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**THE EFFECTS OF GOVERNANCE PROVISIONS ON TAKEOVER  
VULNERABILITY AND MANAGERIAL ENTRENCHMENT**

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Tatyana Vladimirovna Sokolyk

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The thesis of Tatyana V. Sokolyk was reviewed and approved\* by the following:

William A. Kracaw  
David Sykes Professor of Finance  
Chair of the Department of Finance  
Thesis Co-Advisor  
Co-Chair of Committee

Laura Casares Field  
Associate Professor of Finance  
Thesis Co-Advisor  
Co-Chair of Committee

N. Edward Coulson  
Professor of Economics

David Haushalter  
Assistant Professor of Finance

\*Signatures are on file in the Graduate School

## ABSTRACT

Recent studies document that governance provisions reduce shareholder value and increase agency costs. Several studies use the index of 24 governance provisions (G-Index) as a measure of takeover protection and managerial entrenchment. However, prior studies of individual takeover defenses, included in the G-Index, provide mixed evidence as to their ability to deter takeovers. Furthermore, there is no empirical evidence that managers of firms with a high number of governance provisions are protected from the discipline of the takeover market or from the discipline imposed by the board of directors. This dissertation examines how governance provisions affect firms' takeover vulnerability and managerial entrenchment. Chapter 1 shows that the G-Index is not significant in explaining the likelihood of being acquired. However, some individual provisions exhibit strong but opposing effects on takeover probability. Grouping provisions that relate to takeover activity in a separate index, accounting for their directional effects, shows the significance of takeover defenses in predicting the takeover likelihood. Chapter 2 shows that the G-Index does not effectively measure managerial entrenchment. CEOs of firms with a high number of provisions are as likely to be replaced following value-reducing acquisitions as are CEOs of firms with a low number of provisions. However, the acquiring CEOs of firms with staggered boards are less likely to face external discipline imposed by the market for corporate control for making value-reducing acquisitions than are acquiring CEOs of firms with annually elected boards. This suggests that the staggered board indicator does proxy for managerial entrenchment. Finally, CEOs of firms less vulnerable to corporate takeovers are more likely to face discipline from internal governance (board of directors) than are CEOs of firms more vulnerable to takeovers. The main contribution of this dissertation to the existing academic literature is that it shows that the aggregate index of provisions does not measure either takeover protection or managerial entrenchment, and it suggests how researchers could use governance provisions to measure takeover vulnerability and managerial entrenchment.

## TABLE OF CONTENTS

LIST OF TABLES .....	vi
ACKNOWLEDGEMENTS .....	viii
INTRODUCTION .....	1
 Chapter 1 THE EFFECTS OF GOVERNANCE PROVISIONS ON TAKEOVER VULNERABILITY .....	3
1.1 Data Sources and Sample Description.....	6
1.2 G-Index and Acquisition Likelihood.....	9
1.2.1 Takeover Frequencies and Deal Characteristics of High and Low G-Index Firms.....	9
1.2.2 G-Index and Takeover Probability: Multivariate Analysis.....	11
1.2.2.1 Determinants of Acquisition Likelihood.....	12
1.2.2.2 The Logit Model.....	13
1.2.2.3 The Hazard Model.....	14
1.3 G-Index and Takeover Premia.....	18
1.4 The Effects of Individual G-Index Components on Takeover Likelihood and Premia.....	20
1.4.1 G-Index Sub-Indices.....	20
1.4.2 Individual G-Index Components.....	22
1.4.3 Does the Adoption of Provisions in Anticipation of a Takeover Drive the Results.....	27
1.4.4 The Effects of Individual G-Index Components on Takeover Premia.....	28
1.5 Conclusion.....	30
 Chapter 2 THE EFFECTS OF GOVERNANCE PROVISIONS ON MANAGERIAL ENTRENCHMENT.....	56
2.1 Sample Description: Acquiring Firms.....	60
2.1.1 Data Sources.....	60
2.1.2 Descriptive Statistics.....	61
2.1.2.1 Overall Sample.....	61
2.1.2.2 Differences in Bidder Announcement Returns and Deal Characteristics between Firms with Different Degrees of Managerial Power.....	63
2.2 CEO Turnover: Sample and Methodology.....	66
2.2.1 CEO Turnover Sample.....	66
2.2.2 Definition of CEO Turnover.....	67

2.2.3 Empirical Design.....	69
2.2.3.1 The Probability of Forced CEO Turnover.....	69
2.2.3.2 Internal versus External Discipline.....	73
2.3 CEO Turnover and Governance Provisions: Empirical Results.....	75
2.3.1 Differences between Firms with CEO Turnover and Firms without CEO Turnover.....	76
2.3.2 The Degree of Managerial Power and Turnover Frequency.....	79
2.3.3 Logit Estimates of the Probability of Forced CEO Turnover.....	80
2.3.4 External versus Internal Discipline.....	82
2.4 Conclusion.....	85
REFERENCES.....	105
Appendix: Variable Definitions.....	32
A.1 Firm Financial Characteristics and Industry Takeover Activity.....	32
A.2 Board Characteristics, Managerial and Blockholder Ownership.....	32
A.3 Governance Provisions .....	33

## LIST OF TABLES

Table 1-1: Distribution of Takeovers and Deal Values by Announcement Year.....	35
Table 1-2: Summary Statistics on G-Index Values by IRRC Publication Year and Industry.....	36
Table 1-3: Differences in G-Index Values between Target and Non-Target Firms, Friendly and Hostile Takeovers, Completed and Withdrawn Deals.....	37
Table 1-4: Takeover Frequencies and Deal Characteristics of High and Low G-Index Firms....	38
Table 1-5: Firm Financial Characteristics, Board Composition, and Ownership Structure.....	39
Table 1-6: G-Index and Acquisition Likelihood: Logit Model.....	41
Table 1-7: G-Index and Acquisition Likelihood: Hazard Model.....	42
Table 1-8: G-Index and Takeover Premia.....	44
Table 1-9: G-Index Sub-Indices and Acquisition Likelihood: Hazard Model.....	46
Table 1-10: G-Index Sub-Indices and Takeover Premia.....	47
Table 1-11: Takeover Defenses and Acquisition Likelihood: Summary of Prior Studies.....	48
Table 1-12: Individual Governance Provisions.....	50
Table 1-13: Takeover Defenses and Acquisition Likelihood.....	52
Table 1-14: Changes in the G-Index Values between the IRRC Publication Years.....	54
Table 1-15: Individual Provisions and Takeover Premia.....	55
Table 2-1: Sample Summary Statistics, Merger Deal Characteristics, and Bidder Announcement Returns.....	87
Table 2-2: Bidder Announcement Returns and Deal Characteristics for Different Degrees of Managerial Power Categories.....	89
Table 2-3: Distribution of CEO Turnover.....	91
Table 2-4: Differences in Firm, CEO, Governance, and Merger Deal Characteristics between Firms with CEO Turnover and Firms without CEO Turnover .....	92

Table 2-5: Managerial Power and Frequency of Forced CEO Turnover.....	95
Table 2-6: Logistic Regressions of the Probability of Forced CEO Turnover after the Merger or Acquisition – Total Sample.....	96
Table 2-7: Logistic Regressions of the Probability of External CEO Turnover after the Merger or Acquisition .....	99
Table 2-8: Logistic Regressions of the Probability of Internal CEO Turnover after the Merger or Acquisition .....	102

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## INTRODUCTION

The impact of corporate governance on monitoring and control of managerial behavior has been studied for several decades. Following a series of U.S. corporate scandals in the early 2000s, the issue of corporate governance has gained increased interest and importance. With the revelation of fraudulent practices that led to bankruptcies of large corporations, such as, Enron, Tyco, and WorldCom, the question of what types of governance mechanisms help to ensure corporate accountability and help to enhance shareholder wealth has become the focus of legislators, regulators, academicians, and shareholder rights activists.

This dissertation focuses on one aspect of corporate governance – governance provisions. These are rules that restrict shareholder rights and increase managerial power through takeover protection, limitations on voting rights and on other types of shareholder activism. Recent studies document that governance provisions decrease shareholder value and increase agency costs. A common presumption in current academic literature is that governance provisions are associated with managerial entrenchment and takeover protection. However, there is no empirical evidence that managers of firms that deploy these provisions are protected from the discipline imposed by other governance mechanisms, such as, the market for corporate control or the board of directors. This dissertation fills a missing gap in academic literature by examining whether governance provisions deter corporate takeovers or shield managers from the discipline imposed by the board of directors or the takeover market.

The dissertation is divided into two chapters. The first chapter examines the effects of governance provisions on takeover likelihood. The main findings are that some provisions have significant but opposing effects on takeover probability, that is, while some provisions decrease

the probability of being acquired, others increase it. Grouping provisions in the index, without accounting for their relative and directional effects on takeover likelihood, does not reveal the significance of these provisions in predicting the corporate takeover. This chapter provides the index of governance provisions that accounts for relative and directional effects of the provisions on takeover probability and effectively measures a firm's takeover vulnerability.

The second chapter investigates whether governance provisions are associated with managerial entrenchment. It examines whether managers of firms with a high number of provisions are less likely to be replaced following value-reducing corporate decisions than are managers of firms with a low number of provisions. Specifically, it studies CEO replacement by internal (board driven) and external (market for corporate control) governance in firms that engage in mergers and acquisitions. Results show that the aggregate number of provisions is not related to managerial protection from internal and external discipline of the board and the takeover market. This chapter documents which of the commonly used measures of managerial power proxy for managerial entrenchment.

## Chapter 1

### THE EFFECTS OF GOVERNANCE PROVISIONS ON TAKEOVER VULNERABILITY

The impact of anti-takeover provisions on firm value and takeover deterrence has been a subject of much study and debate for more than two decades. Recently, an index of corporate governance provisions (G-Index), developed by Gompers, Ishii, and Metrick (2003) (GIM) as a proxy for the balance of power between managers and shareholders, has become widely used as a measure of a firm's takeover protection.<sup>1</sup> Cremers and Nair (2005), for example, state that they “view this index as a measure of antitakeover protection” (page 2864). Masulis, Wang, and Xie (2006) argue that “the conflict of interest between managers and shareholders is more severe at firms with more ATPs or, equivalently, firms less vulnerable to takeovers” (page 3). Thus, a prevailing view shared by some researchers is that “larger values of the governance index G indicate that a firm is more insulated from takeovers” [page 8, Ferreira and Laux (2006); see also, Chava, Dierker, and Livdan (2004), Dittmar and Mahrt-Smith (2007)]. However, no study directly examines the relation between the G-Index and takeover probability.

Prior evidence regarding the effects of these same provisions on acquisition likelihood is, at best, mixed. Comment and Schwert (1995) conclude that poison pills and control share laws do not systematically deter takeovers but instead increase the bargaining power of target managers. On the other hand, Bebchuk, Coates, and Subramanian (2002) show that staggered

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<sup>1</sup> This index is also known as G, GIM Index, or index of anti-takeover provisions (ATPs). 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).

boards provide strong deterrence against takeovers, but do not increase the takeover premia received by target shareholders. In contrast, Machlin, Choe, and Miles (1993) document that golden parachutes have a positive effect on takeover probability, and the size of parachute payments is positively related to takeover premia. 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. Furthermore, Daines and Klausner (2001) argue that some defenses are redundant with poison pills, which all firms either have or can quickly adopt. Thus, these defenses provide no additional protection. Taken as a whole, prior evidence suggests that an index, such as the G-Index, which merely counts the number of provisions without accounting for their relative and directional effects on takeover probability, may be a poor measure of takeover deterrence.

This paper provides a comprehensive analysis of the relation between the G-Index and takeover activity. Using different methodologies and controlling for other governance characteristics, I do not find that the G-Index serves as an effective proxy for takeover deterrence. However, some individual G-Index components have significant effects on takeover probability. Thus, results show that a high G-Index value is not equivalent to a high degree of takeover protection, as firms that employ a small number of provisions with strong deterrent power are better protected from takeovers than firms that employ a high number of provisions with weak deterrent power. The important implication of these findings is that researchers, using the G-Index as an anti-takeover proxy, could misclassify firms.

To better measure firms' takeover vulnerability, I suggest an alternative proxy for takeover deterrence – *Takeover Index*. This index combines five provisions that have significant

effects on takeover probability, and it accounts for the directional (positive and negative) effects of these provisions on takeover likelihood. An out of sample test shows that *Takeover Index* effectively measures firms' takeover vulnerability.

In addition to takeover deterrence, I examine an alternative explanation to the deployment of anti-takeover provisions– the effects on the bargaining power of target managers. I do not find that the G-Index value affects the takeover premia received by target shareholders. However, when individual G-Index components are examined, poison pills and compensation plans are shown to increase takeover premia, while severance agreements have a negative effect on the size of takeover premia received by target shareholders.

This study contributes to the existing literature in several ways. First, I document that the G-Index does not measure the variation in firms' takeover vulnerability or takeover premia received by target shareholders. Second, this study identifies which of a wide set of governance provisions do relate to takeover likelihood and takeover premia. Finally, I provide an alternative measure of takeover vulnerability that accounts for relative and directional effects of various governance provisions on acquisition likelihood.

The remainder of this chapter is organized as follows. The next Section describes the data. Section 2 presents empirical tests on the effects of the G-Index on takeover likelihood. Section 3 examines whether the G-Index relates to takeover premia. The effects of the G-Index sub-indices and individual components are analyzed in Section 4. Section 5 concludes the chapter.

## 1.1 Data Sources and Sample Description

I investigate the association between the G-Index and takeover probability using data from the Investor Responsibility Research Center (IRRC) and the Securities Data Corporation (SDC). In this section I explain the sample construction and provide summary statistics on the employment of governance provisions across sample period, various industries and takeover sub-categories.

The primary sample consists of firms covered by the IRRC Governance database. IRRC provides data on the G-Index and individual takeover defenses and other corporate governance provisions primarily for S&P 1,500 and some other large public firms with high institutional ownership. The data are available for 1990, 1993, 1995, 1998, 2000, 2002, and 2004. Following Gompers, Ishii, and Metrick (2003), I fill each missing year with data from the preceding publication year.<sup>2</sup> Consistent with previous studies, firms with dual class common stock are omitted from the analysis since their ownership and voting structures are quite different from those of the single-class firms.<sup>3</sup>

Using the SDC Mergers and Acquisitions (M&A) 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 subjects to mergers, tender offers, or acquisitions of at least 50 percent 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

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<sup>2</sup> The alternative methods of filling missing data (i.e., from the following publication year, from the publication year closest to the missing year) or dropping missing years from the analysis do not change the results presented throughout this study.

<sup>3</sup> For more information on the IRRC data, see Gompers, Ishii, and Metrick (2003).

years prior to the event year.<sup>4</sup> 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 1-1 presents the annual distribution of takeovers in the sample. The trend in takeover frequency is similar to that documented by Masulis, Wang, and Xie (2006). 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. Table 1-1 also provides annual mean and median deal values as reported by SDC. 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. In contrast, Masulis et al. (2006) report a mean (median) deal value of 626 (108) million in a broader sample of mergers and acquisitions over roughly the same time period.

Table 1-2 presents the distribution of G-Index values by IRRC publication year and across different industries. The mean G-Index is 9.2 for the overall sample, and, as shown in Panel A, the mean G-Index value does not change much throughout the sample period. The median equals nine in every publication year. The G-Index values range from 2 to 19, and the standard deviation ranges from 2.5 to 2.9 across publication years. Panel B shows that firms' employment of governance provisions does not vary much across the 12 Fama-French industry groups. There is some, albeit very weak, evidence that industries with higher takeover activity tend to have slightly higher G-Index values.

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<sup>4</sup> 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.



If governance provisions prevent takeovers or obstruct the takeover process, we should see a difference in the employment of provisions between target and non-target firms and across different deal categories. Table 1-3 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. Specifically, for firms covered by IRRC in 1990, I identify which of them were targets of corporate takeovers during 1990-1992 and calculate average G-Index values for target and non-target firms. The same procedure is repeated for firms in other IRRC publication years using M&As data for years between the IRRC publications. As shown in Panel A, targets of corporate takeovers typically employ a smaller number of provisions than non-targets (with the exception of 1998 and 1999); however, the difference is not statistically significant in any year. In an 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 1-3 examines the differences in provision use among various deal categories. The average G-Index of completed deals is not significantly different from that of withdrawn deals. In contrast, targets of hostile deals employ 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: 10 versus 9 (not shown). These differences are statistically significant at the five percent level. This evidence is consistent with Bebchuk, Coates, and Subramanian (2002) and Daines and Klausner (2004) who maintain that anti-takeover provisions are important elements of hostile battles. However, because hostile takeovers are characterized by a high failure rate (68%), it is not clear whether takeover defenses impede the completion of hostile bids. On one hand, the difference in mean G-Index values between completed and withdrawn hostile

takeovers is not statistically significant. On the other hand, a small number of hostile takeovers during the sample time period obstructs the establishment of any definite conclusions.

The descriptive analysis in this section suggests that, while there is cross-sectional variation in the employment of governance provisions, there is generally not much variation in the number of provisions used across the sample time period, among different industries, or various takeover sub-categories. The only significant difference is documented between targets of hostile and friendly takeovers: targets of hostile takeovers employ a larger number of governance provisions than do targets of friendly deals.

## **1.2 G-Index and Acquisition Likelihood**

This section analyzes the relation between G-Index values and takeover likelihood. In particular, I first examine takeover frequencies and merger deal characteristics of high and low G-Index firms. To account for variation in firm characteristics, governance structure, and business conditions that might affect the takeover probability, I then estimate the multivariate logit model of acquisition likelihood. Finally, to account for the fact that some takeovers occur outside of the sample period, I reestimate the relation between the G-Index and takeover probability using hazard model analysis.

### **1.2.1 Takeover Frequencies and Deal Characteristics of High and Low G-Index Firms**

Gompers, Ishii, and Metrick (2003) characterize the G-Index as a measure of shareholder rights. They examine the relation between G-Index values and firm performance and compare two “extreme” portfolios: firms in the lowest and highest G-Index deciles. The authors conclude that high G-Index firms significantly underperform low G-Index firms in terms of accounting

and stock measures of performance and suggest that high G-Index firms may suffer from agency problems. The question examined in this study is whether governance provisions entrench managers by deterring corporate takeovers. Thus, if the G-Index proxies for takeover deterrence, the difference in takeover frequency should be most apparent between high and low G-Index firms. In this case, it is expected that high G-Index firms are acquired less often than low G-Index firms. Furthermore, if the G-Index proxies for managerial resistance to takeovers, there should be a difference in deal characteristics and outcomes between high and low G-Index firms. We may expect that offers to high G-Index firms are more likely to be made directly to shareholders, involve multiple bidders, hostility, and are less likely to be completed than offers to low G-Index firms.

Table 1-4 presents takeover frequencies and merger deal characteristics of high and low G-Index firms. *High* G-Index group are firms with G-Index values greater than 11, while *Low* G-Index category includes firms with G-Index values below seven. The breakpoints for *High* and *Low* are based on G-Index quintile rankings for the overall sample.<sup>5</sup> As shown in Panel A of Table 1-4, 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 significant only in two sub-periods. However, 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 1998-1999.

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<sup>5</sup> Following GIM's classification of "Democracy" and "Dictatorship" firms (based on lowest and highest deciles) does not change the results. However, each decile is allocated only a small number of takeover targets, which weakens the statistical power of the tests. The results remain qualitatively similar if I change the breakpoints in each IRRC year.

Panel B of Table 1-4 provides evidence on 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 five percent). The differences between high and low G-Index firms in the fraction of completed takeovers, of deals with multiple bidders, and of tender offers are not statistically significant.

