The Effects of Anti-takeover Provisions on Acquisition Targets

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July 2010

Abstract

This study provides large sample evidence on the effects of anti-takeover provisions (ATPs) on the firms' takeover probability and premium in modern takeover contests. Despite the fact that hostile bids are uncommon during 1990s-2000s, some ATPs have strong but opposing effects on takeover outcomes. Consistent with recent theory, staggered board-poison pill combination is the strongest anti-takeover mechanism, takeover compensation arrangements reduce managerial resistance to takeovers, and many commonly used ATPs are irrelevant in modern takeover battles. The G-Index, which does not account for diverse effects of ATPs, does not reveal their significance in predicting takeover outcomes.

The impact of anti-takeover provisions (ATPs) on takeover deterrence and managerial entrenchment has been a subject of much study and debate for more than two decades. Comment and Schwert (1995) document that in the 1980s anti-takeover measures have not systematically deterred takeovers but instead increased the takeover premium to selling shareholders. Ryngaert and Scholten (2010) argue that, relative to the 1980s, managers that defeated hostile takeovers did not become more entrenched in the 1990s when greater takeover impediments became available. In contrast to this evidence, many studies assume that ATPs and other rules that restrict shareholder rights are associated with takeover protection and managerial entrenchment. This study conducts a comprehensive analysis of the effects of a wide range of ATPs on takeover targets and examines whether firm-level variation in provision use affects takeover outcomes.

Many firm level ATPs and state anti-takeover laws were adopted in the 1980s in response to hostile takeovers, and most existing empirical evidence on takeover defenses relies on the data from the 1980s. However, hostility in takeovers subsided in the early 1990s and the legal developments at the end of the 1980s have changed the significance of many ATPs, making some provisions more and others less effective. As the result, Coates (2000) concludes that evidence from prior studies is "unlikely to provide useful information on the effects of takeover defenses in today's environment." Thus, it remains an open question which of a wide range of ATPs significantly affect outcomes of modern takeover contests.

One response to the issue raised above is to use the index that combines all of the provisions as a proxy for takeover protection. For example, Masulis, Wang, and Xie (2007), Cremers and Nair (2005), Ferreira and Laux (2007), and many others, use the index of governance provisions (G-Index) as a measure of the firm's takeover vulnerability.[1] However, Coates (2000) and Bebchuk and Cohen (2005) criticize earlier studies that "lump together"

powerful and weak takeover defenses. Moreover, Core, Guay, and Rusticus (2006) provide evidence that they interpret as "surprising if one views the G-Index as an antitakeover index".[2] They investigate Gompers, Ishii, and Metrick's (2003) finding that firms with high G-Index values exhibit significant stock market underperformance and suggest that one possible explanation consistent with a causal relation between the G-Index and stock returns is that investors were surprised by a lower realized probability of receiving a takeover premium.[3] Inconsistent with this explanation, Core et al. (2006) find that the annual takeover frequency is similar across high and low G-Index firms.

This study investigates which ATPs, if any, significantly affect takeover outcomes. As a starting point, I reexamine the hypothesis tested by Core, Guay, and Rusticus (2006) that the G-Index is not associated with the firm's takeover probability.[4] While the G-Index is designed to measure the balance of power between managers and shareholders, many of the G-Index components are commonly known ATPs (see Gompers, Ishii, and Metrick, 2003). As the result, firms with strong managerial power have more takeover defenses in place and may be more difficult to acquire than firms with strong shareholder power. Using the hazard model analysis and controlling for other firm characteristics, I find that the G-Index is not significant in predicting the firm's risk of being acquired. This result is consistent with univariate analysis in Core et al. (2006) and suggests that the G-Index does not proxy for the takeover likelihood.

One shortcoming of the analysis described above is that, theoretically, ATPs should be important only in takeovers that target management deems hostile.[5] In friendly takeovers, or takeovers favored by both parties, even well-protected firms get acquired. Extending Core et al's (2006) study, I examine whether the G-Index plays a role in takeovers that are more likely to be disciplinary rather than synergistic. Noting that disciplinary and hostile takeovers are difficult to

document empirically (see Schwert, 2000), I provide evidence along several different dimensions. I document that targets with high G-Index values are more likely to react with hostility to takeover bids than targets with low G-Index values. However, I do not find any evidence that governance provisions protect poorly performing managers from the market for corporate control. Results show that poorly performing firms with high G-Index values are as likely to be acquired as poorly performing firms with low G-Index values. This evidence is in line with prior findings that pre-takeover firm performance and hostility are not statistically related (e.g., Morck, Shleifer, and Vishny, 1988, 1989; Schwert, 2000; Kini, Kracaw, and Mian, 2004). In contrast, Morck, Shleifer, and Vishny (1988, 1989) find that industry-wide performance affects the likelihood of hostile takeover and conclude that firms in low market-to-book industries are more likely to become targets of disciplinary takeovers. Controlling for the interaction between the industry average market/book and the G-Index, I find that firms in low market/book industries are more likely to be acquired. More importantly, the interaction term between the G-Index and industry market/book is positive and statistically significant. This indicates that governance provisions reduce the sensitivity of takeover probability to industry performance and provides some evidence that managers can protect their incumbency by deploying a higher number of governance provisions.

Empirically, however, the majority of takeover transactions are characterized as friendly. Schwert (2000) suggests that the growing use of ATPs has decreased publicly reported hostility but argues that most bids have elements of both hostile and friendly transactions. Some disciplinary takeovers appear friendly if managers perceive the success of the bid as imminent and choose not to resist. On the other hand, some acquisitions appear hostile even though managers only attempt to increase the takeover premium. Furthermore, Boone and Mulherin

(2007, 2008) document that many takeover transactions are negotiated privately making early stages of negotiations publicly unobservable and conclude that the takeover market remains competitive. Thus, from the practical perspective, it is difficult to distinguish hostile from friendly takeovers and, in many cases, the bidder does not know *ex ante* with certainty the target management's reaction to the proposed takeover. Since ATPs impose additional costs on bidders, it is possible that firm-level variation in the deployment of ATPs affects the firm's takeover activity, but the G-Index does not reveal the significance of ATPs. The second part of the paper examines whether some G-Index components are significant determinants of the firms' takeover probability.

Based on prior evidence from economics, law, and finance, I classify G-Index components into the following categories: seven *takeover deterrents*, six *weak takeover deterrents*, two *compensation arrangements*, and nine *other provisions*. In contrast to the insignificant effect of the aggregate G-Index, some individual provisions exhibit strong but competing effects on the firm's takeover probability. Consistent with recent studies (e.g., Coates, 2000; Daines and Klausner, 2001; Bebchuk, Coates, and Subramanian, 2002; Bates, Becher, and Lemmon, 2008) staggered board has a negative effect on the firm's risk of being acquired. Importantly, the combination of staggered board and pre-existing poison pill shows even stronger protection than the staggered board alone. This suggests that the pre-bid poison pill, combined with the staggered board, sends a strong signal that the firm is ready to resist the takeover, which is consistent with Bebchuk and Cohen's (2005) argument. Also, there is some evidence that limits to amend bylaws and a combination of limits to call special meetings and to act by written consent reduce takeover probability of firms in under-performing industries. In contrast to takeover deterrence, golden parachutes and compensation plans have a positive effect

on takeover likelihood consistent with prior arguments that compensation arrangements exercised in the event of a takeover reduce managerial resistance to takeovers (see Lambert and Larcker, 1985; Machlin, Choe, and Miles, 1993). Additionally, consistent with recent theory (see Coates, 2000; Daines and Klausner, 2001; Bebchuk and Cohen, 2005), some common ATPs (i.e., *weak deterrents*) are not significant in modern takeover battles. Similarly, nine other G-Index components do not affect the firm's takeover probability.

The final part of the paper examines an alternative explanation to the deployment of governance provisions – the shareholder interest hypothesis. Prior studies suggest that ATPs may increase shareholder wealth by enhancing the bargaining position of target firm (e.g., Grossman and Hart, 1980; Linn and McConnell, 1983; DeAngelo and Rice, 1983; Harris, 1990). I do not find that the G-Index explains the variation in takeover premiums to target shareholders. However, compensation plans and, in some specifications, poison pills have a positive effect on takeover premiums. This evidence, combined with the finding that compensation plans and golden parachutes have a positive effect on the firm's takeover probability, reinforces the point that provisions have different effects on target shareholders. For example, while staggered boards deter takeovers but do not increase the takeover premium, compensation plans reduce managerial resistance to takeovers and provide incentives for managers to bargain harder resulting in higher premiums to selling shareholders.

The main contribution of this study is that it provides large sample evidence on the effects of anti-takeover provisions and provisions' interactions on the firms' takeover probability and takeover premium in modern takeover contests. Despite the fact that hostile bids are uncommon during the sample time period, some takeover defenses play an important role in takeover outcomes but have diverse effects on target firms. The G-Index, which does not account

for diverse effects of ATPs and includes weak takeover defenses and other provisions that do not affect takeover outcomes, does not reveal the significance of ATPs in predicting the firm's takeover vulnerability or premium. The indicator of the poison pill-staggered board combination is a better measure of the firm's takeover protection than the aggregate G-Index. In contrast to takeover deterrence, golden parachutes and compensation plans reduce managerial resistance to takeovers.

The remainder of the paper is organized as follows. The next Section describes the data. Section II presents empirical tests on the effects of the G-Index on takeover likelihood, while Section III examines the effects of individual ATPs. The effects of the G-Index and its individual components on the size of the takeover premium are analyzed in Section IV. Section V concludes the paper.

I. Data sources and sample description

I examine the association between ATPs and takeover probability using data from the Investor Responsibility Research Center (IRRC) and the Securities Data Corporation (SDC). The primary sample consists of firms covered by the IRRC Governance database during 1990-2004. IRRC provides data on the G-Index and individual governance provisions for S&P 1,500 and other public firms selected based on market capitalization and high institutional ownership.[6] Using the SDC Mergers and Acquisitions database and data-screening criteria similar to those in Comment and Schwert (1995), I investigate whether or not a given IRRC firm was a target of corporate takeover. Firms are identified as takeover targets if they were subject to mergers, tender offers, or acquisitions of at least 50% of the common stock. Only initial merger deals (i.e., the ones with no other takeover attempts in a prior year) are considered in this study. In addition,

all observations are required to have annual financial data on COMPUSTAT and stock price data on the Center for Research in Securities Prices (CRSP) for three consecutive years prior to the event year.[7] The event year is defined as the merger announcement year. The final sample consists of 14,634 firm-year observations (2,231 individual firms), of which 574 (558 individual firms) were targets of corporate takeovers during January 1, 1990 and December 31, 2004.

