROCESS?

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Abstract

We investigate whether the strength of target antitakeover defenses impacts the market's perception of the wealth generated for both targets and bidders shareholders in acquisitions, as well as the long-run post-acquisition returns to bidders. Our results indicate that while returns to bidder shareholders are a decreasing function of takeover defense strength, target shareholders benefit from moderate takeover defense strategies, at least in the short term. However, target shareholders are adversely affected by the highest levels of takeover defenses, both in the short run and in terms of any position they hold in the acquirer after the transaction is completed, which is reflective of value destruction during the bidding process by entrenched managers. Long run returns to successful bidders are highest when a weak defense target is acquired, and a declining function of target takeover defense strength. The lowest long run returns are experienced by bidders that acquire targets with very-strong takeover defenses. These results are confirmed by multivariate analyses. Overall, our results support the Entrenchment and Myopia theories, and partially support the bargaining power hypothesis.

Keywords: Acquisition; Takeover defense

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1. Introduction

In theory, the market for corporate control acts as a disciplinary mechanism because the threat of a takeover discourages the under- or mis- utilization of resources. If managers fear the loss of reputational capital arising from an acquisition, they may be more likely to maximize shareholder wealth (Martin and McConnell, 1991; Scholten, 2005; Jarrell, Brickley, Netter, 1988). However, managers may implement anti-takeover strategies to resist takeover bids (the entrenchment hypothesis). Several studies explain how takeover defenses may insulate ineffective managers from appropriate discipline, which reduces firm value.¹² Alternatively, shareholders may benefit from antitakeover devices since more resistance to takeovers can extract higher premiums (the bargaining power hypothesis).¹³

Research documents negative wealth effects in response to the implementation of defense mechanisms (DeAngelo and Rice, 1983; Jarrell and Poulsen, 1987; Bebchuk and Cohen, 2005), implying that the market perceives antitakeover devices as tools used by managers for self-serving reasons. Field and Karpoff (2002) argue that takeover likelihood is lower for IPO firms with takeover defenses. Daines and Klausner (2001) report that antitakeover devices are used to protect managers of IPO firms when takeovers are more likely and management performance most transparent. Yet, Comment and Schwert (1995), Cotter, Shivdasani, and Zenner (1997) and Heron and Lie (2006) find results in favor of the bargaining power hypothesis.

The goal of this paper is to examine what kinds of antitakeover strategies are most beneficial to target and bidder shareholders during and following the bidding process. We argue that the extant evidence indicating that takeover defenses give targets the power to thwart acquisition attempts or to negotiate higher premiums is incomplete because all

¹² see Bebchuk and Cohen (2005), Bojanic and Dennis (1994), Cary (1969), Daines and Klausner (2001), DeAngelo and Rice (1983), Field and Karpoff (2002), Jarrell and Poulsen (1987), Mahoney, Sundaramurthy, and Mahoney (1996), Malatesta and Walking (1988), and Ryngeart (1988).

¹³ see Comment and Schwert (1995), Cotter, Shivdasani, and Zenner (1997), Danielson and Karpoff (2006),

DeAngelo and Rice (1983), Lefanowicz and Robinson (2000), Linn and McConnell (1983), Harris and Madura (2010), and Heron and Lie (2006).

antitakeover strategies do not function in the same way.

For instance, a poison pill by itself does not lower the likelihood of takeovers (Bhagat and Jefferis, 1991; Comment and Schwert, 1995; Harris and Madura, 2010; Heron and Lie, 2006). Yet, defenses written into a firm's charter and bylaws serve as strong takeover shields since neither the firm's board nor its shareholders can unilaterally change these measures (Daines and Klausner, 2001). Practitioners and academicians suggest that the best defense shield that firms can implement is the combination of a poison pill with a staggered board policy.¹⁴

Hence, all defense shields are not the same and some antitakeover strategies provide greater deterrents than others. As a consequence, differences in the strength of the takeover defense shields used by targets may affect the valuation from acquisitions. Yet, there is little empirical evidence on how the strength of targets' antitakeover strategies affects the takeover gains to target and bidder shareholders.

Empirically, the wealth effects to targets in response to acquisition announcements are positive (Bradley, Desai, and Kim, 1983; Moeller, 2005) and tend to be higher when targets have takeover defenses (Comment and Schwert, 1995; Cotter et al., 1997; Dann and Deangelo, 1988; Huang, and Walkling, 1987). Conversely, the wealth gains to the bidding firm around takeover announcements tend to be negative (Asquith, 1983; Bradley et al., 1983; Jarrell and Poulsen, 1989; Moeller, 2005; Moeller, Schlingermann, and Stulz, 2005) and are much lower when bidders have more antitakeover provisions (Masulis, Wang, and Xie, 2007).

While past studies have proposed motives for defense mechanisms and have documented some of the valuation effects of these devices, they tend to ignore the relative strength of the defense strategies used by targets. Moreover, as the focus of past research has been on how the presence of target defenses affects target shareholders, very little is known about how target defenses affect bidder shareholders during and following the bidding process. To the extent that stronger target defenses cause overpayment and delay the transfer of control of the target's assets, they can result in weaker short-term and long-term performances for bidders. As a result, the strength of a target's defenses may weaken the synergistic gains from the acquisition.

Our study contributes to the literature by examining whether the strength of the defense shields used by targets impacts the market's perception of the

wealth generated for both targets and bidders around takeover bids, as well as the long-run post acquisition returns to bidders. Given that some antitakeover devices provide greater deterrents than others, we categorize targets into four groups based on the strength of their antitakeover strategies; that is, those with (i) *weak* defenses, (ii) *semi-strong* defenses, (iii) *strong* defenses, and (iv) *very-strong* defenses.

The results indicate that while the returns to bidder shareholders are a decreasing function of the target's takeover defense strength, target shareholders benefit from moderate antitakeover strategies, at least in the short term. However, target shareholders are adversely affected by the strongest level of takeover defenses, both in the short run and in terms of any position they hold in the acquirer after the transaction is completed. This finding is reflective of value destruction during the bidding process by entrenched target managers. Hence, the highest levels of takeover defenses appear to serve the interests of entrenched managers rather than shareholders.

Our evidence suggests that the market recognizes the additional delays and costs that bidders face when they attempt to acquire targets with stronger defenses. Moreover, investors associate strong defenses with better bargaining positions for target shareholders, but associate very-strong defenses with value destruction by sufficiently entrenched target managers. This conclusion is also supported by the post-acquisition performance of bidders. The post-merger success of the bidder does not appear to be adversely affected by weak or strong target defenses, but bidders that acquire targets with very-strong defenses elicit lower long run performance compared to an industry, size, and book-to-market matched control firm.

In general, our findings indicate that while the shareholders of bidders are heavily impacted by the strength of the targets' takeover defenses, the impact on target shareholders is more equivocal. This result is surprising since the stated objective of antitakeover devices is to protect target shareholders, as opposed to harming bidder shareholders. These findings may provide some insights into the signals that managers may try to send to potential bidders when they implement stronger antitakeover devices. Namely, to remind potential bidders that their own shareholders should anticipate lower short- and long- term abnormal returns if the bidder pursues the acquisition as opposed to another viable target with weaker defenses.

Our results support the predictions of the Entrenchment and Myopia theories, in that target managers focus on short term rent extraction when they implement *very-strong* takeover defenses. The diminishing returns to takeover defense strength indicate some support for the bargaining power hypothesis. Target shareholders benefit from moderate takeover defenses, but are adversely affected by the strongest antitakeover strategies.

¹⁴

see http://www.CFO.com/article.cfm/3001307/c_2984297/?f=archives; and Bebchuk, Coates, and Subramanian (2002); and Stout (2002). In addition, the Global News wire reported on December 8, 2004 that Magnum Hunter resources Inc. was considering to remove its poison pill and staggered term board, which made the firm look less attractive to potential bidders.

The rest of the paper proceeds as follows. In Section 2, we develop a theoretical framework on the strength of target defenses. We discuss our hypotheses in section 3. Our data and methodology are addressed in Section 4 and Section 5. We cover our results in Section 6. Section 7 concludes the paper.