In general, my findings for the overall sample are consistent with those of Core, Guay, and Rusticus (2006), who document that high G-Index firms are acquired at about the same rate as low G-Index firms. They interpret this evidence as “surprising if one views the G-Index as an antitakeover index” (page 678).<sup>6</sup>

### **1.2.2 G-Index and Takeover Probability: Multivariate Analysis**

Contrary to the results of Core et al.’s (2006) univariate study, Cremers, Nair, and John (2005) document in a multivariate setting that G-Index value and takeover probability are negatively related, suggesting that firms with a high number of governance provisions are less likely to be acquired than firms with a low number of provisions. In an attempt to reconcile the different results of these studies, I examine the effects of the G-Index on takeover likelihood, controlling for firm financial characteristics, board and ownership structure, and industry takeover activity and employing two different methodologies: logit and hazard models.

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<sup>6</sup> Core et al. (2006) use a slightly different approach. They define the incidence of takeovers based on the CRSP delisting codes and examine the annualized frequency of takeovers in Democracy (G-Index  $\leq 5$ ) and Dictatorship (G-Index  $\geq 14$ ) portfolios. They only distinguish among deals based on different payment methods.

### **1.2.2.1 Determinants of Acquisition Likelihood**

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. Ambrose and Megginson (1992), Song and Walking (1993), Shivdasani (1993), and Field and Karpoff (2002) also examine the effects of various governance characteristics on acquisition likelihood. Following these studies, I control for firm financial characteristics, board structure and composition, ownership by firm managers and outside blockholders, and industry takeover activity in the analysis of the relation between the G-Index and takeover probability. Accounting and firm performance measures are collected from CRSP and COMPUSTAT. Information on board structure and managerial ownership is from IRRC Directors database and covers 1996-2005. Blockholder data is from the study by Dlugosz, Fahlenbrach, Gompers, and Metrick (2006) and is available from WRDS for the time period 1996-2001. The list of variables and their definitions are provided in the Appendix.

Table 1-5 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 percent, book to market ratio of 2.5, and annual sales growth rate of 15 percent. On average, firms in the sample outperformed the CRSP value-weighted index by 2.14% over three years prior to the event year. In a subsample of firms with governance and ownership data, an average firm has nine board members with almost 65 percent of the board being composed of outsiders. In 53 percent of the firms, the CEO also serves as chairman of the board. On average, the CEO owns 2.17%, while outside blockholders own almost 17 percent of the firm's common stock.

Panel B presents Pearson correlations for the G-Index, takeover indicator, and control variables. The G-Index is positively correlated with firm size, board size, the proportion of

independent directors, and with the CEO serving as chairman of the board. This evidence is consistent with findings by Gillan, Hartzell, and Starks (2006). Consistent with Gompers, Ishii, and Metrick (2003), the G-Index is negatively correlated with sales growth, liquidity, and stock performance. It is also negatively correlated with managerial ownership, defined as the percentage of shares owned by the CEO and the directors, and with the ownership by outside blockholders. The G-Index is not significantly correlated with the variable that indicates whether or not the firm becomes a takeover target and is negatively correlated with industry takeover activity.

### **1.2.2.2 The Logit Model**

Similar to prior studies, including Palepu (1986), Comment and Schwert (1995), and Field and Karpoff (2002), I use logistic probability model to examine the likelihood that a given firm is the target of a merger or acquisition during 1990-2004. The regression model specified is

$$P_{i,t} = 1 / [1 + \exp(-\beta X_{it})], \quad (1.1)$$

where  $P_{i,t}$  is the probability that firm  $i$  is the target of a takeover bid during time  $t$  ( $t=1990-2004$ );  $X_{it}$  is a vector of explanatory and control variables that measure various characteristics for firm  $i$  at time  $t$ ;  $\beta$  is the unknown parameter vector.

Since governance and ownership variables are not available for the full sample of firms, I model acquisition likelihood using three sets of control variables. The results are presented in Table 1-6. Model 1 controls for firm performance measures and financial characteristics and estimates the takeover probability for the full sample of firms. Model 2 also incorporates variables that reflect board structure and composition. In addition to the controls used in

Model 2, Model 3 also controls for managerial and outside blockholder ownership. All three models test for the effect of the G-Index value on acquisition likelihood.

The results in Table 1-6 do not provide support for the hypothesis that an aggregate index of governance provisions is a significant determinant of takeover probability. The G-Index coefficient is insignificant in all models. The results for the control variables are generally in line with those documented by Comment and Schwert (1995), Ambrose and Megginson (1992), and Song and Walking (1993), who do not find significance for most of these variables. In unreported tests, I replace the G-Index variable with indicator variables for G-Index values below and above the sample median and in the lowest and highest G-Index quartiles. The G-Index indicator remains insignificant in every specification.

### **1.2.2.3 The Hazard Model**

Although logit models are frequently used in finance to estimate the probability of an event, Shumway (2001) argues that single period logit models produce biased and inconsistent estimates when dealing with multiple-period data. More specifically, he explains that single period logits ignore the fact that firms change through time. In contrast, survival functions (e.g., hazard functions) follow the firm through time and observe at which point in time it experiences an event of interest. Additionally, survival models incorporate data truncation, that is, if some events are unobserved because they occur beyond the end of the sample period, they are taken into consideration through right censoring. Shumway (2001) suggests that survival models generally produce more consistent and unbiased probability estimates and are particularly useful to estimate the takeover probability. Thus, to check the robustness of results from the logit

model estimation, I use the survival analysis methodology to estimate the impact of the G-Index on takeover likelihood.

Different types of models can be used for survival analysis. The Cox (1972) proportional hazard model is the most popular choice because it does not assume a particular distribution for the probability of survival times; thus, it does not require the exact specification of the baseline hazard function. It is a semiparametric model that employs a maximum partial likelihood estimation method and has the following form:

$$h_i(t)=h_0(t)*\exp(X_i'\beta), \quad (1.2)$$

where  $h_i(t)$  is the time- $t$  hazard of firm  $i$  ( $t=1990-2004$ );  $h_0(t)$  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  $\beta$  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 calculated to assess the economic significance of a given variable. Independent variables include the same variables used in the logit model and also firm age, defined as the length of time (in years) from the first CRSP trading date to the event year. The average age for sample firms is 26 years. Firm age is used to control for left-truncation. Left-truncation occurs when subjects existed but were not observed prior to the start of the sample period. Right censoring accounts for the fact that some sample firms are acquired after the end of the sample period.

I perform several sets of tests, each using a different set of independent variables. Table 1-7 presents the results. Model 1 examines the relation between the G-Index and takeover



hazard rate, controlling for firm financial characteristics and industry takeover activity. Model 2 performs the analysis for a sub sample of firms with governance data available. Consistent with the analysis in the previous sections, the effect of the G-Index on takeover probability is statistically insignificant.

I then test whether the protective power of governance provisions varies depending on firm performance and governance characteristics. Several studies, including Jensen (1988), Scharfstein (1988), and Weisbach (1993) suggest that takeovers occur in part to replace managers who are not maximizing shareholder wealth. Thus, poorly performing managers are more likely to benefit from the employment of governance provisions. Model 3 in Table 1-7 adds an interaction term between the G-Index and firm performance to test whether poorly performing firms that employ a high number of governance provisions are less likely to be acquired than poorly performing firms that employ a small number of provisions. The coefficients on the G-Index and the interactive term are statistically insignificant. 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.

Another possibility is that the relation between the G-Index and takeover probability is sensitive to the presence or absence of certain monitoring and control mechanisms. For example, managers with a high degree of internal control (i.e., the ones that serve a dual role of the CEO and chairman of the board, or have a large fraction of insiders on board) are more likely to use the defenses to strengthen their power and resist takeovers. Alternatively, Daines and Klausner (2001) argue that high managerial ownership and takeover defenses are substitutes, as increased managerial ownership provides additional control and takeover protection [see Song and Walkling (1993)]. In this case, while governance provisions may be powerful takeover

deterrents for firms with low managerial ownership, they may provide no additional protection for firms with high managerial ownership. Additionally, blockholder ownership may influence the effectiveness of takeover defenses. Schleifer and Vishny (1986) argue that large blockholders can effectively monitor top managers. Consistent with blockholders performing monitoring roles, Shivdasani (1993) finds that ownership by unaffiliated blockholders increases the likelihood of hostile takeover attempt. In this case, the presence of outside blockholders may neutralize the negative effects of anti-takeover provisions on takeover probability. On the other hand, managers may use the defenses to counteract the increased monitoring by blockholders.

To examine whether the relation between the G-Index and takeover probability varies depending on other governance characteristics of the firm, I run a set of regressions with interaction terms between the G-Index and other governance variables. The results of these regressions are presented in models 4 through 8. The only interactive term that is statistically (positive) significant ( $p\text{-value} < 0.10$ ) is the G-Index\*Duality. I compute the G-Index parameter estimate for firms that combine the roles of the CEO and the chairman of the board by adding the coefficient on the G-Index to coefficient on G-Index\*Duality, and find that it is insignificant.

Results in Table 1-7 do not change if instead of continuous measures of the G-Index, managerial and blockholder ownership, and board independence, I use indicator variables for G-Index values above sample median or in the highest quartile of the sample; variables that indicate 5% or greater ownership by managers and blockholders; and variable that indicates a majority of independent directors. Results remain the same if I replace managerial ownership with the ownership by the CEO and by all directors, other than the CEO; and if I distinguish between affiliated and unaffiliated blockholders.

Taken together, these findings are consistent with my previous analyses and provide no evidence that the G-Index effectively measures firm takeover vulnerability. These results are in line with Core et al.'s (2006) findings that there is no systematic difference in takeover rates between high and low G-Index firms.

### **1.3 G-Index and Takeover Premia**

In this section I examine an alternative explanation to the use of takeover defenses – the shareholder interest hypothesis. Specifically, I investigate whether the aggregate index of governance provisions helps to explain the variation in takeover premia received by target shareholders.

Prior literature suggests that takeover defenses can enhance the bargaining position of target firms. For example, DeAngelo and Rice (1983) suggest that takeover defenses can benefit shareholders by solving a rush-to-tender problem and by forcing bidders to negotiate directly with firm managers. Alternatively, a moral hazard problem may exist, whereby managers settle for a lower takeover premium in order to collect parachute payments. However, Machlin, Choe, and Miles (1993) find that the size of parachute payments has a positive effect on takeover premium. Comment and Schwert (1995) find that firms protected by poison pills and control share laws receive higher takeover premia. Cotter, Shivdasani, and Zenner (1997) document that targets with poison pills and majority independent directors receive higher takeover premia and suggest that independent boards are more likely to use resistance strategies to enhance shareholder wealth rather than to entrench target managers. In contrast, Field and Karpoff (2002) do not find that the presence of a takeover defense has a significant effect on takeover premium for initial public offerings.

Table 1-8 presents the results of the relation between the G-Index and takeover premia. Similar to Field and Karpoff (2002), the takeover premium is measured as the 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 market model parameters for CRSP value-weighted index are estimated over 255 days, ending 46 trading days prior to the merger announcement. The average market-adjusted premium received by target shareholders is 31 percent. Independent variables in model 1 include the G-Index, firm performance measures, and merger deal characteristics used in previous studies to explain the variation in takeover premia [see, for example, Comment and Schwert (1995), Field and Karpoff (2002)]. Model 2 examines whether the relation between the G-Index and takeover premia changes when controls for other governance characteristics are introduced. Model 3 adds interaction terms between the G-Index and board and ownership variables to test whether firms with certain governance characteristics are more likely to use takeover defenses to increase the takeover premia. Dummy variables for each year are included in all regressions, but are not reported in the table.

Results indicate that the G-Index is not significant in explaining the variation in takeover premia in any specification. In model 1, the only significant variables are the prior three-year stock return, three-year average liquidity, and all-cash indicator. 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 premia than firms with stronger stock performance. Consistent with Comment and Schwert (1995), all-cash transactions are associated with higher takeover premia. Additionally, targets with more liquid assets receive higher takeover premia. Out of four governance variables analyzed in model 2, only ownership by outside blockholders is significantly positive ( $p\text{-value} < 0.10$ ), consistent with the idea that

blockholders use their bargaining power to increase the takeover premia. None of the interaction terms between the G-Index and other governance variables are significant in model 3.

This analysis does not provide any evidence that the G-Index measures the bargaining power of target management. Results do not provide support for the hypothesis that target firms with higher G-Index values receive higher takeover premia. At the most, we can conclude that governance provisions do not harm target shareholders.

#### **1.4 The Effects of Individual G-Index Components on Takeover Likelihood and Premia**

Results in the previous sections provide no evidence that during 1990-2004 the number of governance provisions employed by a given firm affected its takeover likelihood or the size of takeover premia received by target shareholders. These findings raise the following two questions: 1) Do governance provisions in general have no effect on acquisition likelihood and takeover premia? or 2) Does the G-Index not capture the relation between the governance provisions and takeover activity because of the way it is constructed? In this section, I examine these questions by analyzing individual components of the G-Index and various sub-groupings. Specifically, I investigate whether some subsets of the G-Index can predict the takeover probability and the size of takeover premia received by target shareholders.

##### **1.4.1 G-Index Sub-Indices**

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 any of the 24 components negatively impacts the acquisition likelihood. However, provisions may serve different purposes and offer differing degrees of takeover protection. According to Gompers, Ishii, and Metrick

(2003), four provisions (blank check, staggered board, limits to call special meetings, and limits to act by written consent) slow down and obstruct hostile takeovers and are combined in their “Delay” group. Compensation plans, golden parachutes, severance agreements, limits on director liability, and director indemnification contracts and provisions protect managers and directors against job-related liabilities or compensate them following a change in control (Protection group). Other provisions include anti-takeover state laws, limitations on shareholder rights and voting power. Gompers et al. (2003) acknowledge that the G-Index does not reflect the relative and directional effects of different provisions on firm value, but the impact on the balance of power between managers and shareholders is all that matters for the index construction.

Extending Gompers et al.’s (2003) study, Bebchuk, Cohen, and Ferrell (2005) analyze the relative effects of individual provisions on firm value. They identify six provisions (staggered boards, poison pills, supermajority requirements for mergers, golden parachutes, and limits to amend charters and bylaws) that drive the negative correlation between the G-Index and firm value and combine them to an index (BCF-Index). Masulis, Wang and Xei (2006) use BCF-Index as alternative measures of firm takeover vulnerability. Cremers and Nair (2005) create an “alternative takeover index”, ATI, which includes only three provisions that they view as critical to takeovers and closely mimics Gompers et al.’s (2003) Delay group. However, there is no evidence that these sub-indices explain the variation in takeover activity.

Table 1-9 examines the effects of BCF-Index, Delay, and Protection sub-indices on takeover likelihood and shows that, in contrast to takeover deterrence hypothesis, the coefficients on all three sub-indices are actually positive. Moreover, the coefficient for the Protection sub-index is statistically significant. The positive coefficient on the Protection sub-index is

consistent with the idea that managers who are compensated following a change in control are less likely to resist takeovers. Table 1-10 shows that all three sub-indices are insignificant in explaining the variation in takeover premia.

Analysis of G-Index sub-indices does not provide any evidence that these sub-groupings measure takeover deterrence. In contrast, provisions in the Protection group are associated with higher takeover probability. None of the sub-groupings have statistically significant effect on takeover premia.

#### **1.4.2 Individual G-Index Components**

I continue the analysis by examining individual G-Index components. Governance provisions 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. First, the G-Index assigns an equal weight to each provision, regardless of its relative deterrent power. In contrast, prior literature suggests that not all provisions are equally effective. Table 1-11 summarizes the results of prior studies that examine individual takeover defenses, and the Appendix describes each provision. For example, Ambrose and Megginson (1992) examine a set of seven provisions and conclude that only blank checks have a negative effect on takeover likelihood. More recently, Daines and Klausner (2001) and Bebchuk, Coates, and Subramanian (2002) suggest that a combination of staggered board and poison pill serves as the most powerful modern anti-takeover mechanism. Furthermore, Daines and Klausner (2002) argue that since all firms implicitly have poison pills, “some common ATPs [anti-takeover provisions] are redundant with pills and therefore provide no additional protection” (page 86). Bebchuk, Cohen, and Ferrell (2005) suggest that some provisions (e.g., business combination laws, blank check preferred

stock, fair price provisions) have become irrelevant. Overall, the evidence in these studies suggests that combining provisions without accounting for their relative effects on takeover activity may introduce noise to the G-Index as an anti-takeover measure.

Another possible reason that the G-Index does not reveal the significant effects of governance provisions is that provisions may have competing effects on takeover probability. Machlin, Choe, and Miles (1993) document that, in contrast to takeover deterrence, golden parachutes have a positive effect on takeover likelihood. Similarly, Bebchuk et al. (2002) suggest that golden parachutes and compensation plans may have a positive impact on takeover probability. If some provisions have positive and others have negative effects on takeover probability, when combined, the negative effects may be diluted or counteracted by positive, leaving no significant explanatory power to the index itself. Thus, depending on the effectiveness and the direction of the relation between the G-Index components and takeover probability, a high G-Index value may represent a strong or a weak takeover protection.

Given that prior literature provides mixed evidence regarding the deterrent effects of anti-takeover provisions, I analyze which of a wide range of governance provisions are significant determinants of takeover probability and takeover premia received by acquired shareholders. Gompers, Ishii, and Metrick (2003) argue that it is difficult to assess the significance of individual provisions because of multicollinearity in the provision use. Thus, I follow Bebchuk, Cohen, and Ferrell's (2005) methodology to identify the G-Index components that are likely to have significant effects on takeover probability and takeover premia.<sup>7</sup> Specifically, I first form a list of provisions that, based on prior evidence, are likely to have significant effects on takeover

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<sup>7</sup> Bebchuk, Cohen, and Ferrell (2005) first form a list of provisions that, based on prior evidence and analysis, are likely to have significant negative effects on firm value. The authors then confirm the results by running a series of regressions testing the relation between each provision and firm value. I employ a similar approach, but instead of examining the effects on firm value, I examine the effects of G-Index components on takeover likelihood and takeover premia.



probability and then run a series of regressions examining the provisions individually and in combination.

Table 1-12 provides summary statistics on governance provisions. Panel A demonstrates that (1) the use of most anti-takeover provisions is widely spread across firms, and (2) the use of some provisions has increased, while the use of others has decreased during 1990-2004.<sup>8</sup> Panel B shows that some provisions are frequently employed in combination. Panel C presents pairwise estimates of the tetrachoric correlations in the use of provisions.<sup>9</sup>

To assess the effects of these provisions on a firm's risk of being acquired, the G-Index in model 1 of Table 1-7 is replaced with 13 dummy variables for different G-Index components. Since Daines and Klausner (2001) argue that a combination of limits to act by written consent and to call a special meeting provides a strong takeover protection, I include a variable that measures the presence of both of these provisions (*Limits on Special Meetings & Written Consent*), instead of examining these provisions separately. The impact of poison pills and staggered boards on takeover probability is examined separately. Daines and Klausner (2001) argue that the presence of a poison pill at any given point in time is irrelevant since any firm can adopt it without shareholder approval. In contrast, Bebchuk et al. (2005) assert that the presence of a poison pill prior to takeover attempt signals that a firm is ready to resist an unfriendly bidder.

In this analysis, I divide my sample time period into two groups. Results for a subsample of 1990-1999 firms are presented in Panel A, Table 1-13. Contrary to the insignificant effect of the aggregate G-Index on takeover probability, some individual G-Index components have significant effects on a firm's risk of being acquired. Overall, these results support prior

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<sup>8</sup> The trend is apparent prior to 1998 and is unlikely to be due to the inclusion of smaller firms in 1998.

<sup>9</sup> Tetrachoric correlations assume a latent bivariate normal distribution for each pair of variables.

findings and implications that takeover defenses have opposing effects on takeover probability. Additionally, this analysis reconciles the conflicting evidence from previous studies as to which set of provisions has the strongest impact on firm takeover vulnerability and identifies which of a wide range of provisions are significant determinants of takeover likelihood.