Table I presents sample summary statistics. Panel A provides the distribution of G-Index values by IRRC publication year and shows that the G-Index value does not change much throughout the sample period. The mean G-Index is 9.2 for the overall sample (unreported) and the median equals nine in every publication year. However, there is a cross-sectional variation in the deployment of governance provisions. The G-Index values for individual firms range from 2 to 19, and the standard deviation ranges from 2.5 to 2.9 across publication years. The distribution of the G-Index in this study is similar to the G-Index distribution reported in other studies.[8]

Panel B presents the annual distribution of takeovers in the sample and mean and median deal values. The trend in takeover frequency is similar to that documented by Masulis et al. (2007). The early 1990s are characterized by a low level of takeover activity. In the mid-1990s takeover attempts become more frequent, reaching the highest level (100 deals) in 1999. The number of takeovers then decreases again, dropping to 11 deals in 2002, and increasing yet again, reaching 42 deals in 2004. Since this analysis is limited to the IRRC sample, it is not surprising that these are very large deals. The mean (median) deal value is 3.23 (1.19) billion dollars.

[Insert Table I here]

II. G-Index and takeover likelihood

This section analyzes the relation between the index of governance provisions and takeover likelihood, starting with univariate tests and proceeding to multivariate analysis. In particular, I first examine the differences in G-Index values between target and non-target firms and between firms in various takeover categories. Secondly, I analyze takeover frequencies and merger deal characteristics of high and low G-Index firms. I then estimate the relation between the G-Index and takeover probability using a multivariate hazard model and conditioning on the firm's performance and the takeover's motive.

A. *Differences in G-Index values*

If provisions that restrict shareholder rights and increase managerial power prevent takeovers or obstruct the takeover process, we should see a difference in the deployment of provisions between target and non-target firms and across different deal categories. We would expect that, on average, non-target firms would have higher G-Index values than target firms. Also, if governance provisions help firms to fight off and resist takeover attempts, targets of withdrawn and hostile transactions should have higher G-Index values.

Table II reports summary statistics on the use of governance provisions by target and non-target firms and by firms in various merger categories. In Panel A, firms are classified as targets or non-targets and grouped by IRRC publication year. As shown in Panel A, targets of corporate takeovers typically have a smaller number of provisions than non-targets (with the exception of 1998 and 1999), but the difference is not statistically significant in any year. In unreported analysis, I also calculate the median G-Index values and do not find significant differences between target and non-target firms.

Panel B of Table II examines the differences in G-Index values between completed and withdrawn deals and between friendly and hostile takeovers. Over eighty percent of all deals are completed (467 out of 574). Less than ten percent of all takeover attempts are characterized as hostile (57 out of 574). Out of all completed takeovers (467 transactions), only 18 are hostile takeovers. The average G-Index of completed takeovers is not significantly different from that of withdrawn takeovers. In contrast, targets of hostile deals deploy a larger number of provisions (mean=9.95) than targets of friendly deals (mean=9.05). The median G-Index is also higher for hostile deals: ten versus nine (not shown in the Table). These differences are statistically significant at the five percent level. This evidence is consistent with Bebchuk, Coates, and Subramanian (2002), Daines and Klausner (2004), and Bebchuk and Cohen (2005) who maintain that ATPs are important elements of hostile battles. On the other hand, while hostile takeovers are characterized by a high failure rate (68%), the difference in mean G-Index values between completed and withdrawn hostile takeovers is not statistically significant. This suggests that once a firm becomes a target of hostile takeover, the number of governance provisions deployed by a given firm does not play a significant role in affecting the completion of the deal.

[Insert Table II here]

B. Takeover frequencies and deal characteristics of high and low G-Index firms

If the G-Index proxies for takeover deterrence, the difference in takeover frequency should be most apparent between the "extreme" groups of firms, i.e., firms with the highest and the lowest G-Index values. We may expect that, compared to firms with low G-Index values, firms with high G-Index values are less likely to become takeover targets. Furthermore, if the G-Index proxies for managerial resistance to takeovers, bids to firms with high G-Index values are

more likely to involve multiple bidders, hostility, tender offers, and are less likely to be completed compared to takeovers of firms with low G-Index values.

Table III presents takeover frequencies and merger deal characteristics of high and low G-Index firms. *High* group firms are those with G-Index values in the highest quintile (G-Index values greater than 11), while the *Low* category includes firms with G-Index values in the lowest quintile (G-Index values below seven).[9] As shown in Panel A, there is no consistent pattern in takeover frequency between high and low G-Index firms across the sample time period. While in four out of seven sub-periods low G-Index firms have a higher takeover frequency, in the remaining three sub-periods, high G-Index firms have a higher takeover frequency. Furthermore, the differences in takeover frequencies between high and low G-Index firms are statistically significant (but contradictory) in only two sub-periods -- while low G-Index firms are more likely to be acquired from 1990 to 1992, a higher percentage of high G-Index firms is acquired between 1998 and 1999. These findings are consistent with those of Core, Guay, and Rusticus (2006), who conclude that there is little difference in the probability of a takeover between high and low G-Index firms. They interpret this evidence as "surprising if one views the G-Index as an antitakeover index" but mention that high G-Index and low G-Index firms may differ in the circumstances of the takeover. However, Core et al. (2006) only distinguish among deals based on different payment methods (cash versus stock) and do not examine the differences in deal characteristics, the motives for a takeover, or any other features that are likely to indicate managerial resistance to takeovers.

Panel B of Table III examines the differences in deal types between high and low G-Index firms. Consistent with the G-Index being a proxy for managerial resistance to takeovers, a larger proportion of takeover bids to high G-Index firms is characterized as hostile (significant at

10

five percent). This suggests that managers of high G-Index firms are more likely to oppose takeover bids. However, the frequencies of completed takeovers, multiple bidders, and tender offers are similar between firms with high and low G-Index values, suggesting that governance provisions do not affect these deal characteristics or bid completion rates.

[Insert Table III here]

The univariate analysis in this section does not provide strong evidence that the G-Index effectively measures firms' takeover likelihood: high G-Index firms are as likely to become targets of corporate takeovers as are low G-Index firms, and takeovers of high G-Index firms are as likely to be completed, involve multiple bidders and tender offers as are takeovers of low G-Index firms. However, there is some evidence of managerial resistance to takeovers of high G-Index firms. The analysis shows a higher frequency of hostile takeovers in targets with high G-Index values. The next section presents multivariate analysis of the relation between the G-Index and takeover probability.

C. *G-Index and takeover probability: multivariate analysis*

Previous researchers, including Palepu (1986) and Comment and Schwert (1995), use a set of accounting and stock performance measures to explain the variation in takeover probability. In addition, Ambrose and Megginson (1992), Song and Walkling (1993), Shivdasani (1993), and Field and Karpoff (2002) examine the effects of various governance characteristics on acquisition likelihood. Also, Daines (2001) documents that firms incorporated in Delaware are more likely to be acquired. Following these studies, I use a set of control variables to account for variation, across time and firms, in business conditions that affect the likelihood of takeovers. All control variables are measured a year prior to the merger announcement year. Accounting

and firm performance measures are from CRSP and COMPUSTAT. All regressions include year and industry fixed effects. Industry definitions are based on 48 Fama-French industry classifications. The list of variables and their definitions are provided in the Appendix.

Table IV provides summary statistics on these variables. As shown in Panel A, an average firm in the sample has over $3.5 billion in assets, with debt to equity ratio of 41%, book to market ratio of 2.5, and annual sales growth rate of 15%. On average, firms in the sample outperformed the CRSP value-weighted index by 2.14% over three-year period prior to the event year. Panel B presents Pearson correlations for the G-Index, takeover indicator, and control variables. Consistent with Gompers et al. (2003), the G-Index is positively correlated with firm size and is negatively correlated with sales growth, liquidity, and stock performance. The G-Index is not significantly correlated with the variable that indicates whether or not the firm is acquired ("Takeover").

[Insert Table IV here]

Although logit models are frequently used to estimate the probability of a takeover, Shumway (2001) argues that single period logit models produce biased and inconsistent estimates when dealing with multiple-period data and suggests that survival models are particularly useful to estimate the takeover probability.[10] I use the Cox (1972) proportional hazard model to examine the likelihood that a given firm is the target of a merger or acquisition during 1990-2004.[11] The regression model employs a maximum partial likelihood estimation method and has the following form:

$$h_i(t) = h_o(t) * \exp(X_i'\text{ß}), \tag{1}$$

where $h_i(t)$ is the time-t hazard of firm i (t=1990-2004); $h_o(t)$ is the baseline hazard function that is left unspecified and corresponds to the probability of an event when all explanatory variables

are zero; X_i is a vector of independent variables, corresponding to firm i; and ß is a vector of

coefficients to be estimated. The hazard rate is defined as the probability that firm i will be

acquired at time t, conditioning on it remaining independent up to time t. Regression coefficients

give the proportional change that can be expected in the log of hazard rate, given the changes in

explanatory variables. The hazard ratio, which equals $100*(e^{\beta}-1)$, is used to assess the economic

significance of a given variable.

Table V presents the results of multivariate analysis. Model 1 examines the relation

between the G-Index and takeover hazard rate, controlling for firm characteristics, year and

industry fixed effects. The G-Index coefficient is not significant indicating that the G-Index is

not related to the firm's probability of being acquired. The results for the control variables are

generally in line with those documented by Mikkelson and Partch (1989), Comment and Schwert

(1995), Ambrose and Megginson (1992), and Song and Walkling (1993). In unreported analysis,

the coefficient on the G-Index remains insignificant when I control for other governance

characteristics of the firm or include the interaction terms between the G-Index and each of the

other governance variables (i.e., board size, proportion of independent board members,

CEO/Chairman duality, managerial ownership, and blockholder ownership).[12] Results do not

change if instead of continuous measures of the G-Index, I use indicator variables for G-Index

values above sample mean, median, in the highest quartile, or in the highest decile of the sample.