2. Theoretical framework on the strength of target defenses

There are several alternative strategies that a firm can implement. Some antitakeover measures may act as stronger deterrents, or have more favorable impacts on shareholder value than others. Since our objective is to determine whether the strength of the defense mechanisms used by targets is related to shareholders' gains from acquisitions, we discuss how defense mechanisms differ according to their strength of resistance.¹⁵

A poison pill is one of the most popular antitakeover devices. "The term refers to a family of contingent securities that result in the assumption of unwanted financial obligations by a bidder, which dilute the bidder's equity holdings, or loss of the bidder's voting rights if the issuing firm becomes a takeover target" (Mallette and Fowler, 1992, pg 1011). The intent is to make an acquisition prohibitively expensive by increasing the number of target shares outstanding. In the U.S., managers do not need shareholders' votes to implement poison pills.

In the event of a takeover bid, managers may not necessarily trigger the poison pill, but use it as a bargaining tool to negotiate higher premiums. If managers intend to resist the bid, the pill may be used as a threat to ward off the bidder. However, a poison pill can be unilaterally rescinded by a firm's board, and thus may not necessarily serve as the strongest defense against takeover threats. Furthermore, studies by Bhagat and Jefferis (1991), Comment and Schwert (1995), Cotter et al. (1997), Harris and Madura (2010), and Heron and Lie (2006) argue that poison pills do not lower the likelihood of takeovers. Therefore, we consider a poison pill to be *semi-strong* defense shield.

An alternative defense mechanism is a staggered (or classified) board, in which only a portion of the firm's board is eligible for re-election each year. Firms with staggered boards are less attractive takeover targets, because bidders have to wait several years to take full control of their boards. Daines and Klausner (2001) argue that a staggered board policy serves as a formidable takeover defense because it is

written into the firm's charter and bylaws, and cannot be unilaterally changed by its board or its shareholders.

Harris and Madura (2010) find that the post-spinoff takeover likelihood of units decreases when they adopt staggered boards. Bebchuk and Cohen (2005), Bebchuk et al. (2002), Sundaramurthy, Rechner, and Wang (1996) and Weill (2006) suggest that staggered boards reduce shareholders' power in both takeover and non-takeover events. Thus, a staggered board is viewed as an entrenching device adopted by ineffective boards (Kesner and Dalton, 1985). As a result, we consider a staggered board policy to be a *strong* defense shield.

In addition, some firms implement antitakeover strategies that combine poison pills with staggered board policies. There is some consensus among practitioners and academicians that this strategy is the best defense shield that firms can implement to prevent takeovers.¹⁶ The poison pill deters an immediate takeover by making the acquisition process prohibitively expensive. To repeal the pill, the bidder has to take control of target's board through a proxy contest. However, the staggered board policy requires the bidder to win consecutive proxy contests to replace the board. The process to replace the board may take several years, during which reforms that would add value would be very difficult to achieve. We consider the combination of poison pills and staggered boards as a *very-strong* target defense mechanism.

Pursuant to the discussion above, we classify targets that only use poison pills as their defense shield as having semi-strong defenses. Targets that only have staggered board policies in place (i.e., but no poison pills) are considered targets with strong defenses. We classify targets with both poison pills and staggered board policies as having very-strong defenses. Targets with no documented poison pill, staggered board, or combination thereof are classified as targets with weak defenses.

3. Hypothesis

The literature on acquisition bids provides us with a theoretical framework for our study, and several studies offer evidence that antitakeover mechanisms emit signals about the future behavior of management. The results of these studies help us develop our hypotheses.

¹⁵ One possible measurement is the Governance Index created by Gompers, Ishii, and Metrick (2003), which is a firm-level aggregate of the number of antitakeover provisions. However, we choose to develop a classification process in order to account for the qualities of each takeover defense mechanism.

¹⁶ see http://www.CFO.com/article.cfm/3001307/c_2984297/?f=archives; Global Finance (1995); Bebchuk et al., 2002; Gordon, 2002; Stout, 2002.

3.1. Target announcement returns and the strength of target takeover defenses

The impact of the strength of target defense shields on shareholder value may be reflected in the abnormal returns to the target. Target managers may implement relatively weak defenses to discourage time-wasting acquisition bids. These defenses are not designed to thwart takeover attempts, but may signal to potential bidders that the target's management will not engage in spurious takeover attempts that would not benefit shareholders. This argument is consistent with the bargaining power hypothesis since weaker defense mechanisms do not remove the threat of outside discipline. However, when defenses are very-strong, managers are able to block the disciplinary mechanism of the market for corporate control, and engage in perquisite consumption (consistent with the entrenchment and myopia theories).¹⁷

Hence, we posit that the returns to target shareholders are a nonlinear function of the strength of the target's takeover defenses. We hypothesize that the wealth effects for target shareholders in response to takeover bids are positively related to the strength of the target's takeover defense shield at semi-strong and strong levels, but that the announcement gains decline at very-strong levels. At very high levels of takeover defense strengths, target management may be sufficiently entrenched making target gains lower.

H1: target wealth effects in response to takeover announcements are positively related to the strength of target defense shields at semi-strong and strong levels, but negatively related to the strength of target defense shields at very-strong levels.

3.2. Bidder announcement returns and the strength of target takeover defenses

Targets can attempt to use takeover defenses to squeeze higher premiums from bidders.¹⁸ To the extent that strong defense shields provide more bargaining leverage for targets, bidders may be forced to overpay. Research indicates that targets receive higher premiums when poison pills are used as defenses (Comment and Schwert, 1995; Cotter et al., 1997; MacMinn and Cook, 1991). However, Bebchuk et al. (2002) find that takeover premiums do not differ between targets with staggered boards and those without staggered boards, implying that a staggered board policy may not affect shareholder returns in acquisitions. Heron and Lie (2006) find that targets that either have poison pills in place, or implement one upon the announcement of a takeover bid (i.e., a

"morning after" pill), experience higher premiums and higher shareholder wealth effects.

Therefore, the acquisition costs to bidders are higher when targets use stronger defense shields. When target defenses are stronger, bidders face higher expenses, longer delays, and possibly must pay higher premiums when targets implement takeover defenses, which may result in weaker valuation effects for bidder shareholders. Hence, we expect the valuation effects for bidders to be inversely related to the strength of the targets' defense shields and the magnitude of the losses are higher at the strongest levels of defense strength.

H2: bidder wealth effects in response to takeover announcements are inversely related to the strength of the target's defense shield and the returns are worst at the strongest levels of defense strength.

3.3. Bidder post-acquisition long-run returns and the strength of target takeover defenses

Studies by Malatesta (1983), Asquith (1983), and Magenheim and Mueller (1988) document negative performance following acquisitions. Yet, Franks, Harris, and Titman (1991) find no evidence of significant abnormal returns. Aggrawal, Jaffe, and Mandlekar (1992) find that tender offers are followed by no abnormal returns, but that mergers are associated with poor performance following acquisitions. Loughran and Vijh (1997) suggest that while mergers are friendly to target managers they are not in the best interests of shareholders because in the long run mergers underperform matched firms whereas tender offers outperform matched firms. In addition, Harford (1999) finds that mergers by cash-rich bidders are followed by a decline in operating performance.

However, prior research does not indicate whether the long-run under-performance exhibited by bidders is related to the strength of the opposition of the target's management. Stronger defenses may cause bidders to not only overpay, but may also delay restructuring that could result in weaker post-acquisition performance. For this reason, we hypothesize that long-run performance following acquisitions is more negative for bidders that must overcome stronger target resistances in the takeover process.

H3: bidder long-term post-acquisition performance is inversely related to the strength of the target's defense shields.

¹⁷ see Stein (1988)

¹⁸ see Comment and Schwert (1995), Cotter et al. (1997), Heron and Lie (2006), and MacMinn and Cook (1991).

4. Data

4.1. Sample

Data on completed 100% acquisitions involving firms traded on the NYSE or NASDAQ/AMEX announced over the period from January 1, 1995 to December 31, 2006 are collected from Securities Data Corporation (SDC) Platinum. The sample period ends in 2006 so that two full years of post-acquisition returns data is available. The sample excludes regulated industries (financial institutions as well as utility firms). In addition, both bidders and targets for each acquisition are required to have returns and accounting data available from the Center for Research in Securities Prices (CRSP) and Standard and Poor's Research Insight, respectively. This screening process yields a sample of 854 transactions.