Consistent with argument by Daines and Klausner (2001), staggered boards and limitations on directors' liability have strong deterrent power. Supporting Bebchuk et al.'s (2002) statements and Choe et al.'s (1993) findings, golden parachutes and compensation plans have a strong positive effect on the takeover hazard rate. Similar to Comment and Schwert (1995), poison pills are not significant predictors of takeover vulnerability. Consistent with Bebchuk et al. (2005) and Daines and Klausner (2001), blank check preferred stock is not a significant determinant of takeover vulnerability. However, fair price provisions still exhibit strong deterrent power. Finally, contrary to prior expectations, limits to act by written consent and to call a special meeting and business combination laws appear to have a positive effect (significant at 5% and 10%, respectively) on takeover likelihood. This result is counter-intuitive and is not supported by economic evidence or analysis.

To make sure that the results are not driven by high correlations in provision use, I examine the effect of each provision individually, controlling for firm characteristics and industry takeover activity. The results for all provisions, except limitations to act by written consent and to call a special meeting, are similar to the ones presented in Panel A, Table 1-13 (not reported). The limits to act by written consent and to call a special meeting are no longer significant. The business combination laws still have a positive effect. However, as shown in Table 1-12, almost 90 percent of the firms are subject to business combination laws during the sample time period. This wide coverage may be driving the apparent positive effect on takeover

probability. Since there is no economic reason or strong statistical evidence that would explain the positive effects of limits to act and call special meetings and business combination laws, I do not view them as significant determinants of takeover probability. I also run a series of regressions that include the rest of the G-Index components individually to confirm that provisions that have not received as much scholarly attention but have a significant impact on takeover activity are not excluded from the analysis. This analysis provides no evidence that provisions other than the ones analyzed in Table 1-13 should be considered as significant determinants of takeover probability (the results are not reported but available upon request).

Results presented in Panel A, Table 1-13 suggest that the G-Index construction does not reveal the significant magnitude of the provisions. Provisions that are unlikely to have any effect on takeover likelihood (e.g., secret ballot, severance agreements) are given as much weight as provisions with strong deterrent power (e.g., staggered board), introducing noise to the G-Index as an anti-takeover measure. Furthermore, since the G-Index combines the provisions without accounting for their directional effects on takeover likelihood, the negative effects are diluted or counteracted by positive, leaving no significant explanatory power to the index itself. Thus, depending on the effectiveness and the direction of the relation between the G-Index components and takeover activity, a high G-Index may represent a strong or weak power in regards to takeover deterrence.

A better way to group the anti-takeover provisions is an index that combines only the provisions with significant effects on takeover probability and accounts for different directional effects of various provisions on takeover likelihood. Thus, I construct a *Takeover Index* that can be used as a proxy for a firm's takeover vulnerability. This index combines only the significant determinants of takeover probability. Since the purpose is to measure takeover protection, one

point is added for the presence of staggered board, limits on directors' liability, and fair price provisions, and one point is subtracted for the presence of golden parachutes and compensation plans. Thus, the value of the *Takeover Index* can range from negative two to positive three, with a higher number representing greater takeover protection. Panel B in Table 1-13 presents an out of sample test of the effect of this index on takeover probability. The takeover hazard rate is estimated for the sample of firms during 2000-2004. As previously, the G-Index is not significant in explaining the takeover probability of firms during 2000-2004 (the results are not reported); however, the *Takeover Index* is a significant determinant of a firm's takeover vulnerability.

#### **1.4.3 Does the Adoption of Provisions in Anticipation of a Takeover Drive the Results**

Comment and Schwert (1995) point out that if managers tend to load up on provisions shortly before a takeover, the negative effects of the defenses may not be apparent. If this is a wide-spread practice, takeover defenses could appear to cause takeovers. Consistent with this argument, Comment and Schwert (1995) find that firms adopt poison pills in anticipation of a forthcoming takeover. In contrast, Machlin, Choe, and Miles (1993) do not find that firms adopt golden parachutes as a response to impending takeover activity.

Along similar lines, it could be argued that the above-documented insignificant effects of the G-Index and its sub-indices and positive effects of the *Protection* sub-index and G-Index components on takeover likelihood are due to managers adopting these defenses in response to impending takeover activity. However, due to the infrequent updates of the IRRC data, the statistical results of this study are unlikely to be affected by this issue (i.e., for most firms, there is a time gap between the dates when the employment of provisions was recorded and when the

takeover occurred). Nevertheless, to make sure that the above-documented results are not driven by the adoption of these defenses shortly prior to receiving takeover bids, I address this possibility by examining the changes in the G-Index between the publication years and the effects of the lagged values of the G-Index and its components on the takeover hazard rate.

If firms that become takeover targets are adopting the provisions in anticipation of a forthcoming takeover and this practice drives the results, then we should see a different pattern in G-Index changes for target versus non-target firms. Panels A and B of Table 1-14 show that there is no consistent pattern in G-Index changes between target and non-target categories. Similar to the findings by Hafford, Mansi, and Maxwell (2006), around 60 percent of the firms (both targets and non-targets) do not change the number of provisions they employ (or possibly they drop one provision and add another) from one publication year to the next. Most changes (both increases and decreases) are associated with one provision (not shown). Furthermore, Panel C shows that when provisions' variables are replaced with lagged values, thus, allowing at least a two year lag between the recording of the provision variable and the takeover date, the significance and signs of the coefficient estimates are similar to previous findings. These results confirm that the effects documented in previous sections are not driven by firms' loading up on provisions shortly prior to a forthcoming takeover.

#### **1.4.4 The Effects of Individual G-Index Components on Takeover Premia**

To investigate the effects of individual provisions on takeover premia, the G-Index in Table 1-8 is replaced with three dummy variables that equal one if a given provision is present in a firm's corporate structure, and zero otherwise. The provisions analyzed include poison pills, compensation plans, and severance agreements. The first two provisions are included because of

prior economic evidence, and the severance agreements are identified as potential determinants of takeover premia based on the statistical analysis.

The results are presented in Table 1-15. Consistent with findings documented by Comment and Schwert (1995), the employment of poison pills is associated with an added premium of six percent (significant at 10%). Since IRRC data are only available on a biannual and sometimes triennial basis, the significance of poison pills is likely to be underestimated because firms can and do adopt them right before or during the takeover negotiations. Similarly, compensation plans are associated with a nine percent higher takeover premia (significant at 5%). This finding has not been documented previously, but is not surprising. Managers with compensation plans have a vested interest in higher takeover premia because they can exercise their options at a higher price.

Contrary to the positive effects of poison pills and compensation plans, severance agreements have a negative effect on takeover premia (significant at 1%). IRRC defines severance agreements as protection arrangements that are not contingent upon a change in control. These arrangements do not affect the managerial compensation, regardless what is the outcome of the takeover bid. Furthermore, sample firms employ severance agreements infrequently (8% for the overall sample). When severance agreements are excluded from the analysis, the economic and statistical significance of the other variables, including poison pills and compensation plans, remain the same (the results are not reported but available upon request).

## 1.5 Conclusion

The G-Index of corporate governance provisions is commonly used in finance literature as a proxy for takeover deterrence. According to this view, a higher number of governance provisions is associated with a higher degree of takeover protection. Yet, no study directly examines the effect of the G-Index value on acquisition likelihood. In contrast, prior literature that examines individual takeover defenses that comprise the G-Index does not find significant takeover deterrence effects for most of these provisions. In fact, the employment of some provisions is associated with higher takeover premia rather than takeover deterrence. These prior findings cast doubts on the G-Index being an effective proxy for takeover protection.

This paper provides a comprehensive analysis of the G-Index and its effects on acquisition likelihood and on takeover premia. I examine the managerial entrenchment (takeover deterrence) and shareholder interest (increase in takeover premia) hypotheses associated with the employment of governance provisions. Results show that, contrary to the assumptions of several recent studies, the aggregate G-Index has no explanatory power in predicting the takeover probability. The G-Index is also insignificant in explaining the variation in takeover premia received by target shareholders. However, some individual G-Index components exhibit strong but competing effects on takeover likelihood. Specifically, staggered boards, fair price provisions, and limitations on directors' liability have strong deterrent power, while golden parachutes and compensation plans are associated with greater takeover likelihood. Additionally, compensation plans and poison pills have a positive, while severance agreements have a negative effect on takeover premia received by target shareholders.

This study suggests that the use of the G-Index as a proxy for takeover protection is confounded by the opposing and relative effects of individual G-Index components on takeover

likelihood. Results show that a higher number of governance provisions does not necessarily translate to a higher degree of takeover protection. This suggests that studies using the G-Index as a proxy for takeover vulnerability can misclassify firms, which may lead to erroneous conclusions and implications. An alternative index of takeover protection provided in this study accounts for different directional and relative effects of the provisions on takeover probability.



## Appendix: Variable Definitions

### A.1 Firm Financial Characteristics and Industry Takeover Activity

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 =  $(\text{Current assets} - \text{Current liabilities}) / \text{Total assets}$

Debt / Equity = a three-year average of the ratio of debt to equity.

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

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

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

Takeover Activity = the level of takeover activity in a firm's industry; it is defined as the number of industry takeover attempts a year prior to the event year, divided by the total number of takeovers in the same year. Industry groups are based on the 48 Fama-French industry classifications.

### A.2 Board Characteristics, Managerial and Blockholder Ownership

Board Size = number of board members

Proportion Independent = percentage of directors who are not affiliated with the company

Duality = 1, if the CEO also serves as chairman of the board, and 0, otherwise

CEO Ownership = percentage of shares outstanding owned by firm CEO

Director Ownership = percentage of shares outstanding owned by all directors, other than firm CEO

Managerial Ownership = percentage of shares outstanding owned by firm CEO and directors

Blockholder Ownership = percentage of shares outstanding owned by outside blockholder (at least 5%)

### A.3 Governance Provisions

- Blank Check preferred stock gives the board of directors an ability to issue preferred stock without further shareholder approval. The argument in favor of blank check is that it gives the board a flexibility in pursuing various corporate decisions without incurring the time and expense of a shareholder vote. However, the board can also use a blank check provision to dilute the common stock and make an acquisition less attractive or even impossible. According to Gompers, Ishii, and Metrick (2003), the most important use of the blank check is to implement poison pills or to prevent takeovers by placing the stock with friendly investors. As such, blank check “is a crucial part of the “delay” strategy” (p. 146). In contrast, Bebchuk, Cohen, and Ferrell (2005) state that significance of blank checks has diminished over time, and firms can and do adopt poison pills without the employment of blank checks.
- Business Combination Law imposes a moratorium on certain kinds of transactions (i.e., asset sales, mergers) between the large shareholder and the firms, unless the transaction is approved by the board of directors.
- Bylaw and Charter amendment limitations limit shareholders’ ability to amend the governing documents of the corporation. This might take the form of a supermajority vote requirement for charter or bylaw amendments, total elimination of the ability of shareholders to amend the bylaws, or the ability of directors (beyond the provisions of state law) to amend the bylaws without shareholder approval.
- Compensation Plan allows cashing out options or accelerating the payout of bonuses in case of change in control.
- Directors’ Duties provisions allow directors to consider constituencies other than shareholders when considering a merger. These constituencies may include, for example, employees, communities, or suppliers. This provision provides boards of directors with a legal basis for rejecting a takeover that would have been beneficial to shareholders. 31 states have Directors’ Duties laws allowing similar expansions of constituencies.
- Limitations on Directors’ Liability are charter amendments that eliminate directors’ personal liability for breaches of fiduciary duty. Directors experience significant negative wealth effects associated with takeovers, so their interests quite often are divergent from those of shareholders (Harford 2002). These amendments protect directors from financial responsibilities, primarily in case of a lawsuit.
- Fair Price requires a bidder to pay the same “fair” price (i.e., the highest price paid before the tender offer) for all shares purchased. These provisions are to avoid two-tiered tender offers, in which a bidder offers a substantially higher price for the block of shares needed to gain control and then offers a lower price for the remaining shares. Fair price is defined as either employment of firm-level fair price provision or coverage by fair price state law.

- Golden Parachute is a provision in the employment contract that provides compensation (i.e., severance pay, bonus, stock options) to top managers for loss of job following a change of control. Golden parachutes do not require shareholder approval.
- Indemnification Contracts and Director Indemnification are contracts and bylaws or charter amendments, respectively, that indemnify particular officers and directors from certain legal expenses and judgments resulting from lawsuits pertaining to their conduct.
- Poison Pill gives the target stockholders the right to purchase the target's or acquirer's stock at a steep discount, diluting the bidder's voting power. Poison pill does not require a shareholder approval and can be implemented in less than one-day notice, even after the takeover bid is officially announced.
- Severance agreements assure top executives of their positions or some compensation that are not contingent upon a change in control.
- Staggered Board (also known as classified board) has different (usually 3) classes of directors with overlapping terms. Only part of the board can be replaced each year, so an outsider has to wait for up to two years to gain a full control of the board. Gompers, Ishii, and Metrick (2003) state that because of this slow replacement, a staggered board is a crucial component of the *Delay* group of provisions and "clearly retains some deterrent value in modern takeover battles" [p.147].
- Limits on action by Written Consent and limits to call Special Meetings add extra time to proxy fights, because bidders must wait until the regularly scheduled annual meeting to replace board members or dismantle takeover defenses. These provisions are especially effective when used in combination.

**Table 1-1: 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 1-2: Summary Statistics on G-Index Values by IRRC Publication Year and Industry**

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: G-Index values and takeover frequencies by Fama-French 12 industry classifications				
The sample consists of 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. In this panel, the G-Index is measured as of the last IRRC publication year available for a given firm. 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.				
Fama-French Industry Classification	G-Index		Percentage of Firms in Industry that are Takeover Targets	Number of Firms in Industry
	Mean	Median		
Business Equipment	8.39	8.00	20%	470
Healthcare	8.57	8.00	25%	209
Finance	8.75	9.00	25%	59
Other	8.90	9.00	26%	279
Shops	9.03	9.00	17%	283
Non-Durables	9.04	9.00	19%	132
Energy	9.12	9.00	34%	107
Telecom	9.28	9.00	38%	53
Chemicals	9.74	10.00	31%	85
Durables	9.76	10.00	27%	66
Manufacturing	9.82	10.00	25%	332
Utilities	10.04	10.00	42%	156

**Table 1-3: 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 Year	Merger Year	Mean G-Index		<i>p</i> -value for differences in means test
		Targets (N=574)	Non-targets (N=6,758)	
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 1-4: Takeover Frequencies and Deal Characteristics of High and Low G-Index Firms**

Panel A: Takeover frequencies			
IRRC year / merger years	Low (G-Index < 7)	High (G-Index > 11)	Chi-square test <i>p</i> -value
1990 / 1990-1992	5.52%	1.12%	0.02**
1993 / 1993-1994	4.52%	3.20%	0.51
1995 / 1995-1997	13.38%	11.21%	0.52
1998 / 1998-1999	12.69%	20.00%	0.03**
2000 / 2000-2001	10.05%	10.53%	0.88
2002 / 2002-2003	5.19%	2.88%	0.26
2004 / 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			
Merger Deal Characteristics	Low (N=100)	High (N=117)	Chi-square test <i>p</i> -value
Completed	83.00%	78.63%	0.42
Hostile	4.00%	12.82%	0.02**
Multiple Bidders	6.00%	10.26%	0.26
Tender Offer	31.00%	23.08%	0.19

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

**Table 1-5: 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. Data on board characteristics and ownership structure are for a sub sample of firms from IRRC Directors and Blockholders databases. Variable definitions are provided in the Appendix.

Panel A: Summary Statistics						
	Mean	Median	Standard Deviation	25 <sup>th</sup> Percentile	75 <sup>th</sup> Percentile	Number of Observations
G-Index	9.23	9.00	2.72	7.00	11.00	14,634
Total Assets (\$ million)	3,520.24	931.66	8,431.40	364.25	2,798.80	14,634
Sales Growth	0.15	0.08	0.45	0.02	0.18	14,634
Liquidity	0.20	0.18	0.20	0.04	0.34	14,634
Debt / Equity	0.41	0.44	5.37	0.11	0.89	14,634
Market / Book	2.49	2.11	9.75	1.44	3.38	14,634
Price / Earnings	9.25	15.21	52.15	8.65	21.66	14,634
CAR, %	2.14	1.16	9.99	-3.48	6.96	14,634
Takeover Activity	0.05	0.03	0.06	0.00	0.08	14,634
Board Size	9.27	9.00	2.55	7.00	11.00	7,643
Proportion Independent, %	64.71	66.67	17.78	54.55	77.78	7,643
Duality, %	53.28	100.00	49.90	0.00	100.00	7,632
CEO Ownership, %	2.17	0.00	6.10	0.00	1.60	6,884
Director Ownership, %	5.97	1.40	12.90	0.00	5.70	6,895
Managerial Ownership, %	8.13	2.67	14.57	0.00	9.25	6,895
Blockholder Ownership, %	16.79	14.42	14.80	5.50	25.80	5,134

(continued)



**Table 1-5 (continued)**

Panel B: Pearson Correlation Matrix

Variable	Takeover	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(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) Takeover Activity	0.09*	-0.06*	0.06*	0.06*	-0.10*	0.01	0.00	-0.01	0.03*					
(10) Board Size	0.01	0.28*	0.56*	-0.08*	-0.39*	0.04*	0.03*	0.01	-0.14*	-0.07*				
(11) Prop. Ind.	0.03*	0.24*	0.24*	-0.09*	-0.18*	0.03*	-0.03*	-0.04*	0.01	0.05*	0.14*			
(12) Duality	-0.03*	0.05*	0.09*	-0.01	-0.05*	-0.01	-0.03*	0.03*	0.02	-0.01	-0.01	0.06*		
(13) Man. Own.	-0.03*	-0.23*	-0.20*	0.03*	0.12*	-0.09*	0.00	0.03*	0.03*	-0.04*	-0.11*	-0.39*	-0.03*	
Block. Own.	0.02	-0.09*	-0.23*	-0.01	0.12*	-0.02	-0.08*	-0.03	-0.12*	-0.19*	-0.23*	-0.04*	-0.03	-0.08*

\*indicates statistical significance at the 5% or lower.

**Table 1-6: G-Index and Acquisition Likelihood: Logit Model**

Logistic regression in which the dependent variable equals one if the firm is a takeover target during 1990-2004. The sample consists of firms covered by IRRG Governance database with data available on COMPUSTAT / CRSP for three years prior to the event year. Data on takeover targets are from SDC. Model 1 includes the G-Index and firm financial characteristics for the full sample. Model 2 includes additional variables on board characteristics for a sub sample of firms covered by IRRG Directors database. Model 3 also includes managerial and block ownership from IRRG Directors and Blockholders databases. Each regression includes fixed year effect dummy variables. *t*-statistics are given in brackets.

	Model 1 (N=14,634)	Model 2 (N=7,632)	Model 3 (N=4,006)
G-Index	0.012 [0.75]	0.010 [0.39]	0.024 [0.76]
Size	-0.168*** [-4.76]	-0.024 [-0.39]	-0.091 [-1.19]
Sales Growth	-0.068 [-0.61]	-0.024 [-0.14]	-0.018 [-0.11]
Liquidity	-0.191 [-0.75]	-1.065*** [-2.50]	-1.235** [-2.44]
Debt / Equity	0.024 [1.03]	0.014 [0.45]	-0.028 [-0.57]
Market / Book	-0.001 [-0.09]	-0.009 [-0.82]	-0.003 [-0.23]
Price / Earnings	-0.001* [-1.67]	-0.001 [-0.79]	-0.001 [-0.68]
CAR	-0.006 [-1.20]	-0.005 [-0.62]	-0.006 [-0.58]
Takeover Activity	8.590*** [12.38]	8.445*** [7.21]	10.275*** [6.15]
Board Size		-0.033 [-0.97]	-0.048 [-1.16]
Proportion Independent		1.033*** [2.48]	0.653 [1.26]
Duality		-0.278** [-2.05]	-0.262 [-1.62]
Managerial Ownership			-0.011 [-1.27]
Blockholder Ownership			0.009** [1.71]
Intercept	-2.669*** [-7.74]	-4.523*** [-7.59]	-3.297*** [-4.29]
Likelihood ratio test statistic	420.07***	177.14***	97.91***
Pseudo R <sup>2</sup>	0.09	0.08	0.07

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

**Table 1-7: G-Index and Acquisition Likelihood: Hazard Model**

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. Models 1 and 3 include 14,634 firm-years covered by IRRC Governance database with data available on COMPUSTAT / CRSP for three years prior to the event year. Models 2, 4-8 include a subset of 4,006 firm-years with governance data available on IRRC Directors and Blockholders databases for the period 1996-2001. Variable definitions are provided in the Appendix. 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 brackets.