[Insert Table V here]

In unreported analysis, I also examine the possibility discussed by Comment and Schwert

(1995) who argue that if managers load up on provisions shortly before a takeover, takeover

defenses could have insignificant effects or could actually appear to cause takeovers. While this

is definitely a possibility with the types of defenses that can be adopted quickly without

shareholder approval (e.g., poison pill, golden parachute), other types of defenses (e.g., staggered board, state anti-takeover laws) are adopted by firms when they go public or by state legislature instead of in response to imminent takeover threats (see, Field and Karpoff, 2002; Bates et al., 2008). Nevertheless, I address the possibility that the insignificant effect on the G-Index is due to firms' loading up on provisions in anticipation of upcoming takeover by examining the changes in the G-Index values between the publication years and by examining the effects of the lagged values of the G-Index on the takeover hazard rate. I find that there is no consistent pattern in G-Index changes between target and non-target firms. Furthermore, while there are some changes in the deployment of individual provisions, the aggregate G-Index value does not vary much for individual firms between the publication years. These results confirm that the effects documented in Model 1, Table V are not driven by firms' loading up on provisions shortly prior to a forthcoming takeover.

D. G-Index and Disciplinary Takeovers

Several studies suggest that takeovers occur in part to replace managers who are not maximizing shareholder wealth (see Jensen, 1988; Scharfstein, 1988; Weisbach, 1993). Thus, poorly performing managers are more vulnerable to corporate takeovers, and they may also be more likely to establish takeover barriers (such as takeover defenses) to protect their incumbency. If anti-takeover provisions help to protect poorly performing managers from the discipline of the takeover market, then we should see that poorly performing firms with a high number of provisions are less likely to be acquired than poorly performing firms with a low number of provisions. To test this hypothesis, Model 2 in Table V adds an interaction term between the G-Index and firm performance variable. The coefficients on the G-Index and the interaction term are statistically insignificant, indicating that poorly performing firms with high

G-Index values are as likely to be acquired as poorly performing firms with low G-Index values. This result provides no evidence that ATPs protect poorly performing managers from corporate takeovers.[13]

Morck, Shleifer, and Vishny (1988, 1989) document that industry performance is a better predictor of hostile takeovers than firm-level performance measures. Model 3 in Table V adds an industry average market-to-book ratio to the variables examined in Model 1. The coefficient on industry market/book is insignificant. This evidence, combined with the result in Morck, Shleifer, and Vishny (1989) that the probability of a friendly acquisition is not related to the industry market/book, suggests that the majority of deals in the sample are friendly bids.

However, if governance provisions protect managers from the discipline of the takeover market and disciplinary takeovers are more likely to be targeted at firms in low market/book industries, then high G-Index firms should face a lower risk of being acquired than low G-Index firms for any given level of decline in industry performance. To test this hypothesis, Model 4 adds an interaction term between the G-Index and industry average market-to-book ratio. In this specification, the industry average market-to-book ratio becomes negative and significant at the five percent level suggesting that firms in low market-to-book industries are more likely to be acquired. The coefficient on the G-Index remains insignificant but the coefficient on *Industry Market/Book*G-Index* is positive and significant at the five percent level. The positive coefficient on the interaction term indicates that the deployment of governance provisions reduces the sensitivity of takeover to industry performance. This result can be interpreted as evidence that managers can protect their incumbency by deploying a higher number of governance provisions when they face a higher risk of disciplinary takeover.

III. Individual provisions and takeover likelihood

The G-Index incorporates a comprehensive set of governance provisions. If the G-Index is used as an anti-takeover proxy, an implicit assumption is that all of the 24 components negatively impact the acquisition likelihood. However, provisions serve different purposes, offer various degrees of takeover protection, and some provisions increase the takeover probability (see, for example, Coates, 2000; Daines and Klausner, 2001; Machlin, Choe, and Miles, 1993). Thus, ATPs may have a significant impact on takeover likelihood, but the aggregate G-Index may not reveal it due to at least two, not mutually exclusive, reasons: 1) the G-Index assigns an equal weight to each of the 24 provisions, regardless of its relative deterrent power, and 2) the G-Index does not differentiate between positive and negative effects of individual provisions on takeover likelihood.

An important issue here is that firms do not randomly adopt ATPs but instead incorporate the provisions in response to changing environment. One likely determinant of the provision's adoption is the perceived likelihood of takeover. Moreover, some firms may adopt ATPs anticipating forthcoming takeover with the purpose of improving the bargaining position but with no intention of blocking the deal. Other firms may adopt defenses to impose the takeover barrier and to prevent the bid. However, if the provision is an effective takeover deterrent, it should prevent the takeover (or takeover completion) even if the provision was adopted in response to forthcoming takeover threat. If the provision is mainly used to improve the bargaining position and not to prevent the deal, it should be positively related to the acquisition likelihood and the size of takeover premium. Yet, for other provisions, the distinction between anticipation and deterrence could be subtle with insignificant effects on takeover probability and

premiums overall. This study attempts to distinguish among these effects empirically by examining the effects of various provisions on takeover outcomes.

I begin the analysis by reviewing prior economic and law literature on the effects of takeover defenses on the firm's takeover probability. Based on this evidence, I identify nine provisions that are likely to have significant effects on the outcomes of takeover bids (seven – negative and two –positive). In addition, I identify six commonly known takeover defenses that recent theory suggests are no longer important. I do not find any studies that would predict that the remaining nine provisions play important role in takeover outcomes. I then run a set of regressions to test these predictions. This methodology is similar to Bebchuk, Cohen, and Ferrell (2009) who identify six of the G-Index components that primarily drive the negative correlation between the deployment of governance provisions and firm value.[14] Table VI summarizes the existing literature. The reminder of this section describes each provision, develops hypotheses, and presents empirical results on their effects on the firm's takeover probability.

1. Prior Academic Evidence

Event studies

Earlier studies examine the stock price effects following the adoption of ATPs.[15] Malatesta and Walkling (1988) and Ryngaert (1988) report significant negative abnormal stock returns on the announcements of poison pill adoptions. Jarrell and Poulsen (1987) show that fair-price amendments have insignificant negative effect on stock value, whereas the supermajority, blank check, and staggered board amendments have significant negative effects. Mahoney and Mahoney (1993) find significantly negative abnormal returns for a sample of staggered board

adoption announcements. These studies interpret the findings in support of managerial entrenchment.

Other event studies do not find that ATPs adversely affect shareholders. Linn and McConnell (1983) and McWilliams (1990) report that adoptions of ATPs are associated with significant positive stock price reactions. Brickley, Lease, and Smith (1988) find no significant announcement effects for firms adopting fair price, supermajority, blank check preferred, staggered board, and other provisions. DeAngelo and Rice (1983) document negative but statistically insignificant abnormal stock returns surrounding the announcements of the staggered boards and supermajority amendments.

More recent studies argue that stock price reactions to the announcement of ATP adoptions reflect different types of information and are difficult to interpret. These proposals can convey information concerning the probability of a takeover, the quality of management, or the changes in the corporate governance structure (see Pound, 1987; Borokhovich, Brunarski, and Parrino, 1997; Coates, 2000). Event studies of changes in state takeover laws are mostly immune from these problems, but it is difficult to identify a single date for an event that is preceded by legislative negotiation and followed by judicial uncertainty (see Romano, 1993; Karpoff and Malatesta, 1989; Szewczyk and Tsetsekos, 1992 for evidence on the wealth effects of adoptions of state antitakeover laws). For these reasons, I focus on studies that analyze the effects of the provisions on the firm's takeover probability.

Takeover Deterrents

Poison Pill

One of the most widely studied takeover defenses is so-called "poison pill" or shareholder rights plan. Poison pill gives the target shareholders the right to purchase the target's

or acquirer's stock at a steep discount, thus, diluting the bidder's voting power. It does not require a shareholder approval and can be implemented in less than one-day notice, even after the takeover bid is officially announced.[16] Ryngaert (1988) provides support for takeover deterrence by showing that firms with poison pills are able to defeat takeover bids more often than firms without pills. However, later studies (e.g., Ambrose and Megginson, 1992; Bhagat and Jefferis, 1991; and Comment and Schwert, 1995) find no evidence that poison pills are effective takeover deterrents. Instead, Comment and Schwert (1995) show that poison pills increase the takeover premiums received by target shareholders.

The fact that any firm can adopt a poison pill at any time complicates the analysis. Coates (2000) and Daines and Klausner (2001) argue that almost every firm has a "shadow pill" making the presence of a poison pill at any given time irrelevant in modern takeover battles.[17] Supporting this argument, Coates (2000) documents that pre-bid pills had no effect on hostile bid outcomes during 1997-1999. Bebchuk and Cohen (2005), however, argue that the existence of a pre-bid pill signals that a firm is ready to resist an unfriendly bidder. Furthermore, Bebchuk, Cohen, and Ferrell (2009) find that pre-bid poison pills negatively affect firm value and attribute this result to the managerial resistance to takeovers.

Using a larger and more recent sample of firms than previously analyzed, I examine which of these views dominates by testing whether the pre-bid pill affects the firm's takeover probability.

Staggered (classified) board

In a firm that has a staggered (classified) board structure, directors are divided into classes, typically three, with only one class of directors coming up for reelection each year. Thus, shareholders or an outsider cannot replace a majority of the directors in any given year. Because

of this delay, it may take two years for an acquirer to gain control of the board. Gompers, Ishii, and Metrick (2003) argue that "this slow replacement makes a classified board a crucial component of the *Delay* group of provisions, and one of the few provisions that clearly retains some deterrent value in modern takeover battles".[18]

While earlier studies (e.g., Mikkelson and Partch, 1989; Bhagat and Jefferis, 1991; Ambrose and Megginson, 1992) find no evidence that staggered boards deter corporate takeovers, more recent studies provide evidence consistent with takeover deterrence. Coates (2000) and Daines and Klausner (2001) argue that staggered boards have become more effective due to the proliferation and wide use of poison pill starting in the late 1980s. Consistent with this argument, Bebchuk, Coates, and Subramanian (2002) provide evidence that "staggered boards are a key determinant for whether a target receiving a hostile bid will remain independent". Bates, Becher, and Lemmon (2008) find that board classification reduces the likelihood that the firm receives a takeover bid and "infer that bid deterrence is the primary channel through which classified boards alter a firm's exposure to the market for corporate control". Other studies document that staggered boards are associated with lower firm value and conclude that staggered boards undermine the market for corporate control and entrench firm management (e.g., Bebchuk and Cohen, 2005; Frakes, 2007; Faleye, 2007; and Bebchuk, Cohen, and Ferrell, 2009). Thus, I expect that staggered board negatively affects the firm's takeover probability.