The targets' takeover defense information, as well as board composition data (for both bidder and target firms), are collected by hand from each firm's proxy statements. Institutional stock ownership data are collected from Thomson Financial Corporation's *ShareWorld* database. We also utilize an extensive data verification procedure. Dates of acquisition announcements, dates of deal completion, and deal characteristics from SDC are verified through *Lexis Nexis* searches and acquisition filings (SC TOT14) obtained from 10kwizard.

Table 1 reports descriptive statistics for the full sample. Panel A indicates that the most prevalent year represented in the sample is 1999, which accounts for about 15% of the sample. This is followed by the year 2000, which represents approximately 13.35% of the sample. The least activity is noted in 1995 and 1996, which account for only 2.34% and 3.63% of the sample, respectively. There also appears to be some clustering of acquisitions in the four-year period from 1998 to 2001; this period represents about 50% of the sample.

Panel B provides information regarding the distribution of the sample by industry. The largest concentration of acquisitions is in the manufacturing and chemicals industry (target SIC 3000), comprising 36.18% of the sample; the smallest is in the mining industry (target SIC 1000). Technology is the second most prevalent industry represented (target SIC 7000), with 24.71% of the sample. Bidders also appear to be concentrated in SIC codes 3000 and 7000 (about 60% of the sample).

4.2. Descriptive Statistics

Table 2 provides the characteristics of the transactions. Panel A provides information regarding the nature of the strength of the takeover defenses targets have in place at the time of the bid. Targets with weak defenses account for 30.68% of the sample, while those with semi-strong defenses comprise 17.45%. Strong and very-strong defenses account for

29.16% and 22.72% of the sample, respectively. Thus, there appears to be a fairly even distribution of firms across takeover defense strengths, for those managers who defend against a takeover using a poison pill, staggered board, or a combination thereof.

Panel B report several deal frequencies. Over half of the sample targets (55.65%) are incorporated in Delaware. Related acquisitions (i.e., those where the bidder and target are in the same 3 digit SIC code) account for 12.22% of the sample. Approximately half of the sample targets are in "high tech" (internet) industries, as identified by Loughran and Ritter (2004). A total of 94 transactions (or 10.94% of the sample) are hostile takeovers. Cash only transactions account for 31.32% of the sample. Bidders who had recently been successful in another acquisition accounted for 334 deals, or 38.88% of the sample. The recent takeover experience of the bidder is assessed over the prior 2-year period.

Panel C report a summary of other deal related variables. The mean transaction value is \$1.546 million. On average, approximately 75.35% of the target's board and 71.28% of board of the bidder are comprised of independent directors.

Table 3 provides descriptive statistics for the accounting information of sample bidders and targets. The mean (median) size for bidders, as proxied by total assets, is \$37,148 million (\$20,225 million). Bidders acquiring firms with weak takeover defenses tend to be the largest firms in the sample, while bidders acquiring those with semi-strong defenses are the smallest. In addition, the mean (median) target size is \$1,857 (\$1,423) million. Target size does not appear to be affected by the strength of the target's takeover defenses.

Firm profitability is proxied by return on assets (ROA) and return on equity (ROE). The profitability of bidders, as measured by ROA (ROE) is 5.62% (4.25%). The most profitable bidders appear to seek targets with strong takeover defenses, whereas the least profitable bidders in the sample acquired targets with very-strong takeover defenses. Mean profitability as measured by ROA and ROE is negative for the overall sample of targets, with poor performers having strong and very-strong takeover defenses.

We use Tobin's Q (based on Chung and Pruitt (1994) approximation) to proxy growth opportunities. Mean (median) Tobin's Q is 2.52 (2.10) for bidders, and 1.78 (1.15) for targets. Bidders with the highest growth opportunities appear to seek targets with strong takeover defenses. Targets with the highest growth opportunities appear to have implemented semi-strong takeover defenses.

Financial leverage is defined as total debt to total assets. The mean leverage of bidders is 15.49%, versus 21.51% for targets. Bidders with the highest debt ratios tend to target firms with strong defenses. Targets with the most debt relative to assets tend to have weak defenses, which suggest that debt is used

to help limit agency costs (Jensen, 1986; Jiraporn and Gleason, 2007).

5. Methodology

5.1. Announcement period valuation effects

We use standard event study methodology in our analysis of bidder and target returns around takeover announcements. The market model, estimated over the 250 days prior to the acquisition, is used to estimate cumulative abnormal returns (CAR) in response to the announcement. The CRSP value-weighted index is used to represent the market. We report CAR over several event windows.

5.1.1. Multivariate Analysis of Valuation Effects

Cross-sectional regressions are used to analyze the relation between the CAR to both bidders and targets and the strength of the targets' defense shield. We estimate the following model:

$$CAR_i = \alpha + \beta_1 SS_i + \beta_2 S_i + \beta_3 VS_i + \beta_4 POWER_i + \beta_5 RELSIZE_i + \beta_6 LNVALUE_i + \beta_7 BLEV_i + \beta_8 TLEV_i + \beta_9 BBRD_i + \beta_{10} TBRD_i + \beta_{11} BBLOCK_i + \beta_{12} TBLOCK_i + \beta_{13} Q_i + \beta_{14} TECH_i + \beta_{15} RELATED_i + \beta_{16} TROA_i + \beta_{17} CASH_i + \beta_{18} HOST_i + \beta_{19} TSTATE_i + \beta_{20} RTE_i + \epsilon_i \quad (1)$$

SS_i denotes *semi-strong* target takeover defense strength. The variable takes the value 1 if targets only use poison pills as their defense shield, and 0 otherwise.

S_i denotes *strong* target takeover defense strength; it takes the value 1 if targets only use staggered board policies as their defense shield and 0 otherwise.

VS_i denotes *very-strong* takeover defense strength and takes the value 1 if targets use a combination of a poison pill and a staggered board policy as their defense shield; zero otherwise.

Bidders face higher expenses, longer delays, and possibly must pay higher premiums when targets implement takeover defenses. This suggests that bidder CAR should not only be negatively related to the SS_i , S_i , and VS_i variables, but that the magnitude of the losses should be worst at the highest level of defenses.

However, targets are able to extract greater rents in acquisitions if they have poison pills in place (Heron and Lie, 2006). Hence, we anticipate finding a positive coefficient on the SS_i and S_i variables when assessing target CAR. At very high levels of takeover defense strengths, target managers may be sufficiently entrenched making the acquisition prohibitively costly. Therefore, we anticipate finding a negative coefficient on the VS_i variable when assessing target CAR.

We control for several deal and firm related variables. The following control variables, which can

be categorized into size, monitoring, information asymmetry, and deal characteristics are also included in the model.

$POWER$ denotes the market power of the bidder. We use market share to proxy market power, measured as bidder sales divided by total sales for the 3 digit SIC code in which the bidder is a member (the herfindahl index). We expect to find that more powerful bidders will be able to successfully overcome managerial resistance to a takeover bid and restructure the target firm.

(a) Deal size.

$RELSIZE$ denotes relative size. The relative size of the bidder and the target is the ratio of the market capitalization of the target relative to the bidder. Jarrell and Poulsen (1989) find more favorable valuation effects when targets are relatively large. Therefore, we expect that large bidders of relatively large targets will execute the deal more efficiently, and obtain higher CAR. However, larger targets may be more difficult for the bidder to digest following the acquisition. This could negatively affect bidder CAR.

$LNVALUE$ denotes natural log of transaction value. We use $LNVALUE$ as an alternative proxy for relative size in a separate regression.

(b) Monitoring.

$BLEV$ and $TLEV$ denote bidder and target debt-to-asset ratio, respectively. According to Jensen (1988), managers of acquiring firms with higher leverage have less discretion to make non-value maximizing investments and may therefore carefully choose investments. Hence, bidder firms with higher leverage are expected to experience higher CAR. Jandik and Makhija (2005) argue that the acquisition process is more complex when the target has higher leverage; this complexity leads to greater target gains. Accordingly, bidder returns are likely to be lower when the target firm's leverage is higher, especially when the bidder assumes the liabilities of the target. Hence, abnormal returns to bidders are expected to be positively related to $BLEV$, but negatively related to $TLEV$. In contrast, abnormal returns to targets are expected to be negatively related to $BLEV$, but positively related to $TLEV$.