Independent Variables	Models							
	1	2	3	4	5	6	7	8
G-Index	0.000 [-0.01]	0.022 [0.61]	0.000 [0.01]	-0.040 [-0.30]	-0.020 [-0.44]	0.040 [1.01]	-0.013 [-0.25]	-0.056 [-0.35]
<i>Governance Characteristics:</i>								
Board Size		-0.058 [-1.23]		-0.057 [-1.20]	-0.060 [-1.27]	-0.059 [-1.25]	-0.058 [-1.21]	-0.060 [-1.24]
Proportion Independent		0.529 [0.90]		-0.304 [-0.17]	0.518 [0.88]	0.449 [0.76]	0.515 [0.87]	0.166 [0.09]
G-Index*Prop. Independent				0.094 [0.50]				0.029 [0.14]
Duality		-0.333* [-1.82]		-0.332* [-1.81]	-1.385** [-2.11]	-0.330* [-1.80]	-0.335* [-1.83]	-1.384** [-2.12]
G-Index*Duality					0.111* [1.68]			0.111* [1.69]
Managerial Ownership		-0.008 [-0.87]		-0.008 [-0.91]	-0.008 [-0.86]	0.015 [0.70]	-0.009 [-0.91]	0.013 [0.56]
G-Index*Manag. Ownership						-0.003 [-1.08]		-0.003 [-0.95]
Blockholder Ownership		0.003 [0.47]		0.003 [0.46]	0.003 [0.46]	0.003 [0.44]	-0.015 [-0.75]	-0.014 [-0.71]
G-Index*Blockholder							0.002 [0.96]	0.002 [0.90]

*Other Firm Characteristics:*

Size	-0.107***	-0.081	-0.107***	-0.081	-0.080	-0.087	-0.083	-0.088
	[-2.63]	[-0.90]	[-2.63]	[-0.90]	[-0.88]	[-0.96]	[-0.92]	[-0.98]
Age	-0.016***	0.001	-0.016***	0.001	0.002	0.001	0.001	0.002
	[-4.55]	[0.20]	[-4.56]	[0.15]	[0.26]	[0.19]	[0.18]	[0.26]
Sales Growth	-0.027	0.038	-0.027	0.037	0.034	0.039	0.037	0.032
	[-0.25]	[0.25]	[-0.25]	[0.25]	[0.23]	[0.26]	[0.25]	[0.23]
Liquidity	-0.437*	-1.506*	-0.440*	-1.490**	-1.520***	-1.463**	-1.531***	-1.513***
	[-1.66]	[-2.59]	[-1.67]	[-2.56]	[-2.61]	[-2.50]	[-2.62]	[-2.58]
Debt / Equity	0.015	0.002	0.015	0.002	0.003	0.002	0.001	0.002
	[0.66]	[0.03]	[0.66]	[0.04]	[0.06]	[0.04]	[0.02]	[0.04]
Market / Book	0.009	-0.004	0.009	-0.004	-0.004	-0.004	-0.004	-0.003
	[0.79]	[-0.24]	[0.79]	[-0.25]	[-0.23]	[-0.21]	[-0.21]	[-0.17]
Price / Earnings	-0.001	0.000	-0.001	0.000	0.000	0.000	0.000	0.000
	[-1.64]	[-0.46]	[-1.64]	[-0.45]	[-0.42]	[-0.45]	[-0.46]	[-0.41]
CAR	-0.012***	-0.002	-0.008	-0.002	-0.002	-0.003	-0.002	0.006
	[-2.57]	[-0.22]	[-0.50]	[-0.21]	[-0.21]	[-0.26]	[-0.22]	[0.19]
G-Index*CAR			0.000					-0.001
			[-0.26]					[-0.28]
Takeover Activity	6.385***	9.789***	6.381***	9.810***	9.859***	9.763***	9.844***	9.888***
	[10.19]	[5.36]	[10.18]	[5.37]	[5.40]	[5.34]	[5.39]	[5.39]
Number of Observation	14,634	4,006	14,634	4,006	4,006	4,006	4,006	4,006
Model Chi-square	118.67***	59.56***	140.95***	59.81***	62.40***	60.74***	60.48***	64.66***
	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]

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

**Table 1-8: G-Index and Takeover Premia**

OLS estimates of the effects of the G-Index on takeover premia. 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. Model 1 examines 460 completed mergers, tender offers, or acquisitions of majority interest announced during 1990-2004 with governance provisions data available on the IRRC. Models 2 and 3 provide the analysis for a sub-sample of 127 firms with governance data available on IRRC Directors and Blockholders databases. The information on merger announcements and deal characteristics is from the SDC Mergers & Acquisitions database. *Hostile* is a dummy variable set equal to one if the deal is hostile. *Tender Offer* is a dummy variable set equal to one if the deal is a tender offer. *Multiple Bidders* is a dummy variable set equal to one if the deal has more than one bidder. *All Cash* is a dummy variable set equal to one if the deal is financed entirely by cash. Other variables are defined in the Appendix. All regressions include the yearly dummy variables (not reported). *t*-statistics are provided in brackets.

Variable	Model 1	Model 2	Model 3
Intercept	0.068 [0.49]	0.082 [0.21]	0.010 [0.01]
G-Index	0.007 [1.12]	0.015 [0.90]	0.024 [0.31]
<i>Deal Characteristics:</i>			
Hostile	0.063 [0.71]	0.204 [1.06]	0.209 [1.07]
Tender Offer	0.022 [0.46]	-0.022 [-0.17]	-0.011 [-0.08]
Multiple Bidders	0.095 [1.11]	0.162 [0.84]	0.158 [0.80]
All Cash	0.149*** [3.47]	0.088 [0.83]	0.074 [0.64]
<i>Firm Financial Characteristics:</i>			
Size	-0.006 [-0.37]	-0.023 [-0.62]	-0.025 [-0.63]
Sales Growth	0.031 [0.63]	0.038 [0.47]	0.040 [0.48]
Liquidity	0.198* [1.90]	0.239 [0.86]	0.249 [0.87]
Debt / Equity	-0.004 [-0.33]	0.004 [0.16]	0.004 [0.13]
Market / Book	0.000 [0.06]	0.001 [0.06]	0.001 [0.07]
Price / Earnings	-0.000 [-0.81]	0.000 [0.04]	0.000 [0.07]
CAR (%)	-0.007*** [-3.34]	-0.012** [-2.18]	-0.012** [-2.2]

Governance Characteristics:

Proportion Independent	0.100	0.219	
	[0.41]	[0.25]	
G-Index*Proportion Independent		-0.010	
		[-0.10]	
Duality	0.024	0.234	
	[0.30]	[0.79]	
G-Index*Duality		-0.022	
		[-0.72]	
Managerial Ownership	0.004	0.011	
	[0.89]	[0.67]	
G-Index*Managerial Ownership		-0.001	
		[-0.45]	
Blockholder Ownership	0.005*	0.000	
	[1.83]	[-0.02]	
G-Index*Blockholder Ownership		0.000	
		[0.60]	
Adjusted R <sup>2</sup> (%)	13.55	5.64	2.77
Number of Observations	460	127	127

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

**Table 1-9: G-Index Sub-Indices and Acquisition Likelihood: Hazard Model**

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 *BCF-index* is Bebchuk et al.'s (2005) index that includes six provisions (staggered boards, limits to shareholder bylaw amendments, supermajority merger requirements, supermajority requirements for charter amendments, poison pills, and golden parachutes). *Delay* and *Protection* sub-indices are as classified by Gompers et al. (2003). The *Delay* group includes blank check, staggered board, special meeting limitations, and limitations to act by written consent. The *Protection* group includes compensation plans, golden parachutes, severance agreements, director indemnification, limitations on directors' liability, and director indemnification contracts. Other variables definitions are provided in the Appendix. 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 brackets.

Variable	Model 1	Model 2	Model 3
BCF-index	0.043 [1.20]		
Delay		0.01 [0.24]	
Protection			0.119** [2.18]
Size	-0.166*** [-4.71]	-0.168*** [-4.83]	-0.172*** [-4.92]
Sales growth	0.026 [0.40]	0.021 [0.33]	0.036 [0.59]
Liquidity	-0.275 [-1.12]	-0.302 [-1.23]	-0.265 [-1.07]
Debt / Equity	0.012 [0.71]	0.013 [0.73]	0.012 [0.70]
Market / Book	0.011 [1.33]	0.011 [1.28]	0.012 [1.40]
Price / Earnings	-0.001** [-1.92]	-0.001** [-1.95]	-0.001** [-1.98]
CAR	-0.011*** [-2.48]	-0.011*** [-2.52]	-0.011** [-2.39]
Takeover Activity	6.409*** [12.75]	6.378*** [12.62]	6.452*** [12.78]
Model <i>p</i> -value	<0.001	<0.001	<0.001

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

**Table 1-10: G-Index Sub-Indices and Takeover Premia**

OLS estimates of the effects of the G-Index and firm performance variables on takeover premia. The sample consists of 460 completed mergers, tender offers, or acquisitions of majority interest announced during 1990-2004 with governance provisions data available on the IRRC. The dependent variable (takeover premium) is measured as market model abnormal stock return from 42 days before the merger announcement through the day of delisting or six months after the announcement, whichever is earlier. The *BCF-index* is Bebchuk et al.'s (2005) index that includes six provisions (staggered boards, limits to shareholder bylaw amendments, supermajority merger requirements, supermajority requirements for charter amendments, poison pills, and golden parachutes). *Delay* and *Protection* sub-indices are as classified by Gompers et al. (2003). The *Delay* group includes blank check, staggered board, special meeting limitations, and limitations to act by written consent. The *Protection* group includes compensation plans, golden parachutes, severance agreements, director indemnification, limitations on directors' liability, and director indemnification contracts. *Hostile* is a dummy variable set equal to one if the deal is hostile. *Tender Offer* is a dummy variable set equal to one if the deal is a tender offer. *Multiple Bidders* is a dummy variable set equal to one if the deal has more than one bidder. *All Cash* is a dummy variable set equal to one if the deal is financed entirely by cash. Other variables are defined in the Appendix. All regressions include the yearly dummy variables (not reported). *t*-statistics are given in brackets.

Variable	Model 1	Model 2	Model 3
BCF Index	0.02 [1.42]		
Delay		0.00 [0.13]	
Protection			0.02 [1.28]
Hostile	0.06 [0.74]	0.06 [0.71]	0.06 [0.72]
Tender Offer	0.02 [0.31]	0.02 [0.48]	0.02 [0.41]
Multiple Bidders	0.10 [1.20]	0.10 [1.19]	0.10 [1.14]
All Cash	0.15*** [3.53]	0.15*** [3.50]	0.15*** [3.57]
Size	-0.00 [-0.17]	-0.00 [-0.13]	-0.01 [-0.42]
Sales Growth	0.03 [0.56]	0.03 [0.56]	0.04 [0.72]
Liquidity	0.21** [2.03]	0.19** [1.84]	0.19** [1.84]
Debt / Equity	-0.01 [-0.58]	-0.00 [-0.32]	-0.00 [-0.32]
Market / Book	0.00 [0.03]	0.00 [0.08]	0.00 [0.04]
Price / Earnings	-0.01 [-0.75]	-0.00 [-0.77]	-0.00 [-0.79]
CAR (%)	-0.01*** [-3.22]	-0.01*** [-3.43]	-0.01*** [-3.32]
Adjusted R <sup>2</sup> (%)	13.71	13.31	13.63

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



**Table 1-11: Takeover Defenses and Acquisition Likelihood: Summary of Prior Studies**

This table summarizes previous studies that examine or discuss the effects of takeover defenses and other governance provisions on acquisition likelihood and takeover premia received by target shareholders.

Authors	Takeover Defenses Examined	Sample Period	Results
Ambrose and Megginson (1992)	Poison pills, blank check preferred stock authorizations, classified boards, fair price requirements, supermajority requirements, dual class, voting rights	1981-1986	<ul style="list-style-type: none"> <li>• Blank check preferred has a negative effect on takeover likelihood</li> <li>• Voting rights have a positive effect on takeover likelihood</li> </ul>
Comment and Schwert (1995)	Poison pills, control share state law, business combination law	1977-1991	<ul style="list-style-type: none"> <li>• No evidence of takeover deterrence</li> <li>• Poison pills and control share laws increase the takeover premia</li> </ul>
Machlin, Choe, Miles (1993)	Golden parachutes	1976-1984	<ul style="list-style-type: none"> <li>• Golden parachutes increase the takeover likelihood</li> <li>• The size of the parachute payments has a positive effect on takeover premium</li> </ul>
Bebchuk, Coates, Subramanian (2002)	Staggered boards	1996-2000	Show that staggered boards, especially the ones specified in the charters, are effective deterrents of hostile takeovers
Bebchuk, Cohen, Ferrel (2005)	Examine which of the G-Index components explain the variation in firm value and performance	1990-2002	<ul style="list-style-type: none"> <li>• Identify six provisions (staggered boards, poison pills, golden parachutes, supermajority requirements for mergers, limits to amend charters and bylaws) that drive the negative correlation between the G-Index and firm value based on takeover protection</li> <li>• Argue that fair price provisions, business combination laws, blank check preferred stocks lost their deterrent power in the 1990s</li> </ul>

*(continued)*

**Table 1-11 (continued)**

Authors	Takeover Defenses Examined	Sample Period	Results
Daines and Klausner (2001)	Discuss the effects of a large set of defenses	1994-1997	<ul style="list-style-type: none"> <li>• The employment of defenses by IPO firms is not explained by efficiency theory</li> <li>• Suggest that significant barriers to hostile acquisitions include: dual class stock, classified board, prohibition of shareholder voting by written consent coupled with prohibitions on calling special meetings, removal of directors for cause only, advance notice requirement of board nominations, nonshareholder constituency provisions</li> <li>• Business combination statutes are redundant with poison pills and provide minimal, if any, deterrence</li> <li>• Poison pills can be issued without shareholder consent; thus, the presence or absence of a pill at any point in time does not affect firms' takeover vulnerability</li> </ul>

**Table 1-12: Individual Governance Provisions**

The sample consists of 2,231 firms (7,332 firm-years) covered by the IRRC governance provisions database with data available on CRSP and COMPUSTAT for the three years prior to the publication year. Firms with dual common stock structure are omitted from the analysis. The description of each type of provision is given in the Appendix.

	1990	1993	1995	1998	2000	2002	2004	sample average
<b>Panel A: Percentage of firms with a given provision</b>								
<i>Delay:</i>								
Blank Check	77	80	84	86	88	90	91	86
Staggered Board	59	60	62	59	61	62	63	61
Special Meetings	25	29	31	32	36	49	52	38
Written Consent	22	29	31	31	35	45	48	36
<i>Protection:</i>								
Compensation Plan	42	65	72	63	73	75	78	67
Golden Parachute	53	56	56	57	66	71	75	63
Director Indemnification	41	37	38	25	24	19	18	28
Indemnification Contracts	18	17	14	12	10	10	8	12
Limits on Directors' liability	75	69	66	49	46	36	32	50
<i>State Laws &amp; Other:</i>								
Poison Pill	56	59	57	57	61	62	62	57
Business Combination Law	86	89	89	90	91	92	92	90
Fair Price	60	58	58	51	50	45	43	52
<b>Panel B: Percentage of firms with a given combination of provisions</b>								
Poison Pill and Staggered Board	39	42	41	38	42	43	42	41
Limits for Meetings and Written Consent	15	19	20	21	24	30	33	24
Directors' Liability and either one								
Indemnification	44	41	40	29	26	20	18	30
Compensation Plan and Golden Parachute	27	41	44	42	52	57	62	47
Poison Pill and Golden Parachute	38	41	39	38	46	50	51	44
Staggered Board and Golden Parachute	37	38	39	37	44	47	49	42
Number of Firms	868	929	947	1,178	1,077	1,126	1,207	7,332

(continued)

**Table 1-12 (continued)****Panel C: Pairwise Correlations**

The sample consists of 14,634 firm-years (2,231 firms) covered by the IRRC governance provisions database with data available on CRSP and COMPUSTAT for the three years prior to the IRRC publication year. Firms with dual common stock structure are omitted from the analysis. *Takeover* is equal to one if the firm is a target of completed merger, tender offer, or acquisition during 1990-2004. The description of each provision is given in the Appendix. These are tetrachoric correlations, which assume a latent bivariate normal distribution for each pair of variables.

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
(1) Takeover	1.00												
(2) Staggered Board	-0.06	1.00											
(3) Poison Pills	0.03	0.33	1.00										
(4) Directors' Duties	-0.06	0.35	0.10	1.00									
(5) Directors' Liability	-0.16	-0.02	0.08	0.07	1.00								
(6) Special Meetings & Written Consent	0.07	0.46	0.27	0.14	0.03	1.00							
(7) Supermajority Requirements to Mergers	-0.05	0.42	0.17	0.43	0.15	0.21	1.00						
(8) Limits to Amend Bylaws	-0.02	0.42	0.10	0.39	-0.06	0.49	0.27	1.00					
(9) Limits to Amend Charters	0.10	0.43	0.06	0.48	0.08	0.31	0.54	0.73	1.00				
(10) Compensation Plans	0.12	0.16	0.37	0.12	0.11	0.19	0.09	0.14	0.18	1.00			
(11) Golden Parachutes	0.17	0.26	0.44	0.04	0.01	0.15	0.11	0.11	0.19	0.36	1.00		
(12) Fair Price Provisions	-0.12	0.29	0.11	0.40	0.23	-0.02	-0.03	0.09	0.34	0.06	0.12	1.00	
(13) Blank Check Preferred Stock	0.05	0.32	0.35	0.12	-0.10	0.51	0.15	0.37	0.06	0.29	0.21	0.10	1.00
(14) Business Combination Laws	0.07	0.11	0.14	0.02	0.04	0.40	-0.02	0.00	-0.03	0.03	0.13	0.03	0.20

**Table 1-13: 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; and zero, otherwise. 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. Panel A presents the results for a sub-sample of firms from 1990 to 1999. Panel B presents the results for a sub-sample of firms from 2000 to 2004. The description of individual governance provisions and control variables is provided in the Appendix. *Takeover Index* (in Panel B) adds one point for the presence of staggered board, limits on director liability, and fair price provisions and subtracts one point for the presence of golden parachutes and compensation plans. Each regression is estimated using the Cox proportional hazard model, with standard errors estimated using Huber-White estimators adjusted for clustering on firms.

**Panel A: Individual Components and Acquisition Likelihood: 1990-1999**

	Coefficient	z-statistic
<i>G-Index Components:</i>		
Staggered Board	-0.39***	-3.08
Poison Pill	-0.06	-0.47
Directors' Duties	-0.03	-0.15
Limits on Directors' Liability	-0.60***	-5.06
Limits on Special Meetings & Written Consent	0.28*	1.88
Supermajority Requirements for Mergers	0.08	0.51
Limits to Amend Bylaws	-0.25	-1.53
Limits to Amend Charters	0.43	1.40
Compensation Plan	0.38***	2.94
Golden Parachute	0.57***	4.26
Fair Price	-0.33***	-2.72
Blank Check	0.11	0.71
Business Combination Law	0.39*	1.86
<i>Control Variables:</i>		
Size	-0.17***	-3.73
Sales Growth	0.07	1.16
Liquidity	-0.30	-0.96
Debt / Equity	0.00	0.25
Market / Book	0.01	0.80
Price / Earnings	0.00***	-2.63
CAR	-1.10*	-1.78
Takeover activity	8.11***	10.95
Number of observations	9,203	
Number of mergers	311	
p-value	0.00	

*(continued)*

**Table 1-13 (continued)****Panel B: Takeover Index and Acquisition Likelihood: 2000-2004**

	Coefficient	z-statistic
Takeover Index	-0.18**	-2.34
Size	-0.12**	-1.93
Sales Growth	-0.21	-1.29
Liquidity	-0.27	-0.65
Debt / Equity	0.06**	2.14
Market / Book	0.01	0.90
Price / Earnings	0.00	0.14
CAR	-1.04*	-1.78
Takeover activity	5.90***	6.85
Number of observations	5,432	
Number of mergers	156	
p-value	0.00	

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

**Table 1-14: Changes in the G-Index Values between the IRRC Publication Years**

The sample consists of 9,671 firm-years (1,649 individual firms) covered by the IRRC with governance provisions data available for at least two consecutive publication years. Firms with dual common stock structure are omitted from the analysis. Takeover targets are identified by SDC as targets of mergers, tender offers, or acquisitions of majority interest during 1990-2004.