Poison Pill and Staggered Board Combination

Coates (2000) powerfully argues and illustrates with examples that "defense interactions are often more important than the effect of any defense in isolation." Bebchuk, Cohen, and Ferrell (2009) suggest that future work should explore the importance of provisions' interactions.

Relying on prior economic and legal evidence, I develop hypotheses of the effects of provisions' interactions on the firm's takeover probability.

Coates (2000), Daines and Klausner (2001, 2004), Bebchuk, Coates, and Subramanian (2002), Bebchuk and Hamdani (2002), Bebchuk and Cohen (2005), among others, argue that the combination of the staggered board and the poison pill is much more effective than either of the defenses alone. If the target's directors are re-elected each year, the bidder can replace the target's board at the annual election and remove the pill. However, if the target firm has a staggered board, the bidder has to wait two years to replace the majority of the board so that the pill can be removed. Similarly, without the pill, a bidder can acquire control of the target through a tender offer or an open-market stock purchase regardless whether the target's board is staggered or not. Thus, a firm needs the poison pill and the staggered board to effectively deter a takeover. I examine whether the firms that have both of these provisions in place are less likely to be acquired relative to all other firms.

Limits to act by written consent and to call a special meeting

Coates (2001) argues that, for public companies, the ability of shareholders to act by written consent can leave companies vulnerable to hostile takeovers. Limits on shareholder rights to act by written consent and to call special meetings restrict shareholders' ability to meet and act outside of regularly scheduled meetings, adding extra time to proxy fights and control contests. Bhagat and Jefferis (1991), Gompers, Ishii, and Metrick (2003), and Daines and Klausner (2001, 2004) argue that these provisions, especially when used in combination, make it difficult for an outsider to gain control of the board and, thus, constitute significant barrier to hostile takeovers. Furthermore, Daines and Klausner (2001, 2004) explain that restrictions to vote by written consent and to call special meetings can be used in combination with a poison pill to create a

barrier to hostile takeover. Similarly, Bebchuk and Hamdani (2002) argue that a poison pill combined with any provision that delays the replacement of directors can serve as a serious impediment to a corporate takeover. In contrast to the idea that limits on shareholder rights and special meetings delay takeovers, Bebchuk, Cohen, and Ferrell (2009) argue that the practical significance of the required delay is limited and not substantial. I test these theoretical predictions by examining whether the restrictions to vote by written consent and to call special meetings (used in combination) reduce the probability of corporate takeover. In addition, I examine whether these provisions combined with the pre-existing poison pill create a significant barrier to corporate takeovers.

Limits to amend bylaws

Limits to amend bylaws decrease shareholders' ability to amend the governing documents of the corporation. Coates (2001) explains that in firms with no limitations to amend bylaws, shareholders can "work around" the provisions that impose barriers to takeovers by amending the bylaws and taking the action that would have been prohibited. Bebchuk, Cohen, and Ferrell (2009) argue that limitations to amend bylaws significantly enhance the effectiveness of a target's defenses and can have "draconian antitakeover consequences, making it practically impossible for nonmanagement shareholders to remove defensive provisions that management earlier placed in the bylaws." This study tests empirically whether limits to amend bylaws have a negative effect on the firm's takeover probability. In addition, I test whether this provision when used in combination with the staggered board and poison pill enhances the effectiveness of these defenses.

Director's duties

Directors' duties allow directors to consider constituencies other than shareholders (e.g., employees, communities, or suppliers) in evaluating a possible change in control. Daines and Klausner (2001) argue that it is always possible to justify that a takeover is detrimental to some other constituent; hence, this provision gives management a greater authority to reject a takeover even if it would have been beneficial to shareholders. I test this argument empirically by examining whether directors' duties provision has a negative effect takeover probability.

Cumulative Voting

With cumulative voting, all the votes a shareholder is entitled to can be casted for one director allowing a large minority holder to ensure some board representation. Bhagat and Brickley (1984) argue that restrictions on cumulative voting decrease shareholders' ability to elect their representative, thereby increasing takeover costs. However, Coates (2001) states that a staggered board "can turn cumulative voting from a takeover vulnerability to defense", and it may take three elections for the bidder to gain control of the board because the insiders may be able to control one seat per each election (see also Bebchuk, Coates, and Subramanian, 2002; Daines and Klausner, 2001).

It should be noted that cumulative voting is relatively uncommon and its usage has been decreasing over the sample time period.[19] Almost 20% of firms with staggered board had cumulative voting requirement in 1990, but less than 8% of firms with staggered board had cumulative voting in 2004. Nevertheless, I test the significance of cumulative voting provision and its interaction with staggered board in determining the firm's takeover probability. The expected effect is that the cumulative voting enhances the deterrent power of staggered board.

Weak Takeover Deterrents

Coates (2000), Daines and Klausner (2001), and Bebchuk and Cohen (2005) argue that some common takeover defenses are no longer important in actual takeover fights because they are dominated by and are redundant with poison pills which any firm can adopt on short-term notice. These provisions provide no additional protection and include the following: supermajority voting requirements, fair price provisions, antigreenmail amendments, blank check preferred stock, business combination law, and control share acquisition (cash-out) law (see the studies referenced above and also Gompers, Ishii, and Metrick, 2003 and Bebchuk, Cohen, and Ferrell, 2009 for the detailed explanation of these provisions). Even earlier studies do not find strong support for takeover deterrence associated with the deployment of these provisions (e.g., Bhagat and Jefferis, 1991; Ambrose and Megginson, 1992). As far as more recent studies, Daines and Klausner (2001) state that they do not even consider these "weak" defenses in the analysis of firms undergoing the initial public offering. Bebchuk, Coates, and Subramanian (2002) include fair price and supermajority voting provisions in the analysis of hostile bid outcomes but do not find them significant. Concerning antigreenmail amendment, Bebchuk and Kamar (2010) argue that its main function is not to prevent takeovers but instead to "hide" the adoption of other takeover defenses. Ryngaert and Scholten (2010) find that firms in the 1990s shifted from the use of active takeover defenses, such as greenmail and leverage increases, to "just say no" defenses, such as poison pills and staggered boards, which also implies the irrelevance of anti-greenmail provisions. Overall, recent theory predicts that these provisions have only limited, if any, effects in modern takeover contests.

Compensation Arrangements

Golden parachute is a provision in the executive compensation agreement that provides cash payments (typically, three year's salary) plus other benefits (e.g., insurance) to top managers if a firm experiences a change in control.[20] While golden parachutes impose higher costs on bidders and higher costs may deter takeovers, prior studies suggest that golden parachutes differ considerably from other takeover defenses in terms of their influence on the dynamics of takeovers. These studies generally support the idea that golden parachutes reduce managerial resistance to takeovers.

Jensen and Zimmerman (1985), Jensen (1988), Singh and Harianto (1989), Harris (1990), Cotter and Zenner (1994), and Kahan and Rock (2002) argue that golden parachutes help to align the interests of managers and shareholders in the event of a takeover by compensating managers for their potential salary losses and, thus, reduce managerial resistance to takeovers. Agrawal and Knoeber (1998) suggest that as long as a golden parachute payment is equal to expected payment promised to a manager, the threat of a takeover imposes no risk on the manager. They find that firms with golden parachutes are more likely to be acquired. Lambert and Larcker (1985) report a positive stock price reaction to the announcement of golden parachutes and show that golden parachutes have a favorable effect on the reaction of executives to takeover bids.[21] Consistent with this evidence, Machlin et al. (1993) document that golden parachutes have a positive effect on takeover probability, and the size of parachute payments is positively related to takeover premiums. Bebchuk, Cohen, and Ferrell (2009) find that golden parachutes are associated with lower firm value and suggest that while golden parachutes may benefit shareholders by increasing the likelihood of an acquisition, they may also have an adverse effect by increasing slack on the part of managers as a result of being compensated

following a change in control. Since the focus here is on corporate takeovers, I hypothesize that golden parachute has a positive effect on the firm's takeover probability.

Similarly, I expect that compensation plans have a positive effect on the firm's likelihood of being acquired. Compensation plans accelerate benefits, such as option vesting, in the event of a change in control. While they do not provide any additional benefits, they affect the value of CEO's compensation package in the event of a takeover. Several studies suggest that CEO wealth benefits affect the CEO's opposition to takeovers. Walkling and Long (1984) find that managers of target firms are less likely to resist the takeovers when they receive larger benefits from changes in the value of managerial stock holdings. Similarly, Bebchuk, Coates, and Subramanian (2002) suggest that managers with compensation packages exercised in the event of a takeover would use their bargaining power to get a better deal but in the end would rather sell the firm than remain independent.

Other Provisions

While the G-Index components affect the balance of power between managers and shareholders, some provisions are not relevant in determining the takeover outcome. For example, silver parachutes provide payments to a large number of employees in the event of job loss or demotion following a change in control. Since silver parachutes do not protect the key decision-makers of merger negotiations, they are unlikely to influence merger outcomes. Severance agreements provide assurance to high-level executives of their positions or some compensation but are not conditional on a change in control. Other provisions (i.e., director indemnification provisions, director indemnification contracts, and limits on director liability) are related to issues of liability and indemnification in the event of shareholder suits rather than to issues of corporate control (see Core, 1997; Core, 2000; and Bebchuk, Cohen, and Ferrell,

2009). While liability often arises in mergers and acquisitions, all relevant cases reviewed in

Black, Cheffins, and Klausner (2006) are against the directors improperly or cheaply selling the

firm rather than their resistance to sell. Furthermore, Black, Cheffins, and Klausner (2006)

document that directors are protected from personal liability by other factors besides liability

provisions. Even if the suits were brought against the directors refusing to sell the firm, Oesterle

(1989) argues that the courts are likely to determine that the directors had the breach of the duty

of loyalty or the intentional misconduct, in which case, the limits on director's liability would not

apply.