$BBRD$ and $TBRD$ denote the percent of outside directors on the boards of bidders and targets, respectively. These measures are used to proxy board independence. To the extent that independent directors' goals are better aligned with shareholder's interests, the target's board may be more willing to negotiate with the bidder.¹⁹ Consequently, the market may perceive that the acquisition process is made easier for the bidder when there is majority board independence. Therefore, bidders that target firms

¹⁹ see Brickley, Coles, and Terry (1994)

with more independent boards are expected to experience more favorable valuation effects. Hence, *TBRD* is expected to be positively related to the bidder's valuation effects. Higher relative board independence of targets should also facilitate better negotiating power for targets. Hence, we anticipate finding a positive relationship between *TBRD* and target returns.

BBLOCK and *TBLOCK* denote the percent of shares owned by blockholders of bidders and targets, respectively. Bidder and target block ownership are used as a proxy for the levels of external monitoring. Firms with a high percentage of block ownership may be subject to more monitoring and are less likely to pursue transactions that are driven by managerial self-serving motives. Therefore, higher levels of bidder and target block ownership may increase the potential synergies from an acquisition, which should translate into more favorable valuation effects for both bidders and targets.

(c) Information asymmetry.

Q is the ratio of bidder to target Tobin's *Q*. Tobin's *Q* measures the relationship between the market value and replacement costs of a firm's assets, and is typically used to proxy for growth opportunities or information asymmetry.²⁰ If a bidder bids on a target with a high Tobin's *Q*, investors may react negatively to the announcement since they may believe that the bidder may have to overpay for the high growth option of the target or high information asymmetry. Thus, the higher the target's Tobin's *Q*, the lower bidder's returns. If the bidder has a high Tobin's *Q*, this may signal that the bidder may be overvalued (Dong, Hirshleifer, Richardson, and Teoh, 2006; Servaes, 1991). Hence, the higher the bidder's Tobin's *Q*, the lower the returns to the bidder. In addition, high information asymmetry targets may be able to exploit information asymmetry regarding the value of their assets (Dong et al., 2006), and hence, may obtain higher returns upon a bid.

TECH denotes targets in high tech industry (as identified by Loughran and Ritter, 2004). Targets in high technology industries tend to be characterized by greater information asymmetry, and may be able to benefit from overvaluation in the acquisition process (Dong et al., 2006). Thus, we anticipate finding higher returns to targets in high tech industries, and lower returns to bidders of high technology targets. *TECH* and *Q* are used as information asymmetry proxies in two separate models.

RELATED represents business relatedness (as proxy by 3-digit SIC codes). When targets are in a separate line of business from the bidder, it may be difficult to value their operations, resulting in higher

information asymmetry and lower returns to bidders. On the other hand, related takeovers typically generate greater synergies for both the bidder and target (Flanagan and O'Shaughnessy, 2003). Hence, we anticipate a positive coefficient when target and bidders are related.

(d) Other controls.

TROA denotes the target's return on assets. If managers have failed to implement policies that result in profitability, they may enact antitakeover devices that prevent the firm from being taken over due to their own human capital considerations. Evidence of this would be that the market responds positively to announcements of takeover bids of poorly performing firms.

CASH is the percentage of the bid paid in cash. According to Myers and Majluf (1984) bidding firms offer cash when management perceive their stocks as being undervalued. Similar to Jensen and Ruback (1983) and Loughran and Vjih (1997), we expect higher bidder's valuation effects when more cash is used. We anticipate finding that higher cash transactions also result in higher abnormal returns to targets (Davidson and Cheng, 1997; Travlos, 1987).

HOST is a dummy variable equal to one if the deal attitude is hostile, zero otherwise. According to Jarrell and Poulsen (1989), when the bidder faces opposition from the target's management team, the bidder is faced with delays, and higher costs (including higher premiums). Thus, we expect less favorable valuation effects for bidders when there is opposition. However, we anticipate finding that hostile acquisition bids remove entrenched target managers, leading to higher abnormal returns to targets (Schwert, 2000).

TSTATE is a dichotomous variable equal to 1 if the target is incorporated in Delaware, zero otherwise. Song and Walkling (1993) document that bidders earn lower valuation effects when the targets are incorporated in Delaware, which they attribute to competitive bidding. Conversely, targets should obtain higher wealth effects due to Delaware state law.

RTE is a dichotomous variable equal to 1 if the bidder firm has completed an acquisition within the past 2 years, zero otherwise. Bidding firms that just recently acquired another target may signal empire building. Therefore, valuation effects of bidders are expected to be less favorable if it had done an acquisition within a short time period prior to the current acquisition. On the other hand, more experienced bidders may have refined negotiating skills, which would result in higher bidder abnormal returns and lower target abnormal returns.

5.2. Long horizon abnormal returns

The buy-and-hold methodology is used to test the long-term abnormal returns of bidders using a

²⁰ Chung and Pruitt (1994) report an approximation for the Lindenberg and Ross (1981) computation of Tobin's *Q*. This measure is approximated as: Approximate $q = (\text{Market Value of Equity} + \text{PS} + \text{DEBT})/\text{TA}$

matching procedure as follows.²¹ Each bidder is matched to a control firm based on 2-digit SIC code, size (proxied by assets), and book-to-market ratio. Loughran and Vijh (1997) base their buy-and-hold abnormal returns (*BHAR*) only on the first acquisition if a firm made more than one, and we do the same. Of the 854 acquisitions, 38 deals represent a subsequent acquisition and therefore are removed from the sample in order to avoid confounding effects.

BHAR are computed over the 3-year period following the acquisition as the compounded buy-and-hold returns of the bidder minus the compounded buy-and-hold returns of the matching firm. The length of the holding period excludes the month the acquisition is completed. If the bidder stops trading in the 3-year period following the acquisition, we compute *BHAR* over the period where stock price data is available. The statistical significance of the mean *BHAR* is assessed using the bootstrapped skewness-adjusted t-statistic (Lyon et al., 1999).

Cross-sectional regressions are used to analyze the relation between the post-acquisition returns to bidder and the strength of the target's takeover defenses. The model is estimated as:

$$BHAR_i = \alpha + \beta_1 SS_i + \beta_2 S_i + \beta_3 VS_i + \beta_4 POWER_i + \beta_5 RELSIZE_i + \beta_6 LNVALVE_i + \beta_7 BLEV_i + \beta_8 BBRD_i + \beta_9 BBLOCK_i + \beta_{10} Q_i + \beta_{11} RELATED_i + \beta_{12} CASH_i + \beta_{13} HOST_i + \beta_{14} RTE_i + \epsilon_i \quad (2)$$

We anticipate finding that higher takeover defenses result in higher costs of integration for bidder post-acquisition. Hence, long-run bidder returns are expected to be negatively affected by increasingly stronger takeover defenses. The variables are as previously defined.

We expect acquirers with greater market power to be better able to effectively restructure targets. We also expect larger deals to be more difficult to integrate; hence, larger deals should adversely affect post-acquisition bidder returns. Stronger corporate governance provides for better long term integration of the target's assets. Thus, we anticipate finding higher long term performance when bidders are better monitored. It follows that the coefficients on *BLEV* (which proxies for creditor monitoring), *BBRD* (which proxies for board monitoring), and *BBLOCK* (which proxies for external monitoring) are all expected to be positive.

We anticipate finding that bidders with higher growth opportunities will be able to extract value from acquisitions that will result in better long term performance. If the target is in the same line of business as the bidder, it will be easier for the bidder to integrate. Hence, we anticipate finding a positive relationship between relatedness and long term bidder performance. Bidders who believe that their shares were undervalued at the time of the acquisition may have a greater incentive to use the acquisition to obtain a better market valuation. Hence, we anticipate that cash transactions will result in better long term performance.

Hostile transactions may be more difficult to integrate given that continuing employees or management of the target may oppose the acquisition. Bidders with recent takeover experience may have greater expertise in integrating targets and may exhibit better long term performance. However, recent acquisitions in the past two years could also represent an overextension of managerial resources or empire building that could negatively affect performance. Hence, the sign of *RTE* is unclear.