Changes in the G-Index	1990-1993	1993-1995	1995-1998	1998-2000	2000-2002	2002-2004
<b>Panel A: Changes in the G-Index of Target Firms</b>						
Increase	29%	30%	30%	29%	33%	31%
Unchanged	59%	63%	64%	62%	58%	69%
Decrease	12%	7%	6%	10%	9%	0%
Number of observations	17	103	115	94	33	32
<b>Panel B: Changes in the G-Index of Non-Targets</b>						
Increase	39%	26%	27%	30%	37%	17%
Unchanged	48%	62%	63%	63%	55%	74%
Decrease	14%	12%	9%	7%	9%	9%
Number of observations	711	737	637	829	830	964

**Panel C: Lagged Values of the G-Index, Sub-Indices, and Takeover Defenses**

Hazard model estimates of five regressions in which the dependent variable equals one if the firm is a target of completed merger, tender offer, or acquisition of majority interest; and zero, otherwise. Only the coefficients of the main variables of interest are presented. Model (1): *Lagged G-Index* is the *G-Index* value in the prior IRRC publication, relative to the event year. Model (2): *Lagged BCF-index* is the *BCF-index* value in the prior IRRC publication. Model (3): *Lagged Delay* is the *Delay* value in the prior IRRC publication. Model (4): *Lagged Protection* is the *Protection* value in the prior IRRC publication. Model (5): the G-Index components in the prior IRRC publication, relative to the event year. The definitions of sub-indices and other control variables, included in the regressions but not reported, are the same as in Table IX. The description of G-Index components is given in the Appendix.

Variable	Coefficient Estimate	z-statistic
(1) Lagged G-Index	0.02	0.73
(2) Lagged BCF-index	0.05	1.08
(3) Lagged Delay	0.05	0.90
(4) Lagged Protection	0.15***	3.29
(5) Lagged Staggered Board	-0.23**	-1.97
Lagged Directors' Liability	-0.13**	-2.03
Lagged Fair Price	-0.24**	-2.04
Lagged Golden Parachute	0.43***	4.06
Lagged Compensation Plans	0.38***	4.66

\*\*\*, \*\* and indicate statistical significance at the 1% and 5%, respectively.

**Table 1-15: Individual Provisions and Takeover Premia**

OLS estimates of the effects of individual G-Index components and firm performance variables on takeover premia received by target shareholders. The sample consists of 460 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. The dependent variable (takeover premium) is measured as market model abnormal stock return from 42 days before the merger announcement through the day of delisting or six months after the announcement, whichever is earlier. *Hostile* is a dummy variable set equal to one if the deal is hostile. *Tender Offer* is a dummy variable set equal to one if the deal is tender offer. *Multiple Bidders* is a dummy variable set equal to one if the deal has more than one bidder. *All Cash* is a dummy variable set equal to one if the deal is financed entirely by cash. The description of governance provisions and firm characteristics is given in the Appendix. The yearly dummy variables are included in the regression but are not reported.

Variable	Coefficient Estimate	<i>t</i> -statistic
Intercept	0.02	0.16
Poison Pill	0.06*	1.84
Severance	-0.19***	-3.12
Compensation Plan	0.09**	2.26
Paid Cash	0.16***	3.72
Hostile	0.04	0.43
Tender Offer	0.02	0.42
Auction	0.10	1.22
Size	-0.01	-0.37
Sales Growth	0.03	0.72
Liquidity	0.20**	2.00
Debt / Equity	0.00	-0.26
Market / Book	0.00	-0.09
Price / Earnings	0.00	-0.82
CAR (%)	-0.01***	-3.32
Adjusted R <sup>2</sup> (%)	16.89	

\*\*\*, \*\*, and \* indicate statistical significance at the 1%, 5%, and 10%, respectively.



## Chapter 2

### THE EFFECTS OF GOVERNANCE PROVISIONS ON MANAGERIAL ENTRENCHMENT

We define entrenchment as the extent to which managers fail to experience discipline from the full range of corporate governance and control mechanisms, including monitoring by the board, the threat of dismissal or takeover, and stock- or compensation-based performance incentives.

Berger, Ofek, and Yermack (1997)

Gompers, Ishii, and Metrick (2003) (GIM) argue that governance provisions restrict shareholder rights and increase managerial power.<sup>10</sup> They document that firms with strong managerial power (high G-Index firms) significantly underperform firms with weak managerial power (low G-Index firms), using both accounting and stock measures of performance. GIM state that, because it is difficult for shareholders to replace managers who have strong power, these managers may extract private benefits at the expense of shareholders, leading to greater agency costs and lower firm value. Supporting this notion, later studies document that high G-Index firms have high agency costs, and several studies perceive high G-Index value as an indicator of bad governance, managerial entrenchment, and takeover protection [see, for example, Masulis, Wang, and Xie (2006), Dittmar and Mahrt-Smith (2007), Fahlenbrach (2004), Cremers and Nair (2005)].

However, there is no empirical evidence that managers of high G-Index firms are less likely to be disciplined following value-reducing decisions than are managers of low G-Index firms. This study uses a sample of firms that engage in mergers and acquisitions (M&A) to examine whether managers with strong power, measured by the deployment of governance provisions, are, in fact,

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<sup>10</sup> GIM define governance provisions as rules that restrict shareholder rights through takeover protection and limitations on voting power and other forms of shareholder activism. These include firm-level charter and bylaw provisions and state anti-takeover laws. GIM combine 24 provisions into the Governance Index, also known as G, GIM Index, G-Index, or index of anti-takeover provisions.

entrenched, that is, they are less likely to be replaced for poor acquisition decisions by internal or external governance than are managers with weak managerial power.

Mergers and acquisitions have advantages for identifying whether governance provisions effectively entrench managers. First, corporate acquisitions may intensify the conflict of interests between managers and shareholders, as managers can extract private benefits at the expense of shareholders through empire building and investing in manager-specific assets [see, Jensen (1986), Shleifer, and Vishny (1989), Morck, Shleifer, and Vishny (1990), Lang, Stulz, and Walking (1991)]. Hence, M&A is a good topic to study agency problems. In fact, several recent studies use M&A activity to argue that high G-Index firms have high agency costs. Gompers, Ishii, and Metrick (2003) state that managers of high G-Index firms make inefficient investments through high expenditures and acquisitions. Masulis, Wang, and Xie (2006) find that acquirers with a high number of governance provisions experience lower acquisition announcement stock returns than do acquirers with a low number of provisions, and they argue that high G-Index managers engage in acquisitions that destroy shareholder value.

In addition, M&A activity is a good setting to examine the effectiveness of governance mechanisms in performing disciplinary role, because managers have direct control over acquisitions and should be held accountable for poor M&A decisions.<sup>11</sup> In fact, several studies show that monitoring and control mechanisms work well in disciplining managers who make bad acquisitions. Mitchell and Lehn (1990) document that, in the 1980s, managers who engaged in value-reducing acquisitions were punished by becoming takeover targets. In a later study, Lehn and Zhao (2006) show that, despite a decline in the frequency of hostile takeovers in the 1990s,

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<sup>11</sup> Fisman, Khurana, and Rhodes-Kropf (2005) argue that shareholders may misattribute poor firm performance to bad CEO decisions when the CEO may not have direct control over the circumstances that led to poor performance. Since managers have direct control over M&A decisions [see Lehn and Zhao (2006)], acquisitions that reduce shareholder value are more likely to be due to poor managerial decision rather than some other factor outside of manager's control.

CEOs who make bad acquisitions are still replaced by internal governance, takeovers, or bankruptcy. However, Masulis, Wang, and Xie (2006) argue that anti-takeover provisions “undermine the ability of the market for corporate control to perform its ex post settling up function” (page 3) and maintain that “anti-takeover provisions allow managers to make unprofitable acquisitions without facing a serious threat of losing corporate control” (page 5).<sup>12</sup> The question of whether governance provisions decrease the likelihood of disciplinary CEO turnover following poor acquisition decisions has not been examined, and this study contributes to the existing literature by investigating this question.

Another contribution of this study is that, in analyzing the impact of governance provisions on managerial entrenchment, I consider both internal (board driven) and external (corporate takeover) disciplines. This is of particular importance because the deployment of governance provisions is typically associated with takeover protection [e.g., Cremers and Nair (2005), Masulis, Wang, and Xie (2006)]. However, Jensen (1986, 1988) argues that the corporate takeover market serves as a “court of last resort”, that is, it disciplines managers when internal control mechanisms are ineffective. Furthermore, recent studies, including, Kini, Kracaw, and Mian (2004) and Kaplan and Minton (2006), show that, with the decline in hostile takeover activity in the late 1980s, internal governance mechanisms have been more important source of managerial discipline. This suggests the importance of analyzing the effects of governance provisions not only on external but also on internal discipline imposed on firms’ managers, as firms that are protected from corporate takeovers may still have effective internal monitoring mechanisms.

The findings of this paper can be summarized as follows. Using a sample of 355 CEOs who make acquisitions during 1993-2001, I find that, while managers of high G-Index firms do

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<sup>12</sup> Masulis, Wang, and Xie (2006) refer to governance provisions as anti-takeover provisions.

engage in acquisitions that generate negative market reaction, the probability of forced CEO turnover following the acquisition is not related to the degree of managerial power, proxied by the G-Index measure. This result holds for discipline imposed internally by the board of directors and externally by the market for corporate control. These findings indicate that high G-Index managers are as likely to be replaced for poor decisions as are low G-Index managers, which suggests that the G-Index is a poor measure of managerial entrenchment.

I then consider two other proxies for managerial power, based on the deployment of governance provisions: BCF-Index and staggered board indicator. Bebchuk, Cohen, and Ferrell (2005) suggest that their refined index of six governance provisions (BCF-Index) is a better measure of managerial entrenchment than the aggregate G-Index. Bebchuk and Cohen (2005) argue that the staggered board is the key arrangement that protects boards from removal and entrenches management and the board. I do not find any evidence that “entrenched CEOs”, defined by the BCF-Index, face weaker discipline from either the takeover market or the board of directors than do other CEOs. However, results show that managers with strong power, proxied by the staggered board indicator, are less likely to experience forced CEO turnover. Acquiring CEOs of firms with staggered boards have about 15% lower odds of being replaced for one standard deviation decrease in the acquirer’s abnormal stock return around the acquisition announcement date. Further analysis indicates that this relation is driven by protection from external discipline of the takeover market.

Finally, I examine the relation between a firm’s takeover vulnerability and CEO turnover. Chapter 1 shows that Takeover Index, which includes five provisions that are significant determinants of takeover probability and accounts for the directional effect of each provision on takeover likelihood, is a better measure of a firm’s takeover exposure than the G-Index. This

chapter indicates that managers of firms that are less vulnerable to corporate takeovers are more likely to face internal discipline than are managers of firms that are more vulnerable to corporate takeovers. This suggests that directors of the firms that are less exposed to the takeover market assume a greater monitoring role than do directors of the firms that are easier to acquire.

The remainder of this chapter is organized as follows. Section 1 provides a description of the sample of acquiring firms. Section 2 describes the CEO turnover sample and the methodology for documenting and examining the CEO turnover. The empirical results on CEO turnover after the acquisitions are presented in Section 3. Section 4 concludes the paper.

## **2.1 Sample Description: Acquiring Firms**

### **2.1.1 Data Sources**

Based on information from Securities Data Corporation's (SDC) U.S. Mergers and Acquisitions database, I identify 876 firms that made 2,163 mergers and acquisitions, which meet the following criteria:

- (1) The deal is announced between January 1, 1993 and December 31, 2001.
- (2) The acquirer owns less than 50% of target stock at the announcement date and 100% of target stock after the deal is completed.
- (3) The deal value, as reported by SDC, is more than one million dollars and is at least one percent of a bidder's market capitalization on the 21<sup>th</sup> trading day prior to the announcement.
- (4) The acquirer is listed on the Center for Research in Securities Prices (CRSP) Daily Stock Price and Returns database (210 trading days prior to deal announcement) and has annual

financial data on Standard and Poor's COMPUSTAT for the three years prior to the acquisition announcement.

- (5) The acquiring firm is included in the Investor Responsibility Research Center (IRRC) Governance database.
- (6) Compustat Executive Compensation (Execucomp) database identifies the name of the bidder's Chief Executive Officer (CEO) at the time the deal is announced.

These data-screening criteria are similar to those used in Masulis, Wang, and Xie (2006), with the exception of Execucomp data availability. Because of the IRRC and Execucomp requirements, the sample is limited to firms from the S&P 1500.

## **2.1.2 Descriptive Statistics**

### **2.1.2.1 Overall Sample**

Table 2-1 presents the annual distribution of takeovers, sample deal characteristics, and bidder abnormal returns around the acquisition announcement date. Panel A provides the annual and sample distribution of the number of acquisitions, bidder market capitalization, deal value, and relative deal value. The trend in takeover frequency is similar to that documented by Masulis, Wang, and Xie (2006) and Moeller, Schlingemann, and Stulz (2004). At the beginning of the sample period, the number of acquisitions generally increases each year until it reaches its highest level in 1998, and then it drops at the end of the sample period. For the overall sample, the mean (median) bidder's market capitalization is \$7.1 (\$2.4) billion, and the mean (median) deal value reported by SDC is \$817 (\$162) million. The bidder's size and the deal values reach

the highest levels around the 1999-2000 “bubble” period. An average deal is valued at about 16% of the acquirer’s market capitalization.

Panel B provides statistics on deal characteristics and the number of firms with a given frequency of acquisitions. Over 38% of acquisitions involve public targets, while 33%, and 29% are acquisitions of private firms and subsidiaries, respectively. More than two-thirds of the acquisitions are paid with at least some stock, and 23% are paid entirely with cash. Almost half (46%) of the bidding firms make one acquisition, while 19% of the firms make more than three acquisitions during the sample period.

Panel C presents cumulative abnormal returns (CARs) to acquiring firms. Acquirer returns are measured as market model adjusted stock returns on the announcement day (day 0), three days (-1,+1), and five days (-2,+2) around the acquisition announcement. The return on CRSP value-weighted index is used as the market return, with market model parameters estimated over the period from event day -210 to event day -21, where event day 0 is the acquisition announcement date. Assuming market efficiency, bidder stock returns surrounding the acquisition announcement proxy for investor’s assessment of value creation to acquiring shareholders through the acquisition [see, for example, Schwert (1996), Moeller, Schlingemann, and Stulz (2004)]. Results indicate that acquisitions in this sample are value decreasing from the perspective of acquiring shareholders. The average return on the announcement day is -0.18%, significantly different from zero at the 10% level. Recent studies, including Moeller, Schlingemann, and Stulz (2004) and Masulis, Wang, and Xie (2006), document positive bidder returns surrounding acquisition announcements. In an unreported analysis, I find positive CARs for the sample similar to Masulis et al. (2006). These results, however, do not hold once I

impose the Execucomp data requirement, which restricts the sample to larger firms and larger deal values.

Panel C also presents bidder announcement returns for different deal types. Acquisitions financed entirely with cash have insignificant market reaction. In contrast, transactions at least partially financed with stock are associated with a negative market reaction (significant at 1%). Acquisitions of subsidiary targets generate the highest bidder returns, with a mean (median) CAR of 1.11% (0.55%) for the five-day event window. In contrast, acquisitions of public firms generate the lowest returns, with a mean (median) CAR of -1.71% (-1.25%) for the five-day event window. These results are statistically different from zero at the 1% level and are consistent with those documented in recent studies mentioned above.

### **2.1.2.2 Differences in Bidder Announcement Returns and Deal Characteristics between Firms with Different Degrees of Managerial Power**

I now examine whether managers with different degrees of managerial power pursue different types of acquisitions. The purpose of this analysis is to investigate whether there is evidence of high agency costs in acquisitions by firms with strong managerial power.

Throughout this study, I use three classifications of the degree of managerial power. The first is the “Democracy” (low G-Index) and “Dictatorship” (high G-Index) classification used by Gompers, Ishii, and Metrick (2003). According to this classification, firms with a G-Index value below six are considered “Democracies” (i.e., they have strong shareholder power), and firms with a G-Index value above 13 are classified as “Dictatorships” (i.e., they have strong managerial power). The second classification used is the “managerial entrenchment” classification by Bebchuk, Cohen, and Ferrell (2005), who suggest that their refined index of six



governance provisions (BCF-Index) is a better measure of managerial entrenchment than the aggregate G-Index.<sup>13</sup> Firms with a BCF-Index value above two (the sample median) are classified as having a higher degree of managerial entrenchment than firms with a BCF-Index value at or below two. The third measure of managerial power is a staggered board indicator. Bebchuk and Cohen (2005) argue that the staggered board is the key arrangement that protects boards from removal and entrenches management and the board.

Table 2-2 provides descriptive statistics on bidder returns and deal characteristics delineated by these various measures of managerial power. I first examine whether the results, documented by Masulis, Wang, and Xie (2006), on lower merger announcement returns for firms with strong managerial power, hold for the sample of firms used in this study. Panel A provides mean and median CARs for day 0, and the three- and five-day event windows surrounding the acquisition announcement date. For all three classifications, acquirers with stronger managerial power experience lower and negative returns around the acquisition announcements than do acquirers with weak managerial power. The magnitude of the difference in returns is generally higher for the GIM classification, but the statistical significance is highest for the staggered board indicator. The negative returns to acquiring firms with strong managerial power suggest that these acquisitions destroy acquiring shareholders' value and indicate a presence of high agency costs in firms with strong managerial power.

I then investigate whether managers with strong power are more likely to pursue the types of acquisitions that generate negative market reaction. Panel B shows that "Dictatorships" are more likely to acquire public and subsidiary targets, and are less likely to acquire private targets than are "Democracies". Out of 177 acquisitions made by high G-Index firms, 37%

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<sup>13</sup> BCF-Index includes six out of 24 G-Index components: staggered board, poison pill, supermajority voting requirement, limits to amend bylaws, limits to amend charters, and golden parachute.

involve public targets, 25% involve private targets, and 38% are acquisitions of subsidiaries. In contrast, out of 165 acquisitions completed by low G-index firms, 27% are acquisitions of public firms, 47% are acquisitions of private targets, and 26% involve subsidiaries. In addition, Panel B shows that managers with strong power are less likely to pay stock (and more likely to pay cash) for acquisitions than are managers of firms with strong shareholder rights. Thirty six percent of acquisitions by high G-Index firms are paid with at least some stock, compared to 60% of acquisitions by low G-Index firms. This evidence is in line with Harford, Mansi, and Maxwell (2006), who document that high G-Index firms spend cash more quickly, primarily on acquisitions. It may also indicate agency problems in a sense that managers spend extra cash on value decreasing acquisitions rather than distributing it back to the shareholders.