In summary, an extensive search of law and finance literature did not provide any

evidence that the remaining nine G-Index provisions are significant determinants of takeover

outcomes. Thus, I do not expect that these provisions affect the firm's takeover probability, but I

include them in the regressions for the following reasons. First, to document empirically that

these provisions are not significant determinants of takeover outcomes. Second, to control for the

balance of power between managers and shareholders and any interactions in the provisions.[22]

2. Individual Provisions: Empirical Results

This section examines the effects of individual ATPs and provisions' interactions on the

firm's takeover probability. Similar to the G-Index analysis, I estimate hazard model where the

dependent variable is the firm's risk of being acquired. Control variables include firm

characteristics, year and industry fixed effects. Results are presented in Table VII reporting only

coefficients of interest to conserve space.

Model 1 includes takeover deterrents, compensation arrangements, weak deterrents, and the

index of other provisions. Only *staggered board* has a significant negative effect on the firm's

risk of being acquired. Surprisingly, *limits to call special meetings and to act by written consent* have a positive sign (significant at 5%). *Golden parachute* and *compensation plan* have positive coefficients (significant at 1% and 5%, respectively). Other takeover deterrents - pre-bid *poison pill, limits to amend bylaws*, *cumulative voting*, and *directors' duties* - are not significant. Consistent with recent theory, none of the weak takeover deterrents are significant in predicting the firm's takeover probability. Similarly, *Index of other provisions* does not relate to the firm's takeover probability. In remaining specifications (Models 2-7), I combine weak deterrents with other provisions into the *Index of other provisions*.

Model 2 examines the effect of the poison pill and staggered board combination on the firm's risk of being acquired. Forty one percent of sample firms have both defenses. The coefficient on *staggered board*poison pill* is negative and significant at the one percent level and is greater in economic and statistical significance than the coefficient on *staggered board* in Model 1. This result provides support for the argument that the staggered board-poison pill combination is a powerful anti-takeover mechanism. Consistent with Bebchuk and Cohen (2005), even the pre-existing poison pill in firms with staggered boards sends a strong signal that the target firm is ready to resist.

Models 3-5 examine interactions of other provisions (i.e., limits to call special meeting and to act by written consent with a pre-existing poison pill, limits to amend bylaws with staggered board-poison pill combination, and staggered board and cumulative voting). None of the interaction terms are significant providing no evidence that these provisions are more effective when used in combination.

Since there is no evidence that limits to special meetings and written consent, limits to amend bylaws, director's duties, and cumulative voting affect the firm's takeover probability overall, I

examine whether these provisions are more important in takeovers that are more likely to be disciplinary rather than synergistic. Following Morck, Shleifer, and Vishny (1988, 1989), I assume that firms in low market-to-book industries are more likely to be subject of disciplinary takeovers. Results on director's duties and cumulative voting remain insignificant and are not reported in the Table for the sake of brevity. Models 6 and 7 present the results for limits to special meetings and written consent and limits to amend bylaws. Controlling for the provision interaction with industry market/book, the coefficient on *limits to amend bylaws* becomes negative and significant at the five percent level (Model 6) indicating that firms with limits to amend bylaws are less likely to be acquired. The coefficient on interaction term *Limits to amend bylaws*Industry Market/Book* is positive and significant at the ten percent level, providing some evidence that limits to amend bylaws decrease the sensitivity of takeover to industry performance. The coefficient on limits to call special meetings and to act by written consent (Model 7) becomes negative but remains insignificant, but the coefficient on the interaction term *Limits to meetings and written consent*Industry Market/Book* is positive and significant at the ten percent level providing some evidence that these provisions decrease the sensitivity of takeover to industry performance. It should be noted that the use of limits to special meetings and to act by written consent has more than doubled during the sample time period. In 1990, 16% of firms deployed both of these provisions; while 33% of firms deployed these provisions in 2004. Bebchuk et al. (2009) do not find that these provisions negatively affect firm value. Future research may provide some explanation regarding the increasing use of these provisions and their effects on firm shareholders.[23]

Overall, Table VII documents that, in contrast to the insignificant effect of the aggregate G-Index, some individual provisions have significant but opposing effects in predicting the firm's

takeover probability. Results largely support recent theories in law and finance and document

that staggered board–poison pill combination serves as the strongest anti-takeover mechanism. It

should be noted that, while, theoretically, the staggered board is more effective combined with

the poison pill, empirically, staggered board alone is also significant, consistent with the fact that

poison pill can be added at any time. Three other provisions (limits to amend bylaws, to call

special meeting, or to act by written consent) do not exhibit strong anti-takeover characteristics

but show some evidence of deterrence in takeovers that are more likely to be disciplinary. Future

research may investigate specific situations or business environment where these defenses

become more important. Also, consistent with recent theory, some commonly used defenses are

no longer important in modern takeovers. Finally, compensation arrangements exercised in the

event of a takeover significantly reduce managerial resistance and result in higher takeover

likelihood. In contrast to these positive effects, the use of the G-Index as an anti-takeover proxy

assumes that these provisions deter takeovers.

IV. Anti-takeover provisions and takeover premiums

This section examines an alternative explanation to the use of anti-takeover provisions --

the effect on takeover premiums. It first reviews relevant literature and then presents the

empirical findings.

1. Prior Evidence

Takeover defenses may benefit target shareholders by increasing the takeover premium.[24]

Grossman and Hart (1980), Linn and McConnell (1983), and Stulz (1988) argue that ATPs may

provide boards with additional bargaining power. DeAngelo and Rice (1983) suggest that

takeover defenses solve a rush-to-tender problem and force bidders to negotiate directly with firm managers. Harris (1990) argues that takeover defenses can enable the target shareholders to increase their share of any synergy gains expected to result from the acquisition. Ruback (1987) posits that target management's resistance can stimulate auctions leading to higher offer price for target shareholders. Alternatively, a moral hazard problem may exist, whereby managers may settle for a lower takeover premium in order to collect parachute payments (see Machlin et al. 1993).

Empirical evidence suggests that some ATPs have positive effects on the magnitude of takeover premium. Comment and Schwert (1995), for example, find that firms protected by poison pills and control share laws receive higher takeover premiums. Machlin, Choe, and Miles (1993) find that the size of parachute payment has a positive effect on takeover premium. Cotter, Shivdasani, and Zenner (1997) document that targets with poison pills and majority independent directors receive higher takeover premiums and suggest that independent boards are more likely to use resistance strategies to enhance shareholder wealth rather than to entrench target managers. Other studies examine the effects of staggered board, supermajority requirements and fair price provisions but do not find them significant in explaining the variation in takeover premium. Table VIII reviews the existing literature on ATPs and takeover premiums.

This study examines whether the G-Index, which includes a wide range of ATPs, is related to takeover premiums. The study also analyzes the effect of individual provisions. The tested hypothesis is that provisions that are classified as takeover deterrents (see Section III) improve the bargaining position of target's management by imposing delays. I also examine whether compensation arrangements exercised in the event of a takeover affect the size of takeover premium received by target shareholders. The tested hypothesis is that compensation

plans and golden parachutes align the interests of managers and shareholders in the event of a takeover and induce managers to bargain harder, resulting in higher takeover premiums to selling shareholders.

2. *Empirical Results*

Table IX presents OLS estimates of the relation between the G-Index and takeover premiums. The takeover premium is measured as the abnormal stock return from 42 trading days prior to the merger announcement until resolution (i.e., the day of delisting or six months after the announcement, whichever is earlier). The market model parameters for the CRSP value-weighted index are estimated over 255 days, ending 46 trading days prior to the merger announcement. The average market-adjusted premium cumulated over the complete period from 42 trading days before the acquisition announcement until resolution is 32%.[25] Independent variables in Model 1 include the G-Index, firm performance measures, merger deal characteristics, and year fixed effects (not reported).

[Insert Table VII here]

Results indicate that the G-Index is not significant in explaining the variation in takeover premiums and provide no evidence that a high number of governance provisions increases the bargaining power of target management. Out of control variables, the prior three-year stock return, liquidity, and all-cash indicator are significant at ten percent or lower. Consistent with Field and Karpoff (2002), the negative coefficient on cumulative abnormal return indicates that firms with poor stock performance, when acquired, receive higher takeover premiums than firms with better stock performance. Consistent with Comment and Schwert (1995), all-cash

transactions are associated with higher takeover premiums. Additionally, targets with more liquid assets receive higher takeover premiums.

Model 2 examines individual ATPs that are identified in section III.1 as takeover deterrents. It also includes cash out law to examine whether the positive effect documented by Comment and Schwert (1995) still holds in a more recent sample. Results show that out of eight takeover defenses, only poison pill has a significant (positive) effect. In unreported analysis, I examine provisions' interactions and do not find that any combinations of provisions that are supposedly associated with greater takeover protection (see Section III) are significantly related to takeover premiums.

Model 3 examines golden parachutes and compensation plans. As noted by prior literature and shown in section III.2 here, these provisions differ considerably from other ATPs in terms of their effects on the dynamics of corporate takeovers. In contrast to takeover deterrents that impose barriers to takeovers, these provisions are associated with higher takeover likelihood. Results show that compensation plans are associated with higher takeover premium (significant at 5%). This is consistent with the conjecture that managers negotiate for a higher offer price since a higher offer price increases the exercise price of manager's stock options. The coefficient on golden parachute is positive but insignificant. Since I do not have data on the size of parachute payments, I cannot confirm Machlin, Choe, and Miles (1993) result that the size of parachute payment is positively associated with takeover premium.

Model 4 includes all provisions that are expected to affect corporate takeovers and also controls for the index of other provisions. In that specification, the coefficient on *compensation plan* remains positive and significant at the five percent level. The coefficient on *poison pill* becomes insignificant (*p*-value=0.118). These findings support the idea that various provisions

have different effects on target shareholders. While some provisions (e.g., staggered board) deter corporate takeovers but do not increase the takeover premium, other provisions (e.g., compensation plans) reduce managerial resistance to takeovers and lead to higher takeover premium.