6. RESULTS

6.1. Impact of the strength of defense mechanisms on valuation effects

Table 4 summarizes the abnormal returns to the targets, as well as the subsamples that are segmented according to the strength of the target takeover defense. The results are consistent with prior literature for the overall sample. Mean abnormal returns for the full sample of targets are 23.93%, 16.71%, and 18.54% for the [-1,1], [0,0], and [-1,0] event windows, respectively. The *t*-statistics indicate that these estimates are significant at the 1% level. The generalized *z* score is also highly significant, implying that most of the individual target returns are positive.

The table also shows that the mean abnormal 3-day return to targets with *weak* defenses is 22.70%, while targets with *semi-strong* defenses elicit returns of about 23.74%. The mean abnormal 3-day returns to targets with *strong* and *very-strong* forms of defenses are 25.10% and 21.94%, respectively. Hence, the highest abnormal 3-day returns are earned by targets with *strong* defenses, and the lowest by targets with *very-strong* defenses. These reported returns are all significant at the 1% level.

In addition, while abnormal target returns do not differ between *weak* and *semi-strong* defenses for any window, they differ significantly between *weak* and *strong* defenses for the [0,0] and [-1,0] event windows. The mean difference in target returns for the [-1,0] event window is statistically significant at the 5% level (*t*-statistics = 2.05), while the mean event-day return differs at the 10% level (*t*-statistics = 1.76).

We also find significant differences between targets with *strong* and *very-strong* defenses at the 5% level for the [-1,1] event window (*t*-statistics = 2.04). The only other significant differences occur between targets with *semi-strong* and *strong* defenses for the [-1,0] window and between targets with *semi-strong* and *very-strong* defenses for the [-1,1] window; these are significant at the 10% level.

Overall, these results suggest that the market associates very-strong takeover resistance with negotiations that involve adverse behavior by target managers during the takeover process. Target managers may be able to extract private benefits at

²¹ Pursuant to Lyon, Barber, and Tsai (1999)

the expense of shareholders if they are sufficiently entrenched. However, when strong takeover defenses are in place, the results suggest that the market anticipates that target managers may be in a better negotiating position, and that the offer ultimately will benefit shareholders relative to when takeover defenses are weaker. These results are consistent with Hypothesis 1, and partially support both the entrenchment and the bargaining power hypotheses.

Table 5 summarizes the abnormal announcement returns to bidders. The mean abnormal returns for the full sample of bidders are -1.95%, -1.69%, and -1.59% for the [-1,1], [0,0], and [-1,0] event windows, respectively. The *t*-statistics are all significant at the 1% level, indicating that acquisition announcements elicit losses for bidder shareholders. These findings are consistent with prior studies.

The tables also report CAR for the subsamples segmented according to the strength of the target takeover defense shield. We find that bidder abnormal returns are significantly negative when targets have *semi-strong*, *strong*, or *very-strong* takeover defenses. Furthermore, as expected, the magnitude of the loss to bidder shareholders is worst as the target's defense shield strengthens. For instance, the mean abnormal 3-day returns to bidders is -0.99% when targets have *semi-strong* defenses, -1.80% when targets have *strong* defenses, and -4.13% when targets have *very-strong* defenses. Abnormal returns are not significantly different from zero for firms that bid on targets with weak defenses.

Further, difference in mean *t*-statistics indicate that the average 3-day CAR to bidders associated with the strongest takeover shield is significantly lower than those for *weak*, *strong*, and *semi-strong* defenses. The mean differences are statistically significant at the 5% level or better. These findings are even stronger when we focus only on the event-day returns. Thus, returns to bidder shareholders are a decreasing function of targets' takeover defense strength.

In general, the results in table 5 imply that when targets have takeover defenses of any kind in place, the market views the bidder's bid announcement unfavorably. However, stronger target defenses impacts the market's perception of the value destroyed by bidder managers. This may possibly be due to higher costs associated with the effort required to successfully acquire the target and the ability of acquirers to ultimately restructure the target successfully. Taken together, these results are consistent with Hypothesis 2.

6.1.1. Regression analyses

We next investigate the relationship between the returns to targets and bidders to the strength of the targets' takeover defenses in a cross-sectional framework. The 3-day CAR is used as the dependent

variable.²² Table 6 reports the results of the analysis. Panel A shows the results for target returns and Panel B shows the results for bidder returns.

Consistent with the univariate tests, the results in Panel A show that target CAR are related to the strength of their defenses in a nonlinear manner. The coefficients for *semi-strong* defenses are positive and marginally significant (at the 10% level) in two of the three models. However, in all three models, the coefficients are positive and significant at the 5% level when targets have *strong* defenses. The coefficients for *very-strong* defenses are positive, but marginally significant (at the 10% level) in only one model.

In addition, the magnitude of the coefficient is highest when targets have *strong* defenses, which is also consistent with the univariate tests. This result is supports the conjecture that *strong* defenses enhance bargaining power, while *very-strong* defenses reflect managerial entrenchment that destroys shareholder wealth. These results are consistent with Hypothesis 1, and with Heron and Lie (2006), who find that poison pills and staggered boards are complimentary in terms of gains to target shareholders, and are beneficial in terms of target announcement effects.

Bidder power is negatively related to target returns, although the coefficient is not significantly different from zero. Relative size is negatively related to target CAR, but the log of the deal value is positive and significant. In addition, target leverage is positively and significantly related to target returns, though bidder leverage is not. Both bidder and target board independence are positively related to target returns. The coefficients of the external monitoring proxies are also positive and significant. Taken together, these results suggest that better monitoring is perceived as limiting the scope of managerial discretionary behavior of the target during the acquisition process.

Information asymmetry, as proxied (in separate regressions) by the ratio of bidder to target Tobin's Q and target tech status, are insignificant determinants of target returns. However, related transactions generate a more favorable market response than unrelated transactions, which is consistent with our prior research. Target profitability is negative and significantly related to target returns, indicating that the likely replacement of managers is in the interests of shareholders. Cash is significantly and positively related to target returns. Previously successful bidders also elicit higher wealth gains for target shareholders than bidders with no recent takeover experience.²³

²² White's Heteroscedasticity-consistent estimation method is used to obtain consistent measurements of the standard error estimates [see White (1980)]. The variance inflation factor (VIF) is used to detect whether multicollinearity is an issue in each regression model.

²³ The adjusted- R^2 and *F*-statistic indicate that the models have significant explanatory power.

We next examine how bidder announcement valuation effects are related to the strength of the target's takeover resistance; the results are shown in Panel B. Abnormal bidder returns are inversely (and significantly) related to the strength of the targets' defense mechanisms. The coefficient for *semi-strong* defense mechanisms is 0.005, and insignificant at conventional levels. However, the coefficients for *strong* and *very-strong* takeover defenses are -0.014 and -0.035 and significant at the 5% and 1% levels, respectively.

This implies that shareholders react more negatively when bidders announce transactions with targets with strong or very-strong takeover defenses even after controlling for other factors, consistent with Hypothesis 2. However, the presence of a poison pill does not seem to negatively impact bidder returns, as indicated by an insignificant coefficient for the semi-strong variable. This finding is consistent with the idea that managers can always enact poison pills without the permission of shareholders, a strategy which bidders are cognizant of, and price accordingly.

Market power appears to positively benefit bidders. When the bidder controls a greater percentage of market share, bidders are in a better position to negotiate to their benefit with targets. However, the size proxies, relative size and the natural log of deal value, are insignificant at conventional levels.

Better monitoring of the bidder does not result in higher abnormal returns to bidders. However, more bidder block ownership (external monitoring) is positively related to bidder returns. This indicates that the market perceives outside monitoring as beneficial in managerial decision making, reducing overpayment. However, high target block ownership is significantly associated with lower CAR for bidder shareholders. This could be attributable to stronger target negotiating power, and an enhanced ability to extract rents from the bidder.

The ratio of bidder to target Tobin's Q, a proxy for growth opportunities, is negatively related to bidder returns, and weakly significant in two of the model specifications. Relatedness is a positive and significant determinant of bidder returns, but the technology industry variable is not. Target profitability is negatively related to bidder returns, indicating that targets that are less profitable likely have managers that should be replaced.