I then further investigate whether the types of acquisitions made by firms with strong managerial power are more likely to reflect the pursuit of managers' self-interests rather than shareholders' interests. Large, diversifying, and frequent acquisitions are often perceived as evidence of empire-building [e.g., Amihud and Lev (1981), Shleifer and Vishny (1983)]. The data show that firms with strong managerial power engage in more mergers and acquisitions than firms with weak managerial power, but there is no evidence that firms with strong managerial power acquire larger targets or are more likely to diversify through acquisitions than firms with weak managerial power. Firms with strong managerial power pursue smaller deals than firms with weak managerial power, but the difference is statistically significant (at 5% for the means, and 1% for the medians) only for the staggered board indicator. Thirty five percent of acquisitions by high G-Index firms are acquisitions of firms outside the bidder's industry, which is not statistically different from the proportion of diversifying acquisitions completed by low G-Index firms.

## **2.2 CEO Turnover: Sample and Methodology**

This section describes the sample and the procedure for documenting CEO turnover following a merger or an acquisition. In addition, it presents the methodology used in this paper to examine the relation between the deployment of governance provisions and forced turnover of acquiring firms' CEOs.

### **2.2.1 CEO Turnover Sample**

Out of 876 acquiring firms used in this study, 473 completed more than one acquisition during the sample period. In 356 out of 473 firms, the same CEO completed each acquisition. To make sure that the same CEO is not counted multiple times, for firms that make several acquisitions with the same CEO I include only the first merger or acquisition during the sample period. In the remaining 117 firms, different CEOs completed different acquisitions. For these firms, I include the first acquisition made by each CEO. As the result, 2,163 mergers and acquisitions performed by 876 firms during 1993-2001 involved 1,001 different CEOs.

Since the analysis requires hand-collecting data on CEO turnover, age, board and ownership characteristics, I randomly pick one third of the observations.<sup>14</sup> The following discussion and analysis pertain to 359 randomly picked observations (334 different firms). To find out whether the CEO was replaced following respective merger or acquisition, I examine the firm's trading and CEO employment status during five years after the acquisition announcement. Of 334 firms, 63 are delisted within five years of making the acquisition and before they had replaced the CEO who was in charge of making the acquisition. Among the 63 firms, 58 were delisted due to a takeover, 2 due to a bankruptcy, and 3 due to not meeting the exchange listing

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<sup>14</sup> Data on board and ownership characteristics are available for a subsample of firms during 1997-2001 from the IRRD Directors and Blockholders databases.

requirements. Out of 292 firms that were still publicly trading five years after the merger or acquisition announcement, 154 had the same CEO who was in charge of making the acquisition.

### **2.2.2 Definition of CEO Turnover**

Involuntary (forced) CEO turnover is defined as CEO replacement by internal governance, takeovers, or bankruptcy. To identify the incidence of CEO turnover, I track the employment status of each CEO for five years after the acquisition announcement. The Lexis-Nexis Academic Business News and companies' proxy statements are used to identify the date of the succession announcement, to determine the circumstances surrounding the CEO turnover, and to confirm the information provided in Execucomp regarding the CEO succession.

CEO replacement by internal governance (board driven) is defined as in Parrino (1997). All CEO successions are classified as disciplinary, if the news articles state that the CEO is fired, forced to step down, or departs due to unspecified policy differences. All other successions are classified as disciplinary if the departing CEO is under the age of 60 and either (1) the news report that the CEO is retiring but do not announce the retirement at least six month prior to the succession, or (2) the announcement does not report that the reason for the departure involves death, poor health, or the acceptance of another position elsewhere or within the firm.

CEO replacement by external governance is defined as CEO turnover due to a merger or bankruptcy / delisting. Specifically, for firms that are acquired within five years of the merger announcement, I examine the first post-acquisition proxy statement of the acquiring firm to determine if the CEO has any type of position in the merged firm. If the CEO of acquired firm stays with the merged firm, then the observation is classified as not involving the CEO turnover, otherwise, the observation is classified as involving forced CEO turnover. To classify the CEO

turnover in bankrupt or delisted firms, I examine the news articles to determine whether the CEO is replaced during the reorganization process. If the CEO is in charge of the reorganization, then the observation is classified as not having a CEO turnover, otherwise, the observation is classified as having a disciplinary turnover.

Table 2-3 summarizes CEO turnover. Information on CEO turnover is not available for 4 out of 359 CEOs. Out of the remaining 355 CEOs, 60 are replaced internally by the board of directors, 27 are replaced through takeovers, and two through bankruptcy, within five years. Overall, in a sample of firms that make acquisitions during 1993-2001, 25% of acquiring CEOs are replaced involuntarily within five years after the acquisition announcement. Lehn and Zhao (2006) document that 47% of CEOs, acquiring public firms during 1990-1998, are replaced involuntarily within five years. In an unreported analysis, I restrict my sample to public targets and, using Lehn and Zhao's (2006) definition of CEO turnover, I find that 32% of the acquiring CEOs are replaced within five years after the acquisition announcement.<sup>15</sup> In comparison, Kaplan and Minton (2006) document that 15% of CEOs of Fortune 500 firms are replaced involuntary from 1992 to 2005.

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<sup>15</sup> Lehn and Zhao (2006) examine the acquisitions of public targets and use age 65 instead of 60 as the determining point for classifying forced CEO turnover.

## 2.2.3 Empirical Design

### 2.2.3.1 The Probability of Forced CEO Turnover

To examine whether the degree of managerial power affects the probability of forced CEO turnover, I estimate the following logit model:

$$\text{Prob}(\textit{Forced CEO Turnover}) = \exp(\alpha + \beta X) / (1 + \exp(\alpha + \beta X)), \quad (2.1)$$

where *Forced CEO Turnover* is a dummy variable that takes the value of one if the acquiring firm's CEO is replaced involuntarily within five years following the acquisition announcement, and zero otherwise;  $X$  is the vector of independent variables, and  $\beta$  is the vector of coefficients to be estimated. The independent variables include the following groups of variables:

- The variables of main interest are the measures of managerial power. *High G-Index* is a dummy variable that equals one if the G-Index value of acquiring firm is greater than nine, and zero otherwise.<sup>16</sup> *High BCF-Index* is a dummy variable that equals one if the BCF-Index value of acquiring firm is greater than two, and zero otherwise. *Staggered Board* is a dummy variable that equals one, if acquiring firm has a staggered board, and zero otherwise. If the degree of managerial power, measured by the deployment of these governance provisions, is associated with managerial entrenchment, then the probability of forced CEO turnover should be affected by these measures. In this case, the coefficients on these variables should be negative. Furthermore, if managers with strong power face weaker discipline than managers with weak power when making value-

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<sup>16</sup> I deviate from the GIM definitions of "Dictatorships" and "Democracies" because of the small number of observations. In an unreported analysis, I confirm the main results of this paper, using other definitions of managerial power based on the aggregate G-Index.

destroying acquisitions, the interaction effect between a measure of managerial power and a variable that defines the acquisition quality should be negative.

- Two variables are included to measure the effect of an acquisition on acquiring firms' shareholders:  $CAR(-2,+2)$  and  $Post-BHAR(+3\ years)$ .  $CAR(-2,+2)$  is the cumulative abnormal return to acquiring firm, measured two trading days before through two trading days after the acquisition announcement date, with market model parameters for CRSP value-weighted index estimated over a period of 220 through 21 trading days prior to the merger announcement. In an efficient market, the change in the acquiring firm's stock price around the acquisition announcement is an unbiased estimate of whether the acquisition adds value to acquiring shareholders. The negative returns indicate "bad" acquisitions (acquisitions that reduce shareholder value) and the positive indicate "good" acquisitions (acquisitions that enhance shareholder value). Subsequently, CEOs who make "bad" acquisitions are more likely to be replaced. Thus, I expect an inverse relation between  $CAR(-2,+2)$  and the probability of forced CEO turnover following an acquisition.  $Post-BHAR(+3\ years)$  is market-adjusted (using CRSP value-weighted index) buy-and-hold return measured over the three years after the completion of merger or acquisition. This variable captures a firm's performance after the corresponding merger or acquisition, and is another measure of the acquisition's quality. Acquisitions in the interests of acquiring shareholders should be associated with better post-acquisition performance. If managers are punished for poor post-acquisition firm performance, we should expect an inverse relation between  $Post-BHAR(+3\ years)$  and the probability of forced CEO turnover. In addition, I control for firm performance prior to the acquisition.

*Pre-BHAR(-3 years)* is market-adjusted (using CRSP value-weighted index) buy-and-hold return measured over the three years prior through 21 trading days before the merger or acquisition announcement date.

- Board characteristics are included as explanatory variables. *Board Size* is the number of directors. Jensen (1993) and Yermack (1996) argue that small boards are more effective monitors of managerial performance. In this case, forced CEO turnover after making a bad acquisition should be higher for firms with small than for firms with large boards. *Proportion Independent* is the proportion of board members consisting of independent directors (i.e., directors who are not employees, former employees, or employees' relatives of the firm). Weisbach (1988) finds outside board members are better monitors of firms' managers. Thus, I expect a positive relation between *Proportion Independent* and the probability of forced CEO turnover. *CEO/Chairman* is a dummy variable that equals one if the CEO of the firm also serves as chairman of the board, and zero otherwise. Fama and Jensen (1983) argue that consolidating the positions of CEO and board chairman in one person reduces the effectiveness of board's monitoring. Accordingly, one would expect for the probability of forced CEO turnover to be negatively affected by *CEO/Chairman* duality.
- Another group of explanatory variables are variables that measure ownership concentration in the hands of managers and outside blockholders. *CEO Ownership* is the percent of a firm's common stock owned by the CEO. *Insider Ownership* is the percent of a firm's common stock owned by executives and directors, as a group. Increased managerial ownership vests additional control, which may be used to deter unwanted takeovers [see, Walkling and Long (1984)]. In this case, managerial ownership is



expected to have a negative effect on the probability of forced CEO turnover.

*Blockholder Ownership* is defined as five percent or higher ownership by non-executives and non-directors of the firm. Outside blockholders facilitate internal control mechanisms, because they have greater incentives to monitor managers than stockholders with a low level of ownership [Denis, Denis, and Sarin (1997), Denis and Serrano (1996)]. Thus, I expect for *Blockholder Ownership* to have a positive effect on the probability of forced CEO turnover.

- *CEO Age* and *CEO Tenure* are included as control variables. Several studies document a positive relation between CEO turnover and CEO age [see, e.g, Weisbach (1988), Murphy and Zimmerman (1993)]. Longer CEO tenure may be associated with more control of the firm, whereby the CEO has more influence on the board, thereby reducing the likelihood of forced CEO turnover.
- *Stock Deal* and *Relative Deal Value* are also included as control variables. Acquisitions paid by stock generate more negative bidder returns than do acquisitions paid by cash, because stock acquisitions signal to the market that the acquiring managers believe that their firm's stock is overvalued [e.g., Servaes (1991), Franks, Harris, and Titman (1991)]. To control for the possibility that announcement returns may be driven by the information about the acquiring firm's value rather than by the information about the quality of the acquisition, I include a dummy variable that equals one if the deal is at least partially paid with stock, and zero otherwise. *Relative Deal Value* is included to control for the size of an acquisition. It is defined as deal value, divided by the acquirer's market value, which is measured on the 21<sup>st</sup> trading day prior to the acquisition announcement date.

All governance provisions' variables are measured the year of or, if not available, the year prior to the acquisition announcement, and are from the IRRC Governance database. Data on CEO age, CEO tenure, board and ownership characteristics are collected from the acquiring firm's proxy statements or, where available, from the Execucomp, IRRC Directors, and Blockholders databases. For firms that have the same CEO in the fifth year after the acquisition announcement, these variables are recorded from the proxy statements closest prior to the acquisition announcement date. For firms that experience CEO turnover, CEO age, board and ownership characteristics are measured prior to the CEO turnover date. For firms that are taken over or delisted, these variables are recorded from the firm's last proxy statement.

### **2.2.3.2 Internal versus External Discipline**

GIM view management as composed of executives and directors. They argue that the G-Index proxies for the quality of firm governance. Their argument implies that high G-Index value is associated with external takeover protection and ineffective internal monitoring. In contrast, Masulis, Wang, and Xie (2006) state that governance provisions protect managers from external discipline of the takeover market, but the authors do not exclude the possibility that managers with a high number of governance provisions are disciplined internally. To examine whether the relation between CEO turnover and governance provisions varies depending on the disciplinary mechanism involved, I separately estimate the following two models:

$$\text{Prob}(\textit{External CEO Turnover}) = \exp(\alpha + BX) / (1 + \exp(\alpha + BX)) \quad (2.2)$$

$$\text{Prob}(\textit{Internal CEO Turnover}) = \exp(\alpha + BX) / (1 + \exp(\alpha + BX)) \quad (2.3)$$

The purpose of this analysis is to investigate whether governance provisions protect managers from both types of discipline, or isolate managers from one type of discipline but not from the other. Model 2.2 estimates the probability of CEO turnover imposed by the market for corporate control. The dependent variable, *External CEO Turnover*, is a dummy variable that equals one, if the acquiring CEO is replaced through a corporate takeover (i.e., the CEO of acquired firm does not have a position in the merged firms), and equals zero otherwise. This model is estimated for a subsample of acquiring CEOs, which excludes the CEOs replaced by internal governance or bankruptcy.

Model 2.3 estimates the probability of forced CEO turnover through internal governance, that is, driven by the board of directors. The dependent variable, *Internal CEO Turnover*, is a dummy variable that equals one, if the acquiring CEO is replaced by the board of directors, and zero otherwise. This model is estimated for a subsample of acquiring CEOs, which excludes the firms subject to takeovers or bankruptcies.

The vector of independent variables,  $X$ , includes one of the measures of the degree of managerial power (*High G-Index*, *High BCF-Index*, or *Staggered Board*), cumulative abnormal returns around the acquisition announcement ( $CAR(-2,+2)$ ), CEO age and tenure, board characteristics, ownership concentration, pre-merger performance, post-merger performance, and relative deal value. These variables are measured the same way as described in model 2.1.

In addition, I include *High Takeover Index* independent variable in both models, which is a dummy variable that equals one for firms with Takeover Index value greater than zero (sample median), and equals zero otherwise. Takeover Index incorporates five governance provisions that affect a firm's takeover probability. This index accounts for the directional effects of these provisions on acquisition likelihood. That is, provisions that have a negative effect on takeover

probability are included with a positive sign, and provisions that have a positive effect on takeover probability are included with a negative sign.<sup>17</sup> Thus, a higher value of the index is associated with lower takeover probability. In Chapter 1, I show that the Takeover Index is a better measure of a firm's takeover vulnerability than the G-Index. In this chapter, I examine whether a firm's exposure to takeovers is associated with the probability of forced CEO turnover. My prior expectation is that firms that are easier to acquire are more likely to have forced CEO turnover imposed by the external market for corporate control. Thus, the coefficient on *High Takeover Index* is expected to be negative.

### **2.3 CEO Turnover and Governance Provisions: Empirical Results**

In this section, I test the relation between CEO turnover and governance provisions. I first conduct univariate analysis to determine whether firms with a high degree of managerial power are less likely to have forced CEO replacement than firms with a low degree of managerial power. I also examine the differences in firm, deal, and CEO characteristics between firms with CEO turnover and firms without CEO turnover. I then test the relation between CEO turnover and governance provisions in a multivariate setting. In several specifications, I differentiate between the discipline imposed by external takeover market and the discipline imposed by internal governance mechanisms. Thus, I examine whether the relation between governance provisions and forced CEO turnover differs, depending on the disciplinary mechanism involved.

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<sup>17</sup> Takeover Index adds one point for the presence of staggered board, limits on director liability, and fair price provisions and subtracts one point for the presence of golden parachutes and compensation plans.

### **2.3.1 Differences between Firms with CEO Turnover and Firms without CEO Turnover**

Table 2-4 reports mean and median values of explanatory and control variables for the full sample of firms, for the subsamples of firms with and without CEO turnover, and for the subsamples of internal and external turnovers.

Panel A presents the results for the overall sample. The mean (median) G-Index is 9.5 (10) provisions. Sixty three percent of the firms have a staggered board structure, and 73% of the firms combine the roles of the CEO and the chairman of the board. The average board size is 10 directors, and, on average, 66% of the board members are independent. On average, blockholders own 18% of the firm, while executives and directors, as a group, own almost 6% of the firm. The average CEO age is 56 years, and the average CEO tenure is 10 years. Firms in this study have good market performance during three years prior to making an acquisition (market-adjusted buy-and-hold average return is 51%). The mean market-adjusted buy-and-hold return for three years after the acquisition is 3% (median is -6%). The average deal is valued at 17% of the bidder's market capitalization, and 39% of the firms use stock or a combination of stock and cash as a payment method for the acquisition.

Panel A also compares the mean and the median values of firm, deal, and CEO characteristics for the subsamples of firms with CEO turnover and without CEO turnover. The data reveal no significant differences in the G-Index or BCF-Index values for acquiring firms with CEO turnover and those without CEO turnover. However, firms that experience forced CEO turnover are less likely to have staggered boards than firms without CEO turnover. Specifically, 53% of the firms with CEO turnover have staggered boards, compared to 67% of the firms without CEO turnover. This difference is statistically significant at 5% and suggests that staggered board indicator may proxy for the degree of managerial entrenchment. In other

words, managers with strong power, measured by the staggered board indicator, are less likely to face disciplinary turnover.

In terms of differences in other governance measures, Panel A shows that firms with CEO turnover have slightly lower CEO ownership than firms without CEO turnover (mean of 1% vs. 2%). This difference is significant at 10%. Furthermore, firms with CEO turnover have smaller boards (mean and median of 9) compared to firms without CEO turnover (mean of 10.7, median of 10). The differences in both the mean and the median values are significant at 1%. This suggests that smaller boards are more effective monitors of managerial performance.

Moreover, firms with CEO turnover have lower post acquisition performance than firms without CEO turnover. The mean (median) buy-and-hold abnormal return three years after the merger or acquisition is -19.5% (-24.7%) for firms with CEO turnover versus 11% (3.6%) for firms without CEO turnover. The differences in both the mean and median values of three year post-acquisition returns are significant at 1%. At the same time, the difference in CARs between firms with CEO turnover and firms without CEO turnover is not statistically significant.

In Panel B, I divide the sample in two groups. First group, “Internal CEO Turnover”, includes firms that have the same CEOs within five years after the acquisition, firms that have “voluntary” CEO changes (i.e., changes due to retirement, acceptance of another position, or illness), and firms, in which the CEO was replaced by internal governance (board driven). For these firms, I want to investigate the relation between governance provisions and the discipline imposed on firms’ CEOs by the board of directors. The second group, “External CEO Turnover”, includes firms that have the same CEOs within five years after the acquisition, firms that have “voluntary” CEO changes (i.e., changes due to retirement, acceptance of another position, or illness), and firms, in which the CEO was replaced by external governance (takeover

market). For these firms, I want to investigate the relation between governance provisions and the discipline imposed on firms' CEOs by market for corporate control. Thus, I examine the differences in firm, CEO, and governance characteristics between firms with CEO turnover and firms without CEO turnover for these two subsamples. The purpose of this analysis is to investigate whether governance provisions protect managers from external discipline (as stated by Masulis et al.) and also from internal discipline (as implied by GIM).

As shown in Panel B, the data indicate no significant difference in governance provisions between firms with CEO turnover and firms without CEO turnover imposed by internal governance. However, in the "External CEO Turnover" subsample, firms with external disciplinary CEO turnover are less likely to have staggered board and, on average, have lower Takeover Index. These results suggest that managers of firms with strong managerial power, measured by the staggered board indicator, and of firms with lower takeover vulnerability, measured by the Takeover Index, are less likely to face external discipline of the takeover market.

In addition, results presented in Panel B suggest that the takeover market disciplines acquiring managers based on a short-term measure of performance, while the board of directors evaluates the long-term performance subsequent to acquisitions in making the disciplinary decisions. In a subsample of firms subject to internal discipline, the difference in CARs is not significant between firms with CEO turnover and firms without CEO turnover. However, the difference in CARs between firms that have external CEO turnover and the ones that do not is significant at 1%. The mean (median) five-day cumulative abnormal return equals -3.6% (-2.9%) for firms that are disciplined externally and equal 1.1% (0.5%) for firms that do not face external discipline. In contrast, the three-year post acquisition performance is significantly lower

in firms with CEO turnover than in firms without CEO turnover for “Internal CEO Turnover” subsample. The mean (median) post acquisition long-term abnormal return is -34% (-31%) for firms that have internal CEO turnover and 11% (7%) for firms that do not have internal CEO turnover. However, in the sample of firms subject to the external discipline, the difference in the mean and median post acquisition abnormal returns is not statistically significant between the turnover and no turnover subsamples.