V. Conclusion

This study examines the effects of a wide range of anti-takeover provisions on the firm's takeover probability and the magnitude of takeover premium in modern takeover contests. While ATPs have been studied for several decades, legal scholars argue that the legal developments at the end of the 1980s have changed the significance of many provisions, making earlier empirical evidence not very useful in today's environment. Based on theory from economics, law, and finance, this study identifies the provisions that could significantly impact modern takeover outcomes. Empirical tests show that some of these provisions have strong but opposing effects on the firm's takeover probability and premiums. For example, while staggered boards are associated with lower takeover likelihood and have no effect on the size of the takeover premium, golden parachutes and compensation plans are associated with higher takeover likelihood and compensation plans are associated with higher takeover premiums.

Theory argues that staggered board is most effective when used in combination with poison pill. Since poison pill can be adopted at any time, even after the takeover bid is publicly announced, the staggered board by itself shows strong anti-takeover characteristics. However, the combination of staggered board and pre-bid poison pill shows even stronger deterrence than the staggered board alone, supporting the idea that a pre-bid poison pill sends a strong signal of takeover resistance. The study also provides some evidence that limits to amend bylaws and the

combination of limits to call special meetings and to act by written consent decrease the takeover probability of firms in poorly performing industries.

Overall, this study shows that despite infrequent hostility in modern takeover contests, some provisions play important but different roles in determining the takeover outcomes. Combining provisions into an index, such as, the G-Index, without accounting for the diverse effects of various provisions, does not reveal the significance of these provisions in modern takeover contests. Thus, while many studies assume that the G-Index measures the firm's takeover vulnerability, this study provides evidence inconsistent with this assumption and shows that out of 24 governance provisions available to researchers the staggered board – poison pill combination is most effective in measuring a firm's takeover protection.

It is worth emphasizing that the effect of takeover defenses on takeover probability and premiums is a complex issue. Theoretically, ATPs are only important in takeovers that target management deems hostile. In practice, however, it is difficult to distinguish friendly from hostile takeovers, and the bidding firm does not know with certainty the target management's reaction prior to making a bid. Thus, while it is up to the firm's management to decide whether or not to resist the takeover and to exercise the anti-takeover properties of staggered board and poison pill, the fact that these provisions show strong deterrence in all takeovers (both friendly and hostile) suggests that the presence of these provisions prevents many acquiring firms from making public bids in the first place. In other words, everything else equal, a bidding firm would rather pursue a firm without a staggered board and pre-existing poison pill if there is some chance of takeover resistance.

Appendix: Variable Definitions

All accounting performance measures (except firm size) are recorded at the fiscal year-end and are averaged over the three-year period prior to the event year.

Size = natural logarithm of total assets at the fiscal year-end prior to the event year

Sales Growth = average annual growth in sales

Liquidity = (current assets - current liabilities) / total assets

Debt / Equity = total debt to equity ratio

Market / Book = year-end market value of common stock to the book value of equity

Price/Earnings = year-end stock price / earnings per share

Industry Market/Book = industry average market value of common stock to the book value of equity; industry is defined according to 48 Fama-French classifications

CAR = cumulative stock return for the three years prior to the event year minus the contemporaneous cumulative return on the value-weighted CRSP index

Ln(Age) = firm age (in log form), measured as the number of years from the time the firm is first listed on COMPUSTAT to the event year

Delaware =1, if the firm's state of incorporation is Delaware and equals 0, otherwise

Hostile =1, if the deal is hostile and equals 0, otherwise

Tender Offer =1, if the deal is a tender offer and equals 0, otherwise

Multiple Bidders =1, if the deal has more than one bidder and equals 0, otherwise

All Cash =1, if the deal is financed entirely by cash and equals 0, otherwise.

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Footnotes:

[1] This index is also known as G, GIM Index, or index of anti-takeover provisions. It consists of 24 non-overlapping provisions, including firm-level takeover defenses, state anti-takeover laws, compensation arrangements, limits on shareholders' voting power and directors' liability. With each provision given an equal weight, a larger number of provisions (higher G-Index) is associated with stronger managerial power (weaker shareholder rights). While some researchers utilize this index as a broad measure of the firm's governance, others take a more narrow perspective and use it as a measure of the firm's takeover vulnerability.

[2] Other studies that use the G-index as an anti-takeover proxy include Chava et al. (2008), Dittmar and Mahrt-Smith (2007), Cremers, Nair, and Peyer (2008), Cremers, Nair, and Wei (2007), and Fahlenbrach (2009).

[3] Core, Holthausen, and Larcker (1999) note that in an efficient market there should be no relation between governance and future stock returns.

[4] While this study focuses on takeover deterrence of these provisions and the effects on target shareholders, other studies analyze the relation between the G-Index and firm performance, corporate governance, and various corporate events. In addition to papers listed above, see Bebchuk, Cohen, and Ferrell (2009), Chi (2005), Core et al. (2006), Harford et al. (2008), Gillan et al. (2006), Gillan (2006), Ashbaugh-Skaife et al. (2006), Kaplan and Minton (2006), Bhagat and Bolton (2008), Philippon (2006), Amit and Villalonga (2006), and Perez-Gonzalez (2006).

[5] Corporate takeovers can be classified into two broad categories: synergistic and disciplinary. Typically, synergistic takeovers are motivated by the desire to combine the businesses of two firms with the possibility of benefits or synergy gains (e.g., Morck, Shleifer, and Vishny, 1988, 1989). In contrast, disciplinary takeovers are motivated by the desire to replace poorly performing managers and provide the strongest form of managerial discipline (e.g., Jensen, 1986; Scharfstein, 1988; Shivdasani, 1993). Morck et al. (1988, 1989) argue that the motive for a takeover often determines its mood and the target management's reaction. The disciplinary takeovers often generate hostility and opposition, while synergistic takeovers generate friendly reaction from the target's management.

[6] The data are available for 1990, 1993, 1995, 1998, 2000, 2002, and 2004. Following GIM, each missing year is filled with data from the preceding publication year and firms with dual class common stock are omitted from the analysis. The alternative methods of filling missing data do not change the results presented throughout this study.

[7] The main results of the paper remain qualitatively the same if a three-year financial and stock data requirement is relaxed to a one-year requirement and if acquisitions of at least 15% of a target stock are included.

[8] See, Gompers et al. (2003), Bebchuk, Cohen, and Ferrell (2009), Masulis et al. (2007), and Harford et al. (2008) for description of IRRC data.

[9] Gompers et al. (2003) classify firms into "Democracy" and "Dictatorship" groups based on the G-Index deciles. Using GIM classification does not alter the results of this study; however, each decile is allocated only a small number of takeover targets, which weakens the statistical power of the tests.

[10] Shumway (2001) explains that single period logit models ignore the fact that firms change through time and do not consider that subjects existed but were not observed prior to the start of the sample period and that some events occur beyond the end of the sample period. In contrast, survival functions (e.g., hazard functions) incorporate data truncation and follow the firm through time and observe at which point it experiences an event of interest. I use firm age to account for data truncation.

[11] For comparison with previous studies, I also perform logit model estimation. The results throughout the study are similar to the ones reported using the hazard model and are available upon a request.

[12] Data on other governance characteristics are available only for a subsample of firms. Data on board structure and managerial ownership are available for 1996-2004 from the IRRC Directors database. Blockholder data are from the study by Dlugosz, Fahlenbrach, Gompers, and Metrick (2006) during 1996-2001.

[13] Results do not change if I use alternative specifications of poor performance, such as indicator variables for stock returns below the sample mean, median, or in the lowest quartile of the sample.

[14] An alternative approach is to determine a subset of provisions on the basis of their statistical significance in a step-wise procedure. However, this method of variable selection is arbitrary and leads to the statistical 'over fitting' of the model to the sample at hand. To avoid this problem, I choose variables based on a set of hypotheses and evidence from prior studies.

[15] Surveys of this literature can be found in Bhagat and Romano (2002), Comment and Schwert (1995), Karpoff and Malatesta (1989), and Coates (2000).

[16] Bruner (1991) and Coates (2000) provide a detailed overview of poison pills and their mechanics.

[17] Coates (2000) reviews studies documenting that many targets have in fact adopted pills in response to takeover bids and do not allow themselves to be taken over solely because they had no pre-bid pill.

[18] An alternative view is that staggered boards benefit shareholders by providing stability and continuity that might not be available if all directors are elected annually (e.g., Wilcox, 2002; and Koppes, Ganske, and Haag, 1999).

[19] See Coates (2001) for a review of studies that document a decreasing trend in the use of cumulative voting.

[20]See Hartzell, Ofek, and Yermack (2004) and Fich, Tran, and Walkling (2010) for review of existing literature on golden parachutes.

[21] The positive abnormal return at the golden parachute announcement is consistent with the hypothesis that the golden parachute resolves a conflict of interest between shareholders and managers. It is also consistent with the hypothesis that the adoption of a golden parachute signals that the firm is in play and that stock prices are responding to the anticipation of a takeover premium.

[22] Bebchuk, Cohen, and Ferrell (2009) suggest that it is "desirable to look at the universe of provisions together" (p. 783).

[23] I also address potential endogeneity in the provision's use and takeover probability. This analysis is complicated by identification and data availability of a valid instrumental variable for every G-Index component. I examine the lagged values of each provision and do not find any changes in the sign and significance of coefficient estimates.

[24] There is an extensive literature on wealth effects of ATPs on target security holders, including event studies, firm valuation, shareholder and bondholder wealth effects. For additional reference, see Jarrell, Brickley, and Netter (1988), Karpoff and Malatesta (1989), Lambert and Larcker (1985), Malatesta and Walkling (1988), Pound (1987), Ryngaert (1988), Comment and Schwert (1995), Coates (2000), Klock, Mansi, and Maxwell (2005), and Bebchuk, Cohen, and Ferrell (2009).

[25] Schwert (1996) shows that there is a price run up starting up to two months prior to the merger announcement date. Field and Karpoff (2002), among others, use the same event window as described above to examine the effect of a takeover on target shareholders. For robustness, I also examine shorter event windows around the merger announcement (e.g., on the announcement date, three-, five- , ten- days around the announcement date). The average market-adjusted return on the merger announcement date is 16%. The average announcement returns to firms with high G-Index values (above sample mean) are not significantly different from the average announcement returns to firms with low G-Index values (below sample mean): 15% vs. 16%, respectively. The announcement returns are not significantly different when I consider other event windows and other breakpoints for high and low G-Index groups. The results are available upon a request.