Consistent with prior literature, cash transactions result in significantly higher abnormal returns to bidders. Hostile takeovers are negatively related to bidder returns, as is Delaware incorporation. Bidders with a recent successful acquisition have higher returns than less experienced bidders.²⁴

The results of the analysis of short term target- and bidder- returns indicates that while bidders are heavily impacted by the strength of targets takeover defenses, the impact on targets is more equivocal. This result is somewhat surprising, as the stated deterrent objective of managers implementing antitakeover devices is to protect target shareholders, as opposed to harming bidder shareholders (Subramanian, 2003). Our results may provide some insights into the signals that managers may try to send to potential bidders when they implement stronger antitakeover devices. That is to say, to remind potential bidders that their own shareholders should anticipate lower abnormal returns if the bidder pursues the acquisition as opposed to another viable target with weaker defenses. These findings support for the entrenchment and myopia theories. We next investigate whether a similar relationship holds with regards to long-run bidder returns.

6.2. Impact of target defense mechanism on long horizon performance of bidders

The estimated buy-and-hold abnormal returns (*BHAR*) of sample firms following the completion of the acquisition are disclosed in Table 7. For the overall sample, bidders outperform their size- and book-to-market industry counterparts over the 24 months following the takeover. The mean *BHAR* is 7.84% over the 6-month period, and is significant at the 1% level. Mean *BHAR* are 5.22% and 2.36% over the 1-year and 2-year periods, though only the 1-year *BHAR* is significant at conventional levels. Hence, in and of itself, the post-acquisition integration process does not appear to adversely affect the performance of successful acquirers.²⁵

However, the insidious impact of differential takeover strength on post-acquisition performance is readily apparent when the sample is explored in more detail. Table 7 also reports *BHARs* for sub-samples categorized by target defense strength.

Interestingly, acquirers significantly underperform their controls for all horizons when the targets have *very-strong* takeover defenses. Over the 3-year period, *BHAR* are negative (-4.72%) and significant at the 1% level for firms that acquired targets with very-strong defenses. In contrast, acquirers of targets with *weak* defenses experience *BHAR* that are positive and significant; 18.90% over the first 6 months, 6.25% over the 1-year window, and 5.83% over the 2-year window. Otherwise, *BHARs* are not significant for any other sub-sample or time period when targets have *semi-strong* or *strong* takeover defenses, with the exception of a positive 6-month and negative 3-year *BHAR* for *semi-strong* defense targets. Taken together, these

²⁴ The adjusted R^2 for the three models range between 6.87% and 7.80%; the F -statistic indicates that all three models have significant explanatory power.

²⁵ This is consistent with Healy, Palepu, and Ruback (1992), who show that operating performance improves following acquisitions.

results support Hypothesis 3, which states that long-term bidder performance is inversely related to the strength of targets' defense shields.

In addition, our results are somewhat consistent with those of Heron and Lie (2006), who find that long run abnormal returns to a sample of firms with poison pills that receive bids (but that are not acquired) are higher than firms without poison pills. Our finding implies that poison pills are not detrimental to bidder shareholders' wealth over the two years following the acquisition. However, when bidders must overcome additional takeover defenses, long run returns are negatively impacted post-acquisition.

Table 8 provides regression results based on 1-year post-acquisition bidder BHAR.²⁶ We present three models for the sake of robustness. In all three models, the only takeover defense strength level that significantly impacts bidder performance after the takeover is the *very-strong* category and the coefficient is consistently negative and significant at the 5% level. Hence, Hypothesis 3 is partially supported by the analyses, with the caveat that the relationship holds only at the highest defense levels. Apparently, it requires a combination of a staggered board and poison pill to generate enough expenses to destroy long term bidder wealth.

External monitoring by blockholders positively and significantly impacts post-acquisition acquirer returns. Cash payments are also positively and significantly related to long term wealth. None of the other control variables are significant.

7. Conclusions

In this paper, we examine the impact of target takeover defenses on the announcement returns and long run returns to participants in acquisitions. We find that while bidders' wealth effects are inversely related to the strength of the targets' defense shields, targets' wealth gains are highest at *strong* defense levels. However, target shareholders are adversely affected by *very-strong* takeover defenses, both in the short run and in terms of any position they hold in the acquirer after the transaction is completed. This finding is reflective of value destruction during the bidding process by entrenched target managers. In other words, the highest levels of takeover defenses appear to serve the interests of entrenched managers rather than shareholders. Wealth effects are also higher for bidders that have greater market power, use cash in the acquisition, and for those that have strong monitoring, as proxied by bidder and target blockholding.

Overall, our findings indicate that the market recognizes the additional delays and costs that bidders face when they attempt to take over targets with stronger defenses, and that these increased costs

can be deflected through monitoring. This conclusion is supported by the post-acquisition long horizon performance of bidders. While *weak* and *strong* target defenses do not appear to adversely affect the post-merger success of the bidder, acquirers of targets with *very-strong* defenses elicit negative abnormal long run returns.

Taken together, our results support the predictions of the entrenchment and myopia theories, in that target managers focus on short term rent extraction when they implement *very-strong* takeover defenses. The diminishing returns to takeover defense strength indicate some support for the bargaining power hypothesis. That is, target shareholders benefit from moderate takeover defenses (which supports the bargaining power hypothesis), but are adversely affected by the strongest antitakeover strategies (which supports the entrenchment hypothesis).

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²⁶ The results using 2-year BHAR are qualitatively similar.

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Table 1. Transaction Descriptive Characteristics

Panel A. Distribution by Year			Panel B. Distribution by Standard Industrial Classification (SIC) Code				
Year	Number of deals	Fraction of sample	SIC code	Number of target	Fraction of sample	Number of bidder	Fraction of sample
1995	20	2.34%	1000	37	4.33%	43	5.04%
1996	31	3.63%	2000	128	14.99%	157	18.38%
1997	66	7.73%	3000	309	36.18%	319	37.35%
1998	101	11.83%	4000	57	6.67%	49	5.74%
1999	128	14.99%	5000	65	7.61%	49	5.74%
2000	114	13.35%	7000	211	24.71%	199	23.30%
2001	95	11.12%	8000	47	5.50%	38	4.49%
2002	61	7.14%	Total	854	100%	854	100%
2003	76	8.90%					
2004	65	7.61%					
2005	61	7.14%					
2006	36	4.22%					
Total	854	100%					

The sample consists of 854 completed acquisitions from January 1, 1995 to December 31, 2006 involving bidders and targets that traded on the NYSE or NASDAQ/AMEX where 100% of the target shares are acquired. The sample period ends in 2006 so that two full years of post-acquisition returns data is available. The sample is obtained from SDC Platinum. We exclude regulated firms (financial institutions as well as utility firms). In addition, both bidders and targets for each acquisition must have returns and accounting data available from CRSP and Standard and Poor's Research Insight, respectively. We utilize an extensive data verification procedure. Dates of acquisition announcements, dates of deal completion, and deal characteristics from *SDC* are verified through *Lexis Nexis* searches and acquisition filings (SC TOT14) obtained from 10kwizard.

Table 2. Deal Characteristics

Panel A: Takeover defense strength	Number of deal	Fraction of sample
Weak takeover defenses	262	30.68%
Semi-strong takeover defenses	149	17.45%
Strong takeover defenses	249	29.16%
Very-strong takeover defenses	194	22.72%
Panel B: Deal frequencies		
Targets incorporated in Delaware	478	55.65%
Related transactions (3-digit SIC)	105	12.22%
High-tech targets	427	49.71%
Hostile transactions	94	10.94%
Cash only transactions	369	31.32%
Bidders successful in a prior acquisition	334	38.88%
Panel C: Deal related variables		
	Mean	
Deal value (\$ millions)	1,546	
Percent of independent bidder board	71.28%	
Percent of independent target board	75.35%	

This table presents deal summary statistics for the sample. The targets' takeover defense information is collected by hand from each firm's proxy statements. We classify targets that only use poison pills as their defense shield as having *semi-strong defenses*. Targets that only have staggered board policies in place (i.e., but no poison pills) are considered targets with *strong defenses*. We classify targets with both poison pills and staggered board policies as having *very-strong defenses*, the strongest antitakeover strategy. Targets with no documented poison pill, staggered board, or combination thereof are classified as targets with *weak defenses*. Data on where the target is incorporated, the bidder and target SIC codes, deal attitude (i.e., hostility), the proportion of cash used, the bidder's takeover activities over the 2-year period prior to each acquisition, and deal value (including assumed liabilities) are taken from SDC Platinum. We follow Loughran and Ritter (2004) in defining "high tech" (internet) industries.