### **2.3.2 The Degree of Managerial Power and Turnover Frequency**

In Table 2-5, I investigate the following question: How often are the CEOs with weak managerial power replaced involuntarily compared to the CEOs with strong managerial power? I examine three measures of the degree of managerial power (G-Index, BCF-Index, and staggered board) and three types of forced turnover (all turnovers, external, and internal).

The data show no significant difference in disciplinary turnover between high and low G-Index firms. Out of 179 acquiring CEOs of high G-Index firms, 14 and 32 are disciplined externally and internally, respectively. Out of 176 acquiring CEOs of low G-Index firms, 13 are disciplined externally, and 28 are disciplined internally. However, managers of firms with annual election of all board members are disciplined more frequently than managers of firms with staggered boards. Thirty two percent of CEOs in firms without staggered boards face involuntary replacement, while 21% of CEOs experience forced turnover in firms with staggered boards. This difference is significant at 1%. When I differentiate between external and internal discipline, the difference is significant only for the discipline imposed by the takeover market. CEOs of firms with staggered boards are less likely to face the discipline of the market for corporate control than are CEOs of firms with annually elected boards.



### **2.3.3 Logit Estimates of the Probability of Forced CEO Turnover**

To confirm that the results from univariate tests hold after controlling for firm, deal, and CEO characteristics, I examine the relation between CEO turnover and governance provisions in a multivariate setting. In particular, I estimate several logit regressions in which the dependent variable is the probability that the acquiring firm's CEO is replaced within five years of the acquisition announcement and independent variables include firm governance and performance measures, and CEO and deal characteristics. Data on CEO age or tenure is not available for 21 observations, resulting in the sample of 334 CEOs.

Table 2-6 presents the results for the overall sample. The dependent variable is the probability that the acquiring firm's CEO is replaced through internal governance, takeovers, or bankruptcy. Out of 334 CEOs, 85 CEOs (25%) are replaced within five years after the acquisition announcement. Model 1 estimates CEO turnover likelihood using control variables as in Lehn and Zhao (2006). The purpose of this test is to provide a benchmark with which to compare the expanded models that include governance provisions. The results in model 1 are generally consistent with those presented by Lehn and Zhao (2006). Cumulative abnormal returns around the acquisition announcements, post acquisition long-term stock performance, and CEO tenure are all negatively associated with the probability of forced CEO turnover.

Models 2 through 4 test the effects of managerial power on the probability of forced CEO turnover, using three measures of managerial power (G-Index, BCF-Index, and the staggered board indicator). Out of these measures, only staggered board is associated with a lower probability of forced CEO turnover (significant at 5%). For firms that have staggered boards, the

odds of CEO replacement following the acquisition is 44% lower than for firms that have annually elected boards.<sup>18</sup>

Models 5 through 7 add the interaction term between CAR and the corresponding governance provisions' variables in order to test whether the disciplinary consequences of making bad acquisitions are sensitive to the employment of governance provisions. The quality of an acquisition is measured by changes in bidder stock price around the takeover announcement (CAR). The purpose of this test is to determine whether managers who make bad acquisitions and employ a high number of provisions face weaker discipline than managers who make bad acquisitions but employ a small number of provisions. I compute the interaction effects, using the procedure described in Norton, Wang, and Ai (2004), and I find that all three interaction effects are negative but insignificant.<sup>19</sup> These findings suggest that the relation between bidder returns and forced CEO turnover is unaffected by the degree of managerial power measured by the employment of governance provisions. The insignificant effect suggests that either firms choose these provisions optimally, such that bad acquirers are disciplined regardless of the number of provisions employed, or that these measures of the degree of managerial power are not important in explaining the disciplinary turnover of bad acquirers.

To account for possible effects of other governance measures on CEO turnover, models 8 through 14 add board and ownership characteristics to the variables examined in models 1 through 7. Lehn and Zhao (2006) examine the effects of governance characteristics on the probability of internal discipline and conclude that they do not relate to the probability of CEO turnover. In contrast, results in Table 2-6 show that CEOs of firms with larger boards are less likely to face disciplinary turnover than CEOs of firms with smaller boards, consistent with the

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<sup>18</sup> The percent change in the odds ratio is calculated as  $100 * (e^{\beta} - 1)$ .

<sup>19</sup> Norton, Wang, and Ai (2004) point out that the interaction effect in nonlinear models is found by computing the cross derivatives.

idea that smaller boards provide greater monitoring. This result is significant at 1% in every specification. Additionally, higher insider ownership is associated with lower probability of forced CEO turnover in most specifications (significant at 10%), consistent with the entrenchment effect of managerial ownership documented by Denis, Denis, and Sarin (1997).

With the addition of governance controls, the explanatory power of the models increases by about five percent in most specifications. Furthermore, the interaction effect of the staggered board indicator and CAR is significantly negative (Model 14). This suggests that CEOs of firms with staggered boards are less likely to be replaced for making bad acquisitions than are CEOs of firms with annually elected boards. To determine the economic significance of this result, I calculate the coefficient on interaction effect, as described in Norton, Wang, and Ai (2004), which equals -0.0119. Thus, acquiring CEOs of firms with staggered boards have about 2% lower odds of being replaced for one percent decrease in the acquirer's abnormal stock return around the acquisition announcement date than do acquiring CEOs of firms with annually elected boards (the standard deviation of returns is 7.7%). This result shows that poorly performing managers with strong power, measured by the staggered board indicator, are less likely to be replaced than poorly performing managers with weak power. This evidence suggests that staggered boards may proxy for managerial entrenchment.

#### **2.3.4 External versus Internal Discipline**

I then investigate whether the effects of governance provisions and other governance measures on forced CEO turnover are different for external versus internal discipline. In Table 2-7, I estimate several logit regressions for the subsample of "External CEO Turnover" firms. The dependent variable in these regressions equals one if the acquiring firm's CEO is

replaced by a takeover within five years after making the acquisition. Out of 275 CEOs, 27 are replaced by the market for corporate control. The independent variables are the same as in Table 2-6 and also include *High Takeover Index* dummy variable.

Taken together, the results in Table 2-7 are generally consistent with findings in Table 2-6. In models 1 through 4 the regressions are estimated without including the interaction terms between governance provisions and *CAR*. The coefficients on *High G-Index*, *High BCF-Index*, and *High Takeover Index* dummy variables are insignificant. The coefficient on *Staggered Board* is significant at 10%. The coefficients on *CAR*(-2,+2) are negative and significant at 5% in every specification. Models 5 through 8 add the interaction terms between the corresponding governance index dummy and *CAR*(-2,+2). Model 7 has the highest explanatory power ( $R^2=42\%$ ) and shows strong negative effects of staggered boards on the probability of external discipline imposed on acquiring CEOs. However, the interaction effect between *Staggered Board* and *CAR*(-2,+2), computed as the cross-product derivative, is insignificant. Overall, the results in Table 2-7 suggest that acquiring managers with staggered boards are less likely to be replaced by external takeover market, regardless of the quality of an acquisition. In addition, managers of firms with larger boards are less likely to be replaced externally. Other measures of managerial power, takeover vulnerability, and other governance characteristics do not affect the probability of external discipline imposed on acquiring CEOs.

Table 2-8 estimates the probability of internal CEO turnover. The sample includes firms that are not subject to takeovers or bankruptcy. The dependent variable equals one if the acquiring CEO is replaced internally within five years after the respective merger or acquisition announcement and zero otherwise. Out of 279 acquiring CEOs, 60 are replaced within five years after the acquisition announcement by internal governance mechanisms.

Models 1 through 4 estimate the effects of governance provisions, controlling for firm, deal, CEO and other governance characteristics. Consistent with univariate analysis presented in Panel B of Table 2-4, the market reaction to the merger or acquisition announcement is not a significant determinant of internal CEO replacement. Instead, the post acquisition three-year abnormal stock performance has a significant negative effect on forced CEO turnover. CEOs of firms with poor long-term performance after the acquisitions are more likely to face internal discipline. This result is significant at 1% in every specification. Out of governance provisions' indices, *High Takeover Index* dummy is significantly positive. This result suggests that managers of firms that are less likely to be targets of corporate takeovers face stronger discipline from internal governance mechanisms than do managers of firms that are more vulnerable to takeovers. This evidence is consistent with the idea that internal and external governance mechanisms interact in performing the monitoring and disciplining roles.

In models 5 through 8, I add the interaction terms between governance provisions and firm performance. Since internal turnover is affected by post acquisition long-term performance, and not by the acquisition announcement returns, I interact corresponding governance provisions' dummies with post acquisition long-term abnormal stock performance, *Post-BHAR(+3 years)*. All four interaction effects are insignificant. However, *High Takeover Index* dummy remains positive and significant at 10%.

Overall, the results in Table 2-8 suggest that governance provisions do not isolate managers from the discipline imposed internally by the board of directors. If anything, managers of firms that employ a high number of takeover defenses that isolate a firm from becoming a takeover target are more likely to be disciplined by the board of directors. These findings cast

doubt on the view that boards of directors of high G-Index firms are poor monitors of managerial behavior.

## **2.4 Conclusion**

Recent studies document that governance provisions reduce shareholder value and increase agency costs. Several studies argue that these provisions are associated with managerial entrenchment. Managerial entrenchment implies that managers can pursue their self-interests at the expense of shareholders *and* can avoid the discipline from various governance mechanisms, such as the board of directors and the market for corporate control. Despite a common belief in academic literature that the deployment of governance provisions is associated with takeover protection and managerial entrenchment, there is no empirical evidence to support this notion. This paper contributes to the existing literature by investigating the effects of governance provisions on managerial entrenchment. Specifically, it examines whether managers of firms with a high number of governance provisions are less likely to be disciplined by internal (board of directors) or external (corporate takeover) governance mechanisms for decisions that reduce shareholder value.

To perform this analysis, I examine CEO turnover following mergers and acquisitions. The main findings can be summarized as follows. First, I document that the number of governance provisions employed by the respective firm does not affect the probability of forced CEO turnover. Results show that CEOs of acquiring firms with a high number of provisions are as likely to be disciplined by the boards or the takeover market in a form of losing their jobs, as are managers of acquiring firms with a low number of provisions. This evidence suggests that governance provisions do not effectively insulate managers from the discipline of the market for

corporate control or from the discipline imposed by the board of directors and shows that the aggregate measure of governance provisions (G-Index) does not proxy for managerial entrenchment. However, acquiring CEOs of firms with staggered boards are less likely to be replaced following acquisitions that reduce value of acquiring shareholders than are CEOs of firms with annually elected boards. Further analysis shows that this relation is driven by protection from external discipline of the market for corporate control. Finally, CEOs of firms that are less vulnerable to corporate takeovers are more likely to be disciplined by the board of directors. This finding supports the notion that internal and external governance mechanisms interact in performing the disciplinary role, that is, when it is difficult for external takeover market to take control of the firm and replace poorly performing manager, internal governance mechanisms exhibit greater monitoring role.

**Table 2-1: Sample Summary Statistics, Merger Deal Characteristics, and Bidder Announcement Returns**

This table presents annual distribution of takeovers and descriptive statistics on deal characteristics and bidder announcement returns for the sample of 2,163 completed mergers and acquisitions made by 876 firms during 1/1/1993 – 12/31/2001. Sample firms are covered by the IRRG Governance and Execucomp databases, and have annual financial and daily stock return data available on Compustat and CRSP. *Deal Value* is acquisition value, as reported by SDC. *Acquirer Market Value* is bidder market capitalization (stock price\*number of shares outstanding), measured on the 21<sup>st</sup> trading day prior to the acquisition announcement date. *Relative Deal Value* is deal value, divided by the acquirer market value. *Acquirer Market Value* and *Deal Value* are presented in constant 2001 dollars. *CAR* is the cumulative abnormal return to the acquiring firm around merger or acquisition announcement date, measured over several event windows, with market model parameters estimated over a period of 220 through 21 trading days prior to the merger announcement, using CRSP value-weighted index. *N* is the number of observations.

Panel A: Sample Distribution by Announcement Year

Year	Number of Acquisitions	<u>Acquirer Market Value</u> Mean (Median) (\$ million)	<u>Deal Value</u> Mean (Median) (\$ million)	<u>Relative Deal Value</u> Mean (Median)
1993	174	2,403 (1,533)	214 (71)	0.12 (0.05)
1994	187	3,366 (1,771)	292 (96)	0.13 (0.04)
1995	201	3,487 (1,688)	572 (108)	0.16 (0.07)
1996	219	4,787 (2,451)	703 (151)	0.17 (0.06)
1997	216	6,690 (2,878)	698 (196)	0.16 (0.07)
1998	372	7,468 (2,774)	1,188 (164)	0.17 (0.07)
1999	299	13,031 (2,846)	1,545 (236)	0.18 (0.06)
2000	257	14,013 (3,435)	1,277 (267)	0.19 (0.06)
2001	238	8,797 (2,460)	868 (172)	0.14 (0.06)
Overall Sample	2,163	7,116 (2,426)	817 (162)	0.16 (0.06)

(continued)



**Table 2-1 (continued)**

Panel B: Deal Characteristics		
	Percentage of Sample	N
<i>Target Status</i>		
Public	38.33%	829
Private	33.10%	716
Subsidiary	28.57%	618
<i>Method of Payment</i>		
All Cash	23.25%	503
All Stock	33.24%	719
Some Stock	47.94%	1,037
<i>Number of Acquisitions per Firm</i>		
One	46.00%	403
Two	22.27%	195
Three	12.44%	109
More than Three	19.29%	169

Panel C: Bidder Abnormal Returns (CARs), in percent						
	Event Window around Announcement Day					
	Day 0		(-1,+1)		(-2,+2)	
	Mean	Median	Mean	Median	Mean	Median
All Firms (N=2,163)	-0.18% <sup>c</sup>	-0.17% <sup>a</sup>	-0.10%	-0.19% <sup>c</sup>	-0.19%	-0.19%
<i>Payment Method</i>						
All Cash (N=503)	0.02%	-0.03%	0.40% <sup>c</sup>	0.25%	0.38%	0.32%
All Stock (N=719)	-0.72% <sup>a</sup>	-0.62% <sup>a</sup>	-1.08% <sup>a</sup>	-0.71% <sup>a</sup>	-1.23% <sup>a</sup>	-1.02% <sup>a</sup>
<i>Target Status</i>						
Public (N=829)	-1.30% <sup>a</sup>	-0.75% <sup>a</sup>	-1.59% <sup>a</sup>	-1.04% <sup>a</sup>	-1.71% <sup>a</sup>	-1.25% <sup>a</sup>
Private (N=716)	0.41% <sup>a</sup>	0.09%	0.72% <sup>a</sup>	0.36% <sup>c</sup>	0.46% <sup>c</sup>	0.46% <sup>c</sup>
Subsidiary (N=618)	0.63% <sup>a</sup>	0.10% <sup>b</sup>	0.95% <sup>a</sup>	0.36% <sup>b</sup>	1.11% <sup>a</sup>	0.55% <sup>a</sup>
<i>Number of Acquisitions</i>						
Single (N=403)	0.17%	0.09%	0.20%	-0.13%	-0.08%	0.21%
Two or More (N=1760)	-0.27% <sup>a</sup>	-0.23% <sup>a</sup>	-0.17%	-0.22% <sup>c</sup>	-0.22%	-0.24% <sup>c</sup>

<sup>a</sup>, <sup>b</sup>, and <sup>c</sup> indicate significant difference from zero at 1%, 5%, and 10%, respectively, using *t*-test for the means and Wilcoxon signed-rank test for the medians.

**Table 2-2: Bidder Announcement Returns and Deal Characteristics for Different Degrees of Managerial Power**

This table presents differences in bidder announcement returns and merger deal characteristics between firms with different degrees of managerial power. The sample consists of 2,163 completed mergers and acquisitions made by 876 firms during 1/1/1993 – 12/31/2001. Sample firms are covered by the IRRC Governance and Execucomp databases, and have annual financial and daily stock return data available on Compustat and CRSP. Three measures of governance provisions are used to proxy for the degree of managerial power: *G-Index*, *BCF-Index*, and *Staggered Board*. Firms with *High G-Index* values (greater or equal to 14), with *High BCF-Index* (3 or above), and with *Staggered Board* are considered to have strong managerial power; other firms are considered to have weak managerial power. *G-Index* is the index of 24 governance provisions constructed by Gompers, Ishii, and Metrick (2003) as a measure of the balance of power between managers and shareholders. *BCF-Index* is the index of 6 governance provisions constructed by Bebchuk, Cohen, and Ferrell (2005) as a measure of managerial entrenchment. *CAR* is the cumulative abnormal return to the acquiring firm around merger or acquisition announcement date, measured over several event windows, with market model parameters estimated over a period of 220 through 21 trading days prior to the merger announcement, using CRSP value-weighted index. *Deal Value* is the value of an acquisition, as reported by SDC. *Relative Deal Value* is deal value, divided by the acquirer market value, which is measured as stock price multiplied by the number of shares outstanding on the 21<sup>st</sup> trading day prior to the acquisition announcement. *Number of Deals* is the number of acquisitions made by a firm. *Stock Deal* is an acquisition at least partially paid with the stock of the acquiring firm. *Diversifying Acquisition* is an acquisition outside of the bidder's industry group, measured by Fama-French 48 industry classifications. *N* is the number of observations. In Panel B, median values are provided in brackets.

Panel A: Bidder Abnormal Returns (CARs) for Different Degrees of Managerial Power, in percent

Measures of Managerial Power	CAR (0), %		CAR (-1,+1), %		CAR (-2, +2), %		N
	Mean	Median	Mean	Median	Mean	Median	
Low G-Index (<=5)	0.24	0.17	-0.09	0.72	0.29	0.85	165
High G-Index (>=14)	-0.42	-0.66	-0.02	-0.28	-0.49	-0.43	177
Difference	0.66	0.83 <sup>b</sup>	-0.07	1.00	0.78	1.28 <sup>c</sup>	
Low BCF-Index (<=2)	-0.04	-0.04	0.05	0.11	0.08	0.30	
High BCF-Index (>=3)	-0.36	-0.32	-0.28	-0.40	-0.51	-0.53	1,179
Difference	0.32 <sup>c</sup>	0.28 <sup>c</sup>	0.33	0.51 <sup>b</sup>	0.59 <sup>b</sup>	0.83 <sup>a</sup>	984
Annually-Elected Board	0.06	0.03	0.08	0.12	0.14	0.30	
Staggered Board	-0.33	-0.30	-0.20	-0.31	-0.38	-0.37	800
Difference	0.39 <sup>b</sup>	0.33 <sup>a</sup>	0.28	0.43 <sup>b</sup>	0.52 <sup>c</sup>	0.67 <sup>a</sup>	1,363

<sup>a</sup>, <sup>b</sup>, and <sup>c</sup> indicate statistical significance at the 1%, 5%, and 10%, respectively, for differences in means t-test, differences in medians Wilcoxon test.