Table I. Sample Summary Statistics

Panel A: G-Index summary statistics by IRRC publication year

The sample consists of 7,332 firm-years (2,231 firms) covered by the IRRC Governance database with financial and stock return data available on CRSP and COMPUSTAT for three years prior to publication year. Firms with dual class common stock are omitted from the analysis.

	1990	1993	1995	1998	2000	2002	2004
Mean	9.1	9.3	9.4	9.0	9.2	9.3	9.3
Median	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Minimum	2	2	2	2	2	2	2
Maximum	17	17	17	18	19	18	18
Standard Deviation	2.8	2.8	2.8	2.8	2.7	2.6	2.5
Number of Firms	868	929	947	1,178	1,077	1,126	1,207

Panel B: Distribution of takeovers and deal values by announcement year

The sample consists of 558 single-class firms covered by the IRRC Governance database that were targets of 574 corporate takeovers and have annual financial and daily stock return data available on COMPUSTAT and CRSP for three consecutive years prior to the merger announcement date. Takeover targets are listed on SDC as targets of mergers, tender offers, or acquisitions of majority interest announced during 1/1/1990-12/31/2004. Deal value is reported by SDC as the total value paid by acquirer, excluding fees and expenses. Deal value is converted to 2004 constant dollars.

Year	Number of Takeovers	Deal Value ($ million)	
		Mean	Median
1990	19	1,389	824
1991	13	834	391
1992	6	771	320
1993	9	2,771	1,288
1994	24	2,686	1,346
1995	33	2,546	1,444
1996	40	3,529	1,987
1997	47	1,993	1,085
1998	89	6,430	1,533
1999	100	4,526	1,068
2000	67	5,524	2,092
2001	44	3,535	2,189
2002	11	6,779	450
2003	30	2,324	604
2004	42	2,777	1,271
Total	574	3,228	1,193

Table II. Differences in G-Index Values between Target and Non-Target Firms, Friendly and Hostile Takeovers, Completed and Withdrawn Deals

Panel A: Differences in G-Index values between targets and non-targets

The sample consists of 7,332 firm-years (2,231 firms) covered by the IRRC Governance database with financial and stock return data available on CRSP and COMPUSTAT for three years prior to the event year. Firms with dual class common stock are omitted from the analysis. Takeover targets are U.S. public firms that are identified by SDC as targets of mergers, tender offers, or acquisitions of majority interest during 1/1/1990-12/31/2004. The number of observations is given in parentheses.

| IRRC | Merger | Mean G-Index | | *p*-value for differences |
| | | Targets (N=574) | Non-targets | |
Year	Year		(N=6,758)	in means test
1990	1990-1992	8.58	9.15	0.22
1993	1993-1994	9.21	9.35	0.78
1995	1995-1997	9.31	9.42	0.69
1998	1998-1999	9.22	8.90	0.16
2000	2000-2001	9.17	9.19	0.81
2002	2002-2003	8.73	9.30	0.17
2004	2004	9.14	9.32	0.65
Overall Sample		9.14	9.23	0.42

Panel B: Differences in G-Index values for various takeover subcategories

The sample consists of 574 firm-years that are covered by IRRC and were targets of mergers, tender offers, or acquisitions of majority interest during 1/1/1990-12/31/2004. Deal status (completed/ withdrawn) and deal attitude (friendly/hostile) are as classified by SDC.

	Mean G-Index	Number of Observations
Hostile / Friendly	9.95 / 9.05**	57 / 517
Hostile Only: Completed / Withdrawn	9.78 / 10.03	18 / 39
Overall Sample: Completed / Withdrawn	9.09 / 9.32	467 / 107

**indicates statistical significance at the 5%, based on a two-tailed test.

Table III. Takeover Frequencies and Deal Characteristics of High and Low G-Index Firms

Panel A: Takeover frequencies			
The sample consists of 7,332 firm-years covered by the IRRC governance provisions database with accounting and stock performance data available on COMPUSTAT / CRSP three years prior to the IRRC publication year. Firms with dual common stock are omitted from the analysis. Takeover targets are U.S. public firms that are identified by SDC as targets of mergers, tender offers, or acquisitions of majority interest during 1990-2004. *Low* and *High* categories are based on the G-Index quintile rankings for the overall sample. *Low* includes firms with G-Index values below seven, and *High* includes firms with G-Index values greater than 11. The number of firms in each category is given in parentheses.			

merger years	Low (G-Index < 7)	High (G-Index > 11)	Chi^2 test p-value
1990-1992	5.52%	1.12%	0.02**
1993-1994	4.52%	3.20%	0.51
1995-1997	13.38%	11.21%	0.52
1998-1999	12.69%	20.00%	0.03**
2000-2001	10.05%	10.53%	0.88
2002-2003	5.19%	2.88%	0.26
2004	2.05%	3.62%	0.39
Overall Sample	8.17% (N=1,214)	7.82% (N=1,497)	0.73

Panel B: Merger deal characteristics			
The sample consists of 574 firms-years that were targets of corporate takeovers during 1990-2004 and are covered by the IRRC governance provisions database. The information on deal characteristics is from SDC Mergers & Acquisitions database. Takeover targets, *Low* and *High* groups are identified the same way as described in Panel A.			

Merger Deal Characteristics	Low (N=100)	High (N=117)	Chi^2 test p-value
Completed	83%	79%	0.42
Hostile	4%	13%	0.02**
Multiple Bidders	6%	10%	0.26
Tender Offer	31%	23%	0.19

**indicates statistical significance at the 5%, based on a two-tailed test.

Table IV. Firm Financial Characteristics, Board Composition, and Ownership Structure

The sample consists of 14,634 firm-years covered by the IRRC Governance database. Firms with dual class common stock are omitted from the analysis. Data on takeovers are from SDC Mergers & Acquisitions. Variable definitions are provided in the Appendix.

Panel A: Summary Statistics

Variable	Mean	Median	Standard Deviation	Number of Observations
G-Index	9.23	9.00	2.72	14,634
Total Assets ($ million)	3,520.24	931.66	8,431.40	14,634
Sales Growth	0.15	0.08	0.45	14,634
Liquidity	0.20	0.18	0.20	14,634
Debt / Equity	0.41	0.44	5.37	14,634
Market / Book	2.49	2.11	9.75	14,634
Price / Earnings	9.25	15.21	52.15	14,634
CAR, %	2.14	1.16	9.99	14,634
Delaware	0.54	1	0.50	14,634

Panel B: Pearson Correlation Matrix

Variable	Takeover	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) G-Index	-0.01								
(2) Size	-0.02*	0.20*							
(3) Sales Growth	0.01	-0.11*	-0.04*						
(4) Liquidity	-0.01	-0.17*	-0.48*	0.11*					
(5) Debt / Equity	0.01	0.02*	0.04*	0.00	-0.01				
(6) Market / Book	0.01	-0.01	0.04*	-0.02*	0.04*	0.35*			
(7) Price / Earnings	-0.02	0.00	0.01	-0.02*	0.01	0.00	0.00		
(8) CAR	-0.03*	-0.08*	-0.05*	0.16*	0.17*	0.00	0.06*	0.02*	
(9) Delaware	-0.05*	-0.08*	-0.01	0.06*	-0.03*	-0.01	-0.02	0.05*	-0.23*

*indicates statistical significance at the 5% or higher.

Table V. G-Index and Acquisition Likelihood

Hazard function in which the dependent variable equals one if the firm is a target of completed merger, tender offer, or acquisition of majority interest during 1990-2004, and zero, otherwise. The sample includes 14,634 firm-years covered by IRRC Governance database with data available on COMPUSTAT and CRSP. Variable definitions are provided in the Appendix. All models control for industry and year fixed effects. Each regression is estimated using the Cox proportional hazard model, with standard errors estimated using Huber-White estimators adjusted for firm clustering. z-statistics are given in parentheses.

Variable	1	2	3	4
G-Index	0.013	0.013	0.013	-0.043
	(0.69)	(0.70)	(0.68)	(-1.38)
Size	-0.166***	-0.167***	-0.167***	-0.167***
	(-4.15)	(-4.15)	(-4.16)	(-4.17)
Sales Growth	-0.089	-0.089	-0.089	-0.082
	(-0.69)	(-0.69)	(-0.68)	(-0.63)
Liquidity	-0.232	-0.233	-0.232	-0.204
	(-0.71)	(-0.72)	(-0.71)	(-0.63)
Debt/Equity	0.033	0.033	0.033	0.032
	(1.30)	(1.29)	(1.30)	(1.28)
Market/Book	-0.003	-0.003	-0.003	-0.003
	(-0.35)	(-0.34)	(-0.29)	(-0.31)
Price/Earnings	-0.001	-0.001	-0.001	-0.001
	(-0.94)	(-0.94)	(-0.94)	(-0.94)
CAR	-0.004	-0.002	-0.004	-0.004
	(-0.85)	(-0.11)	(-0.79)	(-0.76)
CAR*G-Index		0.000		
		(0.18)		
Industry Market/Book			-0.022	-0.199**
			(-0.68)	(-2.32)
Industry Market/Book*G-Index				0.019**
				(2.27)
Ln(Age)	-0.195**	-0.194**	-0.194**	-0.189**
	(-2.23)	(-2.23)	(-2.22)	(-2.17)
Delaware Incorporation	0.177*	0.177*	0.178*	0.187*
	(1.71)	(1.71)	(1.71)	(1.80)
Model chi-square	267.39	267.43	267.85	272.67
(p-value)	(0.001)	(0.001)	(0.001)	(0.001)

***, **, and * indicate significance at the 1%, 5%, and 10%, respectively, based on a two-tailed test.

Table VI. Individual Provisions and Takeover Likelihood: Literature Review

Takeover Deterrents:

Provision	Effect on Takeover Likelihood	Source
Poison pill	negative	Ryngaert (1988), Bebchuk, Coates, and Subramanian (2002), Bebchuk and Cohen (2005), Bebchuk, Cohen, and Ferrell (2009)
	insignificant	Ambrose and Megginson (1992) , Bhagat and Jefferis (1991), Comment and Schwert (1995); Coates (2000) and Daines and Klausner (2001) argue that the pre-bid pill is not important due to the "shadow pill"
Staggered board	negative	Pound (1987), Coates (2000), Bebchuk, Coates, and Subramanian (2002), Daines and Klausner (2001, 2004), Gompers, Ishii, and Metrick (2003), Frakes (2007), Bebchuk, Cohen, and Ferrell (2009), Bates, Becher, and Lemmon (2008), Ryngaert and Scholten (2010)
	insignificant	Mikkelson and Partch (1989), Bhagat and Jefferis (1991), Ambrose and Megginson (1992)
Limits to act by written consent and to call special meetings	negative	Bhagat and Jefferis (1991), Daines and Klausner (2001, 2004), Coates (2001), Gompers, Ishii, and Metrick (2003)
	insignificant	Bebchuk, Coates, and Subramanian (2003), Bebchuk, Cohen, and Ferrell (2009)
Limits to amend bylaws	negative	Coates (2001), Bebchuk, Cohen, and Ferrell (2009)
Directors' duties	negative	Daines and Klausner (2001)
Cumulative voting	positive	Bhagat and Brickley (1984)
	negative (with staggered board)	Daines and Klausner (2001), Bebchuk, Coates, and Subramanian (2002), Coates (2001)

Table VI (continued)

Weak Deterrents:

Blank check	negative	Ambrose and Megginson (1992)
	insignificant	Bebchuk, Cohen, and Ferrell (2009), Coates (2000)
Business combination law	insignificant	Comment and Schwert (1995), Daines and Klausner (2001), Bebchuk, Cohen, and Ferrell (2009)
Cash out (control share) law	insignificant	Comment and Schwert (1995)
Fair price	insignificant	Ambrose and Megginson (1992), Borokhovich, Brunarski, and Parrino (1997), Bebchuk, Cohen, and Ferrell (2009), Coates (2000)
Supermajority requirement for mergers	negative	Pound (1987), Borokhovich, Brunarski, and Parrino (1997), Bebchuk, Cohen, and Ferrell (2009)
	insignificant	Bhagat and Jefferis (1991) (combination of fair price and supermajority), Ambrose and Megginson (1992), Coates (2000)
Anti-greenmail	insignificant	Bebchuk and Kamar (2010), Ryngaert and Scholten (2010)

Compensation Arrangements:

Golden parachute	positive	Jensen and Zimmerman (1985), Lambert and Larcker (1985), Jensen (1988), Singh and Harianto (1989), Harris (1990), Cotter and Zenner (1994), Agrawal and Knoeber (1998), Kahan and Rock (2002), Machlin, Choe, and Miles (1993), Bebchuk, Coates, and Subramanian (2002), Bebchuk, Cohen, and Ferrell (2009)
Compensation plan	positive	Walkling and Long (1984), Bebchuk, Coates, and Subramanian (2002)

Table VII. Takeover Defenses and Acquisition Likelihood

Hazard function in which the dependent variable equals one if the firm is a target of completed merger, tender offer, or acquisition of majority interest during 1990-2004, and zero, otherwise. The sample includes 14,634 firm-years covered by IRRC Governance database with data available on COMPUSTAT and CRSP. Variable definitions are provided in the Appendix; provisions are defined in Section III. All models control for firm characteristics, industry and year fixed effects. Each regression is estimated using the Cox proportional hazard model, with standard errors estimated using Huber-White estimators adjusted for firm clustering. z-statistics are given in parentheses.

Variable	1	2	3	4	5	6	7
Deterrents and Compensation Arrangements							
Staggered board	-0.240**		-0.236**		-0.281**	-0.234**	-0.240**
	(-2.27)		(-2.32)		(-2.19)	(2.25)	(2.30)
Poison pill	0.046				-0.036	0.034	0.033
	(0.44)				(-0.29)	(0.33)	(0.32)
Limits to special meetings and written consent	0.255**	0.218*		0.169	0.278*	0.208	-0.070
	(1.98)	(1.75)		(1.36)	(1.84)	(1.64)	(-0.34)
Director's duties	-0.128	-0.064	-0.066	-0.070	-0.053	-0.041	-0.051
	(-0.68)	(-0.38)	(-0.39)	(-0.41)	(-0.23)	(-0.24)	(-0.30)
Limits to amend bylaws	-0.155	-0.199	-0.165		-0.416**	-0.488**	-0.190
	(-1.14)	(-1.48)	(-1.23)		(-2.34)	(-2.12)	(-1.40)
Cumulative vote	-0.042	-0.047	-0.047	-0.029	0.223	-0.037	-0.037
	(-0.28)	(-0.31)	(-0.31)	(-0.19)	(-0.92)	(-0.25)	(-0.25)
Golden parachute	0.450***	0.497***	0.473***	0.489***	0.524***	0.464***	0.464***
	(4.06)	(4.56)	(4.35)	(4.47)	(4.00)	(4.20)	(4.21)
Compensation plan	0.272**	0.272**	0.267**	0.273**	0.414***	0.27**	0.274**
	(2.42)	(2.44)	(2.40)	(2.45)	(3.10)	(2.42)	(2.45)

(continues)

Table VII (continued)

Variable	1	2	3	4	5	6	7
Provisions' Interactions							
Staggered board*Poison pill		-0.304***		-0.329***			
		(-2.93)		(-2.90)			
Limits to meetings and written consent*Poison pill			0.199				
			(1.48)				
Cumulative voting*Staggered board					-0.568		
					(-1.56)		
Limits to amend bylaws* Staggered board*Pill				0.133			
				(0.75)			
Limits to amend bylaws*Industry Market/Book						0.107*	
						(1.73)	
Limits to meetings and written consent* Industry Market/Book							0.10*
							(1.87)
Other governance provisions and weak deterrents							
Other provisions	-0.082	-0.038	-0.040	-0.038	-0.007	-0.042	-0.040
	(-1.54)	(-1.03)	(-1.07)	(-1.03)	(-0.15)	(-1.12)	(-1.07)
Fair Price	-0.156						
	(-1.21)						
Supermajority	-0.083						
	(-0.68)						
Antigreenmail	0.126						
	(0.88)						
Blank check	-0.033						
	(-0.23)						
Business combination law	0.111						
	(0.62)						
Cash out law	0.327						
	(1.12)						
Model chi-square	311	314	305	305	309	308	309
(*p*-value)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)

Table VIII
Individual Provisions and Takeover Premium: Prior Evidence

Provision	Effect on Takeover Likelihood	Source
Staggered board	insignificant	Pound (1987) (combination of staggered board and supermajority), Bebchuk, Coates, and Subramanian (2002)
Poison pill	positive	Comment and Schwert (1995)
Supermajority requirement for mergers	insignificant	Pound (1987) (combination of staggered board and supermajority), Bhagat and Jefferis (1991) (combination of fair price and supermajority)
Golden parachute	positive	Machlin, Choe, and Miles (1993) (the size of the parachute payment)
	insignificant	Lefanowicz, Robinson, and Smith (2000)
Cash out (control share) law	positive	Comment and Schwert (1995)
Fair price	insignificant	Bhagat and Jefferis (1991) (combination of fair price and supermajority)

Table IX. G-Index and Takeover Premiums

OLS estimates of the effects of the G-Index and individual provisions on takeover premiums. The dependent variable (takeover premium) is measured as market model abnormal stock return from 42 trading days prior to the merger announcement through the day of delisting or six months after the announcement, whichever is earlier. The sample consists of 461 completed mergers, tender offers, or acquisitions of majority interest announced during 1990-2004 with governance provisions data available on the IRRC. The information on merger announcements and deal characteristics is from the SDC Mergers & Acquisitions database. Variables are defined in the Appendix. All regressions include year fixed effects. *t*-statistics are provided in parentheses.

Variable	1	2	3	4
Provisions:				
G-Index	0.007			
	(1.12)			
Poison pill		0.078**		0.060
		(2.07)		(1.57)
Staggered board		-0.036		-0.037
		(-0.93)		(-0.97)
Limits to special meetings and written consent		-0.008		-0.011
		(-0.18)		(-0.25)
Director's duties		0.007		-0.006
		(0.10)		(-0.08)
Cumulative vote		-0.027		-0.015
		(-0.48)		(-0.26)
Limits to amend bylaws		0.029		0.020
		(0.54)		(0.38)
Cash out law		0.062		
		(0.58)		
Golden parachute			0.054	0.049
			(1.35)	(1.19)
Compensation plan			0.094**	0.085**
			(2.26)	(1.97)
Index of other provisions				-0.004
				(-0.31)

Table IX continued

Variable	1	2	3	4
Deal Characteristics:				
Hostile	0.063	0.039	0.027	0.021
	(0.71)	(0.40)	(0.28)	(0.21)
Tender Offer	0.022	0.009	0.010	0.007
	(0.46)	(0.17)	(0.19)	(0.14)
Multiple Bidders	0.095	0.124	0.129	0.132
	(1.11)	(1.36)	(1.43)	(1.44)
All Cash	0.149***	0.186***	0.177***	0.183***
	(3.47)	(3.97)	(3.82)	(3.91)
Firm Financial Characteristics:				
Size	-0.006	-0.010	-0.016	-0.016
	(-0.37)	(-0.61)	(-1.00)	(-0.94)
Sales Growth	0.031	0.053	0.057	0.058
	(0.63)	(0.98)	(1.07)	(1.07)
Liquidity	0.198*	0.172	0.191*	0.182
	(1.90)	(1.48)	(1.67)	(1.56)
Debt / Equity	-0.004	0.005	0.002	0.004
	(-0.33)	(0.38)	(0.18)	(0.36)
Market / Book	0.000	0.003	0.003	0.002
	(0.06)	(0.41)	(0.57)	(0.38)
Price / Earnings	0.000	0.000	0.000	0.000
	(0.81)	(0.93)	(1.00)	(0.92)
CAR (%)	-0.007***	-0.008***	-0.009***	-0.008***
	(-3.34)	(3.34)	(3.68)	(3.42)
Intercept	0.068	0.129	0.096	0.092
	(0.49)	(0.85)	(0.63)	(0.59)
Adjusted R^2	0.136	0.135	0.148	0.143

***, **, and * indicate significance at the 1%, 5%, and 10%, respectively, based on a two-tailed test.