Table 3. Descriptive statistics for full sample and subgroups

Variables	Subgroups base on takeover defense strength				
	Full Sample	Weak defenses	Semi-strong defenses	Strong defenses	Very-strong defenses
Bidder Assets	37.148 (20,225)	39,247 (18,516)	31.019 (17,266)	17,515 (9,331)	24,313 (14,641)
Target Assets	1,857 (1,423)	1,361 (1,314)	2,241 (1,151)	1,515 (1,331)	2,313 (1,641)
Bidder ROA	5.62 (3.78)	8.99 (5.26)	10.14 (9.58)	4.62 (1.52)	-1.60 (2.16)
Target ROA	-3.22 (1.53)	-1.10 (1.78)	-5.14 (1.31)	0.62 (0.34)	-2.42 (1.90)
Bidder ROE	4.25 (1.51)	3.27 (2.43)	6.91 (1.14)	5.29 (1.90)	2.01 (1.03)
Target ROE	-2.16 (3.14)	-4.21 (1.75)	-0.25 (1.08)	-3.53 (7.32)	-2.08 (1.99)
Bidder Tobin's Q	2.52 (2.10)	1.19 (1.06)	3.77 (3.24)	1.54 (2.53)	3.00 (0.74)
Target Tobin's Q	1.78 (1.15)	2.01 (1.46)	1.43 (2.51)	4.00 (2.08)	0.44 (0.61)
Bidder Leverage	15.49 (10.05)	19.25 (8.92)	10.36 (9.42)	20.83 (15.25)	6.22 (8.20)
Target leverage	21.51 (16.35)	26.31 (18.23)	18.46 (12.76)	25.78 (20.44)	17.35 (14.28)

This table provides descriptive statistics for the accounting information of sample bidders and targets.). The accounting data is obtained from Standard and Poor's Research Insight. Profitability is measured by return on assets (ROA) and return on equity (ROE). Growth opportunity is proxied by Tobin's Q, based on Chung and Pruitt's (1994) approximation. Financial leverage is defined as total debt to total assets.

Table 4. Target wealth effects in response to acquisition announcements by takeover defense strength levels

Panel A: Bidder returns	Mean cumulative abnormal target returns			Positive: Negative
	[-1,1]	[0,0]	[-1,0]	
All observations <i>N</i> =854	23.93 (24.78)***	16.71 (18.79)***	18.54 (20.50)***	688/166 (6.37)***
Weak defenses <i>N</i> =262	22.70 (13.87)***	15.01 (10.40)***	17.20 (11.72)***	202/60 (3.26)***
Semi-strong defenses <i>N</i> =149	23.74 (12.29)***	16.04 (8.77)***	17.54 (9.48)***	116/33 (6.89)***
Strong defenses <i>N</i> =249	25.10 (15.28)***	17.22 (12.85)***	20.62 (10.58)***	204/45 (4.60)***
Very-strong defenses <i>N</i> =194	21.94 (11.31)***	17.28 (9.43)***	18.32 (9.67)***	166/28 (5.28)***
Panel B: Difference of means test statistics				
Weak vs. Semi-strong defenses test statistics	-1.28	-0.88	-0.99	
Weak vs. Strong defenses test statistics	-1.48	-1.76*	-2.05**	
Weak vs. Very-strong defenses test statistics	1.07	-1.38	-1.30	
Semi-strong vs. Strong defenses test statistics	-1.52	-1.60	-1.87*	
Semi-strong vs. Very-strong defenses test statistics	1.90*	-1.58	-1.44	
Strong vs. Very-strong defenses test	2.04**	-0.41	1.63	

Panel A presents cumulative abnormal returns (CAR) for bidders calculated using the CRSP equally weighted index based on the market model. Below the CAR are the *t*-statistics. The last column shows the ratio of positive to negative CAR with the generalized *z* scores. Panel B reports difference of means test statistics for various subgroups. The symbols ***, **, * reflect significance at the 1, 5, and 10% levels, respectively.

Table 5. Bidder wealth effects in response to acquisition announcements by takeover defense strength levels

Panel A: Bidder returns	Mean cumulative abnormal bidder returns			Positive: Negative
	[-1,1]	[0,0]	[-1,0]	
All observations <i>N</i> =854	-1.95 (-6.14)***	-1.69 (-7.93)***	-1.59 (-6.18)***	380:474 (2.52)*
Weak defenses <i>N</i> =262	-1.01 (-1.58)	-0.75 (-1.47)	-0.61 (-1.36)	127:135 (1.57)
Semi-strong defenses <i>N</i> =149	-0.99 (-1.30)	-1.62 (-3.65)***	-1.08 (-1.68)*	73:76 (1.30)
Strong defenses <i>N</i> =249	-1.80 (-3.43)***	-1.76 (-4.53)***	-1.82 (-4.25)***	102:147 (3.26)**
Very-strong defenses <i>N</i> =194	-4.13 (-5.61)***	-2.91 (-5.54)***	-3.01 (-5.02)***	78:116 (4.55)***

Panel B: Difference of means test statistics

Weak vs. Semi-strong defenses test statistics	-0.51	1.74*	1.42
Weak vs. Strong defenses test statistics	1.63	2.08**	1.80*
Weak vs. Very-strong defenses test statistics	2.79***	2.97***	3.06***
Semi-strong vs. Strong defenses test statistics	1.44	1.26	1.57
Semi-strong vs. Very-strong defenses test statistics	2.50**	2.49**	2.80***
Strong vs. Very-strong defenses test	2.26**	2.53**	2.67***

Panel A presents cumulative abnormal returns (CAR) for bidders calculated using the CRSP equally weighted index based on the market model. Below the CAR are the *t*-statistics. The last column shows the ratio of positive to negative CAR with the generalized z scores. Panel B reports difference of means test statistics for various subgroups. The symbols ***, **, * reflect significance at the 1, 5, and 10% levels, respectively.

Table 6. Cross sectional regression analysis of takeover announcement returns and target takeover defense strength

	Panel A: Abnormal 3-day target returns			Panel B: Abnormal 3-day bidder returns		
	(1)	(2)	(3)	(1)	(2)	(3)
<i>INTERCEPT</i>	0.056 (2.54)**	0.075 (2.38)**	0.082 (2.50)**	-0.052 (-2.02)**	-0.024 (-2.17)**	-0.068 (-2.22)**
<i>SS</i>	0.004 (1.62)	0.005 (1.73)*	0.005 (1.81)*	0.005 (0.28)	0.003 (1.51)	0.004 (1.22)
<i>S</i>	0.014 (2.05)**	0.012 (2.17)**	0.026 (2.16)**	-0.014 (-2.55)**	-0.012 (-2.37)**	-0.026 (-2.41)**
<i>VS</i>	0.005 (1.85)*	0.002 (1.57)	0.002 (1.37)	-0.035 (-3.25)***	-0.022 (-2.98)***	-0.031 (-2.86)***
<i>POWER</i>	-0.002 (-1.44)	-0.002 (-1.26)	-0.001 (-1.41)	0.002 (2.44)**	0.001 (2.16)**	0.002 (2.23)**
<i>RELSIZE</i>	0.001 (1.64)	0.001 (1.68)*		0.001 (1.24)	0.001 (0.66)	
<i>LNVALUE</i>			-0.001 (1.40)			-0.002 (-1.58)
<i>BLEV</i>	0.001 (1.56)	0.001 (1.36)	0.001 (1.44)	0.002 (1.46)	0.002 (1.20)	0.002 (1.24)
<i>TLEV</i>	0.013 (2.40)**	0.022 (2.35)**	0.019 (2.13)**	0.001 (0.25)	0.002 (0.65)	0.02 (0.77)
<i>BBRD</i>		0.011 (1.88)*			0.005 (1.56)	
<i>TBRD</i>		0.017 (2.06)**			-0.006 (-1.64)	
<i>BBLOCK</i>			0.002 (1.78)*			0.004 (1.99)**
<i>TBLOCK</i>			0.002 (1.86)*			-0.001 (-1.70)*
<i>Q</i>	0.001 (1.35)	0.001 (1.46)	0.001 (1.12)	-0.001 (-1.55)	-0.001 (-1.70)*	-0.001 (-1.68)*
<i>TECH</i>			-0.002 (-0.65)			0.001 (0.52)
<i>RELATED</i>		0.012 (2.14)**	0.018 (2.06)**		0.005 (1.85)*	0.002 (1.80)*

<i>ROA</i>		-0.012 (-2.13)**	-0.016 (-2.33)**		-0.0014 (-2.10)**	-0.001 (-2.00)**
<i>CASH</i>	0.009 (2.01)**	0.010 (2.24)**	0.009 (2.27)**	0.024 (2.54)**	0.018 (2.46)**	0.030 (2.27)**
<i>HOST</i>	-0.002 (-1.00)	-0.001 (-1.32)	-0.001 (-0.84)	-0.009 (-1.45)	-0.005 (-1.66)*	-0.002 (-1.64)
<i>TSTATE</i>	0.001 (1.22)	0.001 (1.55)	0.001 (1.52)	-0.001 (-0.54)	-0.002 (-0.91)	-0.002 (-0.78)
<i>RTE</i>	0.011 (2.52)**	0.008 (2.41)**	0.007 (2.16)**	0.002 (1.78)*	0.006 (1.90)*	0.008 (1.84)*
<i>F-statistics</i>	3.99***	4.35***	4.23***	5.25***	6.20***	6.19***
<i>Adjusted R²</i>	5.17%	5.38%	5.63%	6.87%	7.02%	7.80%
<i>N</i>	822	816	812	822	816	812

Three-day CAR is measured over the event window [-1,1]. The variable *SS_i* denotes *semi-strong* target takeover defense strength. The variable takes the value 1 if targets only use poison pills as their defense shield, and 0 otherwise. The variable *S_i* denotes *strong* target takeover defense strength; it takes the value 1 if targets only use staggered board policies as their defense shield and 0 otherwise. The variable *VS_i* denotes *very-strong* takeover defense strength and takes the value 1 if targets use a combination of a poison pill and a staggered board policy as their defense shield; zero otherwise. *POWER* is the ratio of bidder sales to total industry sales. *RESIZE* is the ratio of the deal value to bidder assets. *LNVALUE* is the log of the deal value in dollars. *BLEV* is the bidder debt-to-asset ratio. *TLEV* is the target debt-to-asset ratio. *BBRD* is the percent of the bidder board that is independent. *TBRD* is the percent of the target board that is independent. *BBLOCK* is the percent of bidder shares held by blockholders. *TBLOCK* is the percent of target shares held by blockholders. *Q* is the ratio of bidder to target Tobin's Q. *TECH* equals 1 if the target is in a high tech industry, zero otherwise. *RELATED* equals 1 if the target is in the same 3 digit SIC code as the bidder, zero otherwise. *ROA* is the target return on assets. *CASH* is the percentage of cash comprising the offer. *HOST* takes the value 1 if the bid is hostile, zero otherwise. *TSTATE* equals 1 if the target is incorporated in Delaware, zero otherwise. *RTE* equals 1 if the bidder successfully acquired a target in the past two years, zero otherwise. ***, **, * reflect significance at the 1, 5, and 10% levels, respectively.

Table 7. Post-acquisition buy and hold abnormal returns

	Buy and hold abnormal returns			
	6 Months <i>N</i> = 816	12 Months <i>N</i> = 816	24 Months <i>N</i> = 780	36 Months <i>N</i> = 772
Panel A: Bidder returns				
All observations	7.84 (2.69)***	5.22 (2.04)**	2.36 (1.54)	-0.02 (-0.22)
Weak defenses	18.90 (2.87)***	6.25 (2.45)**	5.83 (2.20)**	2.14 (1.10)
Semi-strong defenses	5.11 (1.77)*	7.00 (1.60)	2.08 (1.08)	-2.61 (-1.67)*
Strong defenses	1.28 (0.52)	0.25 (0.41)	1.15 (1.05)	4.51 (1.41)
Very-strong defenses	-2.63 (-3.62)***	-1.51 (-1.24)	-3.67 (-2.78)***	-4.72 (-3.06)***
Panel B: Difference of means test statistics				
Weak vs. Semi-strong defenses test statistics	2.55**	-1.54	-2.00**	1.76*
Weak vs. Strong defenses test statistics	3.15***	2.56**	2.42**	-1.30
Weak vs. Very-strong defenses test statistics	4.26***	2.69***	3.01***	4.24***

Semi-strong vs. Strong defenses test statistics	1.51	3.26***	1.40	-2.53**
Semi-strong vs. Very-strong defenses test statistics	2.11**	4.16***	3.28***	1.54
Strong vs. Very-strong defenses test	1.14	1.48	3.85***	4.11***

Panel A presents the buy-and-hold abnormal returns to successful bidders using a matching procedure. Each bidder is matched to a control firm based on the bidder's 2-digit SIC code, size (proxied by assets), and book-to-market ratio. Loughran and Vijh (1997) base their buy-and-hold abnormal returns (*BHAR*) only on the first acquisition if a firm made more than one, and we do the same. Of the 854 acquisitions, 38 deals represent a subsequent acquisition and therefore are removed from the sample in order to avoid confounding effects. Panel B reports difference of means test statistics for various subgroups. The symbols ***, **, * reflect significance at the 1, 5, and 10% levels, respectively.

Table 8. Determinants post-acquisition buy and hold abnormal returns

	(1)	(2)	(3)
<i>INTERCEPT</i>	0.047 (2.58)**	0.056 (2.63)**	0.069 (2.90)***
<i>SS</i>	-0.019 (-1.47)	-0.009 (-1.30)	-0.011 (-1.18)
<i>S</i>	-0.008 (-1.25)	-0.007 (-1.32)	-0.009 (-1.54)
<i>VS</i>	-0.058 (-2.40)**	-0.039 (-2.26)**	-0.022 (-2.06)**
<i>RELSIZE</i>	-0.009 (-1.40)	-0.007 (-1.72)*	
<i>LNVALUE</i>			-0.021 (-2.24)**
<i>BLEV</i>	0.022 (1.18)	0.045 (1.54)	0.030 (1.29)
<i>BBRD</i>		0.002 (1.64)	
<i>BBLOCK</i>			0.012 (4.20)***
<i>Q</i>	0.004 (1.05)	0.001 (0.94)	
<i>RELATED</i>	0.001 (1.23)	0.002 (1.57)	0.002 (1.46)
<i>CASH</i>	0.032 (2.28)**	0.044 (2.40)**	0.051 (2.17)**
<i>HOST</i>	-0.011 (-0.97)	-0.009 (-1.42)	-0.007 (-1.26)
<i>RTE</i>	0.003 (1.77)*	0.001 (1.26)	0.001 (1.69)*
<i>F</i> -statistic	3.86**	4.12***	4.77***
Adjusted <i>R</i> ²	2.78%	3.06%	3.65%
<i>N</i>	782	770	769

The dependent variable is the 1-year post-acquisition bidder BHAR (buy and hold abnormal returns) based on an industry, size and book-to-market matched firm. The variable SS_i denotes *semi-strong* target takeover defense strength. The variable takes the value 1 if targets only use poison pills as their defense shield, and 0 otherwise. The variable S_i denotes *strong* target takeover defense strength; it takes the value 1 if targets only use staggered board policies as their defense shield and 0 otherwise. The variable VS_i denotes *very-strong* takeover defense strength and takes the value 1 if targets use a combination of a poison pill and a staggered board policy as their defense shield; zero otherwise. *RELSIZE* is the ratio of the deal value to bidder assets. *LNVALUE* is the log of the deal value in dollars. *BLEV* is the bidder debt-to-asset ratio. *BBRD* is the percent of the bidder board that is independent. *BBLOCK* is the percent of bidder shares held by blockholders. *Q* is the ratio of bidder to target Tobin's Q. *RELATED* equals 1 if the target is in the same 3 digit SIC code as the bidder, zero otherwise. *ROA* is the target return on assets. *CASH* is the percentage of cash comprising the offer. *HOST* takes the value 1 if the bid is hostile, zero otherwise. *RTE* equals 1 if the bidder successfully acquired a target in the past two years, zero otherwise. ***, **, * reflect significance at the 1, 5, and 10% levels, respectively.