(continued)

**Table 2-2 (continued)**

Panel B: Deal Characteristics for Different Degrees of Managerial Power

	G-Index			BCF-Index			Staggered Board		
	Low (<=5) (N=165)	High (>=14) (N=177)	statistic	Low(<=2) (N=1,179)	High(>=3) (N=984)	statistic	No (N=800)	Yes (N=1,363)	statistic
Deal Value	1,429 [131]	1,100 [181]	-0.58 [-1.46]	931 [139]	729 [139]	1.28 [-0.73]	1,048 [152]	717 [130]	2.03 <sup>b</sup> 2.66 <sup>a</sup>
Relative Deal Value	0.16 [0.06]	0.23 [0.07]	1.83 <sup>c</sup> [1.79] <sup>c</sup>	0.16 [0.06]	0.17 [0.06]	-0.50 [-0.16]	0.16 0.06	0.16 0.06	-0.06 1.36
Number of Deals	3.72 [3.00]	5.12 [4.00]	4.13 <sup>a</sup> [3.10] <sup>a</sup>	4.16 [3.00]	5.72 [4.00]	7.76 <sup>a</sup> [5.34] <sup>a</sup>	4.12 3.00	5.31 4.00	5.72 <sup>a</sup> [4.21] <sup>a</sup>
Stock Deal	60.00% (N=99)	36.16% (N=64)	19.46 <sup>a</sup>	49.02% (N=578)	46.65% (N=459)	1.22	50.50 (N=404)	46.44 (N=633)	3.33 <sup>c</sup>
Public Target	27.27% (N=45)	37.29% (N=66)	3.91 <sup>b</sup>	35.71% (N=421)	41.16% (N=408)	7.52 <sup>a</sup>	37.13 (N=297)	39.03 (N=532)	0.78
Private Target	46.67% (N=77)	24.86% (N=44)	17.76 <sup>a</sup>	36.22% (N=427)	29.37% (N=289)	11.36 <sup>a</sup>	34.25 (N=274)	32.43 (N=442)	0.76
Subsidiary Target	26.06% (N=43)	37.85% (N=67)	5.44 <sup>b</sup>	28.07% (N=331)	29.13% (N=287)	0.31	28.63 (N=229)	28.54 (N=389)	0.00
Diversifying Acquisition	37.85% (N=67)	34.55% (N=57)	0.40	34.86% (N=411)	38.52% (N=379)	3.09 <sup>c</sup>	37.38 (N=299)	36.02 (N=491)	0.40

<sup>a</sup>, <sup>b</sup>, and <sup>c</sup> indicate statistical significance at the 1%, 5%, and 10%, respectively, for differences in means (*t*-test), differences in medians (Wilcoxon test), and differences in proportions (Chi-square test).

**Table 2-3: Distribution of CEO Turnover**

This table reports the frequency of CEO turnover across different subsamples. *Total Sample* consists of 355 CEOs who engage in mergers or acquisitions during 1993-2001. “Forced CEO Turnover” under the *Total Sample* is defined as CEO replacement within 5 years of the merger or acquisition, which meets one of the following criteria: (1) the CEO is fired, forced to step down, or departs due to unspecified policy differences; or if the departing CEO is under 60 and either (a) the CEO is retiring, but the retirement is not announced at least six month prior to the succession, or (b) the reason for the departure does not involve death, poor health, or the acceptance of another position elsewhere or within the firm; (2) the firm is acquired by another firm, and the CEO of acquired firm does not stay with the merged firm; (3) the firm is undergoing bankruptcy or delisted due to not meeting the exchange financial requirements, and the CEO is not in charge of the reorganization process. “Voluntary CEO Turnover” includes CEOs who left the firm for reasons other than the ones specified above. *Firms not subject to takeovers or bankruptcy* are 298 firms of the total sample that are not delisted due to takeovers or bankruptcy within 5 years of the merger or acquisition. “Forced CEO Turnover” in this subsample is defined as CEO replacement through internal control mechanisms only, as described in (1). *Firms subject to takeovers* are 54 firms that are acquired by other firms within 5 years after their respective merger or acquisition. In this subsample, “Forced CEO Turnover” is defined as in (2). *Firms subject to bankruptcy* are 3 firms that are delisted due to bankruptcy or not meeting the exchange financial requirements. In this subsample, “Forced CEO Turnover” is defined as in (3).

	Number of Observations	% of the Sample
<i>Total Sample:</i>	355	100.00
Forced CEO Turnover	89	25.07
Voluntary CEO Turnover	53	14.93
<i>Firms not subject to takeovers or bankruptcy:</i>	298	100.00
Forced CEO Turnover	60	20.13
<i>Firms subject to takeovers:</i>	54	100.00
Forced CEO Turnover	27	50.00
<i>Firms subject to bankruptcy:</i>	3	100.00
Forced CEO Turnover	2	66.67

**Table 2-4: Differences in Firm, CEO, Governance, and Merger Deal Characteristics between Firms with CEO Turnover and Firms without CEO Turnover**

This table reports the mean and the median values of CEO, governance, firm, and merger deal characteristics across various subsamples. The “Overall Sample” in Panel A consists of 355 CEOs who engage in corporate acquisitions during 1993-2001. “CEO Turnover” includes 89 firms, in which the CEO is replaced within 5 years of the merger or acquisition, meeting one of following criteria: (1) the CEO is fired, forced to step down, or departs due to unspecified policy differences; or if the departing CEO is under 60 and either (a) the CEO is retiring, but the retirement is not announced at least six month prior to the succession, or (b) the reason for the departure does not involve death, poor health, or the acceptance of another position elsewhere or within the firm; (2) the firm is acquired by another firm, and the CEO of acquired firm does not stay with the merged firm; (3) the firm is undergoing bankruptcy or delisted due to not meeting the exchange financial requirements and the CEO is not in charge of the reorganization process. The remaining 266 firms are included in the “No CEO Turnover” sample. In Panel B, “Internal CEO Turnover” includes 298 firms that are not delisted due to mergers or bankruptcy; of these, 60 firms (group “Yes”) have CEO replacement by internal governance, defined as in (1); the remaining 238 firms are included in group “No”. In Panel B, “External CEO Turnover” are 293 firms from the overall sample, excluding firms with CEO replacement by internal governance or bankruptcy. Of these, 27 firms (group “Yes”) are firms, in which the CEO is replaced by the market for corporate control, defined as in (2); the remaining 266 firms are included in group “No”. *G-Index* is the index of 24 governance provisions constructed by Gompers, Ishii, and Metrick (2003) as a measure of the balance of power between managers and shareholders. *BCF-Index* is the index of 6 governance provisions constructed by Bebchuk, Cohen, and Ferrell (2005) as a measure of managerial entrenchment. *Staggered Board* is a dummy variable that equals 1 for firms with only a portion of directors being elected each year, and equals zero otherwise. *Takeover Index* is the index of 5 provisions constructed by Sokolyk (2007) as a measure of a firm’s takeover vulnerability. All governance provisions’ variables are measured the year of or, if not available, the year prior to the acquisition announcement. *CEO Age* and *CEO Tenure* are in years. *CEO/Chairman* is a dummy variable that equals 1 for firms where the CEO is also the chairman of the board, and equals 0 otherwise. *CEO Ownership* is the percent of the firm’s common stock owned by the CEO. *Insider Ownership* is the percent of the firm’s common stock owned by executives and directors, as a group. *Blockholder Ownership* is the ownership of at least five percent of common stock by non-executives and non-directors of the firm. *Board Size* is the number of directors. *Proportion Independent* is the proportion of the firm’s board consisting of independent directors, which are defined as directors who are not employees, former employees, or employees’ relatives. For firms that are not delisted and do not have the CEO turnover, CEO and governance characteristics are from the proxy statements closest prior to the merger announcement; for firms with CEO turnover, these variables are measured prior to the CEO turnover date; for delisted firms these variables are from the last proxy statement. *CAR (-2,+2)* is the cumulative abnormal return to the acquiring firm measured over the five-day event windows surrounding the acquisition announcement date. *Pre-BHAR(-3 years)* is market-adjusted (CRSP value-weighted) buy-and-hold return measured over the three years prior through 21 trading days prior to the merger or acquisition announcement. *Post-BHAR (+3 years)* is market-adjusted (CRSP value-weighted) buy-and-hold return measured over the three years after the completion of merger or acquisition for the sample of firms with no CEO turnover, and from the acquisition completion date to 21 days prior to the delisting date for firms that are delisted within five years after the acquisition, and from the acquisition completion date to the announcement of CEO replacement date for firms with CEO turnover. *Relative Deal Value* is acquisition value reported by the SDC, divided by the acquirer market value, which is measured as stock price multiplied by the number of shares outstanding on the 21<sup>st</sup> trading day prior to the acquisition announcement. *Stock Deal* is a dummy variable that equals one if the deal is at least partially paid with stock, and equals zero otherwise. Median values are provided in brackets. *N* is the number of observations. *t*-statistics correspond to the differences in means *t*-test, and *z*-statistics correspond to the differences in medians Wilcoxon test.

(continued)

**Table 2-4 (continued)**

Panel A: Overall Sample				
	Overall Sample (N=355)	CEO Turnover (N=89)	No CEO Turnover (N=266)	Test for Differences
	Mean [Median]	Mean [Median]	Mean [Median]	<i>t</i> - [ <i>z</i> ] statistic
<u>Governance Provisions:</u>				
G-Index	9.49 [10.00]	9.52 [10.00]	9.48 [9.00]	-0.17 [-0.21]
BCF-Index	2.18 [2.00]	2.09 [2.00]	2.21 [2.00]	0.7 [-0.53]
Staggered Board	0.63 [1.00]	0.53 [1.00]	0.67 [1.00]	2.32 <sup>b</sup> [2.31] <sup>b</sup>
Takeover Index	0.25 [0.00]	0.20 [0.00]	0.27 [0.00]	0.54 [0.65]
<u>CEO Characteristics:</u>				
CEO Age (N=345)	55.94 [56.00]	55.28 [56.00]	56.29 [56.00]	1.16 [1.05]
CEO Tenure (N=328)	10.41 [8.40]	6.00 [4.76]	11.92 [9.84]	6.94 <sup>a</sup> [8.05] <sup>a</sup>
CEO/Chairman	0.73 [1.00]	0.67 [1.00]	0.75 [1.00]	1.18 [1.18]
CEO Ownership (%)	1.74 [0.00]	1.00 [0.00]	2.00 [0.00]	1.79 <sup>c</sup> [1.53] <sup>c</sup>
<u>Governance Characteristics:</u>				
Board Size	10.23 [10.00]	8.96 [9.00]	10.65 [10.00]	4.04 <sup>a</sup> [4.28] <sup>a</sup>
Proportion Independent	0.66 [0.64]	0.62 [0.60]	0.68 [0.64]	0.59 [0.21]
Insider Ownership (%)	5.85 [2.45]	4.53 [1.74]	6.30 [2.90]	1.69 <sup>c</sup> [2.22] <sup>c</sup>
Blockholder Ownership (%)	18.48 [16.80]	17.68 [15.57]	18.74 [16.90]	0.71 [0.34]
<u>Firm and Deal Characteristics:</u>				
CAR (-2, +2) (%)	0.86 [0.26]	0.10 [-0.24]	1.11 [0.46]	1.07 [1.02]
Pre-BHAR (-3 years) (%)	50.91 [1.80]	81.26 [-1.77]	40.66 [4.73]	-1.22 [-0.46]
Post-BHAR (+3 years) (%)	3.38 [-6.01]	-19.48 [-24.68]	11.03 [3.60]	3.14 <sup>a</sup> [-3.96] <sup>a</sup>
Relative Deal Value	0.17 [0.07]	0.15 [5.67]	0.18 [7.09]	0.62 [1.12]
Stock Deal (%)	39.08	41.38	38.31	-0.51

<sup>a</sup>, <sup>b</sup>, and <sup>c</sup> indicate statistical significance at the 1%, 5%, and 10%, respectively.

(continued)

**Table 2-4 (continued)**

Panel B: Subsamples of Internal and External CEO Turnovers						
	Internal CEO Turnover			External CEO Turnover		
	Yes (N=60)	No (N=238)	t- [z] statistic	Yes (N=27)	No (N=266)	t- [z] statistic
<i>Governance Provisions:</i>						
G-Index	9.42 [10.00]	9.45 [9.00]	0.09 [-0.04]	9.64 [10.00]	9.46 [9.00]	-0.31 [0.26]
BCF-Index	2.07 [2.00]	2.20 [2.00]	0.70 [-0.54]	2.20 [2.00]	2.20 [2.00]	0.01 [0.07]
Staggered Board	0.55 [1.00]	0.66 [1.00]	1.65 [-1.64]	0.48 [0.00]	0.67 [1.00]	1.87 <sup>c</sup> [-1.86] <sup>c</sup>
Takeover Index	0.35 [0.00]	0.31 [0.00]	-0.27 [0.20]	-0.16 [0.00]	0.28 [0.00]	1.97 <sup>c</sup> [-2.03] <sup>b</sup>
<i>CEO Characteristics:</i>						
CEO Age (N=345)	55.00 [56.00]	56.25 [56.00]	1.21 [-0.96]	56.64 [56.00]	56.29 [56.00]	-0.23 [0.11]
CEO Tenure (N=328)	6.27 [4.96]	12.50 [10.05]	5.81 <sup>a</sup> [-6.77] <sup>a</sup>	5.24 [4.69]	11.92 [9.76]	4.55 <sup>a</sup> [-5.63] <sup>a</sup>
CEO/Chairman	0.66 [1.00]	0.74 [1.00]	1.20 [-1.20]	0.68 [1.00]	0.74 [1.00]	0.69 [-0.68]
CEO Ownership (%)	0.98 [0.00]	2.04 [0.00]	1.67 <sup>c</sup> [-0.69]	1.09 [0.00]	2.00 [0.00]	0.95 [-1.90]
<i>Governance Characteristics:</i>						
Board Size	9.13 [9.00]	10.59 [10.00]	3.15 <sup>a</sup> [-3.26] <sup>a</sup>	8.76 [8.00]	10.65 [10.00]	2.79 <sup>a</sup> [-3.21] <sup>a</sup>
Proportion Independent	0.61 [0.60]	0.68 [0.64]	0.67 [-0.82]	0.65 [0.67]	0.68 [0.64]	0.13 [0.48]
Insider Ownership (%)	4.59 [1.78]	6.39 [3.01]	1.45 [-2.02] <sup>a</sup>	4.72 [2.00]	6.30 [2.90]	0.88 [-0.77]
Blockholder Ownership (%)	15.74 [14.25]	18.84 [16.85]	1.45 [-1.07]	21.32 [20.25]	18.74 [16.90]	-0.89 [1.14]
<i>Firm and Deal Characteristics:</i>						
CAR (-2, +2) (%)	1.77 [0.74]	1.32 [0.46]	-0.41 [0.61]	-3.64 [-2.86]	1.11 [0.48]	2.79 <sup>a</sup> [-3.23] <sup>a</sup>
Pre-BHAR (-3 years) (%)	85.81 [-2.23]	40.57 [3.05]	-1.09 [-0.87]	73.92 [17.92]	40.66 [4.73]	-0.98 [0.30]
Post-BHAR (+3 years) (%)	-34.05 [-30.54]	10.80 [6.83]	4.19 <sup>a</sup> [-4.38] <sup>a</sup>	17.29 [0.23]	11.03 [3.60]	-0.38 [0.36]
Relative Deal Value	0.16 [4.40]	0.18 [7.06]	0.39 [-1.48]	0.14 [0.08]	0.17 [0.07]	0.52 [0.17]
Stock Deal (%)	46.67	38.66	-1.13	0.32	0.38	0.62

<sup>a</sup>, <sup>b</sup>, and <sup>c</sup> indicate statistical significance at the 1%, 5%, and 10%, respectively.

**Table 2-5: Managerial Power and Frequency of Forced CEO Turnover**

This table compares the frequency of CEO turnover between firms with strong and weak managerial power. Sample (I) consists of 355 CEOs who engage in mergers and acquisitions during 1993-2001. *Total CEO Turnover* includes firms, in which the CEO is replaced within 5 years of the acquisition, defined using one of the following: (1) the CEO is fired, forced to step down, or departs due to unspecified policy differences; or if the CEO is under 60 and either (a) the CEO is retiring, but the retirement is not announced at least six month prior to the succession, or (b) the reason for the departure does not involve death, poor health, or the acceptance of another position; (2) the firm is acquired, and the CEO of acquired firm does not stay with the merged firm; (3) the firm is undergoing bankruptcy or delisted, and the CEO is not in charge of the reorganization process. Sample (II) consists of 293 acquiring CEOs, excluding CEOs who are replaced internally, as defined in (1). *External CEO Turnover* consists of firms that are acquired within 5 years of the acquisition, and the CEO of acquired firm does not stay with the merged firm. Sample (III) consists of 298 acquiring CEOs, excluding firms that are delisted due to mergers or bankruptcy. *Internal CEO Turnover* includes CEO who are replaced by internal governance, using (1) as the definition of CEO replacement. *G-Index* is the index of 24 provisions constructed by Gompers, Ishii, and Metrick (2003). Low G-Index proxies for weak managerial power and includes firms with the G-Index value below 10. High G-Index group includes firms with the G-Index value 10 or above. *BCF-Index* is the index of 6 provisions constructed by Bebchuk, Cohen, and Ferrell (2005) as a measure of managerial entrenchment. Low BCF-Index proxies for weak managerial power and includes firms with the BCF-Index value below 3. High BCF-Index group includes firms with the BCF-Index value 3 or above. *Staggered Board* describes the board's structure. "No" includes firms with annually elected boards, "Yes" includes firms with staggered boards. *N* is the number of observations. Chi<sup>2</sup> corresponds to the differences in proportions test. <sup>a</sup> and <sup>c</sup> indicate statistical significance at the 1% and 10%, respectively.

	Measures of Managerial Power								
	G-Index			BCF-Index			Staggered Board		
	Low (≤9)	High (≥10)	Chi <sup>2</sup>	Low (≤2)	High (≥3)	Chi <sup>2</sup>	No	Yes	Chi <sup>2</sup>
(I) <i>Total CEO Turnover</i>	23.30%	26.82%	0.59	26.70%	22.82%	0.69	32.06%	20.98%	5.40 <sup>a</sup>
	(N=41)	(N=48)		(N=55)	(N=34)		(N=42)	(N=47)	
Number of Observations	176	179		206	149		131	224	
(II) <i>External CEO Turnover</i>	8.78%	9.66%	0.07	10.12%	8.00%	0.38	13.59%	6.84%	3.64 <sup>c</sup>
	(N=13)	(N=14)		(N=17)	(N=10)		(N=14)	(N=13)	
Number of Observations	148	145		168	125		103	190	
(III) <i>Internal CEO Turnover</i>	18.67%	21.62%	0.4	20.93%	19.05%	0.16	25.23%	17.28%	2.7
	(N=28)	(N=32)		(N=36)	(N=24)		(N=27)	(N=33)	
Number of Observations	150	148		172	126		107	191	



**Table 2-6: Logistic Regressions of the Probability of Forced CEO Turnover after the Merger or Acquisition – Total Sample**

This table provides the results of logit estimations based on the sample of 334 completed mergers and acquisitions announced during 1/01/1993-12/31/2001. The dependent variable equals 1 if the acquiring firm's CEO is replaced within 5 years after the acquisition through internal governance, takeovers, or bankruptcy, and equals 0 otherwise. CEO replacement is defined as meeting one of the following criteria: (1) the CEO is fired, forced to step down, or departs due to unspecified policy differences; or if the departing CEO is under 60 and either (a) the CEO is retiring, but the retirement is not announced at least six months prior to the succession, or (b) the reason for the departure does not involve death, poor health, or the acceptance of another position elsewhere or within the firm; (2) the firm is acquired by another firm, and the CEO of acquired firm does not stay with the merged firm; (3) the firm is undergoing bankruptcy or delisted due to not meeting the exchange financial requirements and the CEO is not in charge of the reorganization process. *High G-Index* is a dummy variable that equals 1 if the G-Index value is greater than 9. *High BCF-Index* is a dummy variable that equals 1 if the BCF-Index value is greater than 2. *Staggered Board* is a dummy variable that equals 1 for firms with only a portion of directors being elected each year, and zero otherwise. All governance provisions' variables are measured the year of or, if not available, the year prior to the acquisition announcement. *CAR* is the cumulative abnormal return to the acquiring firm measured over the five-day event windows surrounding the acquisition announcement date. *Pre-BHAR(-3 years)* is market-adjusted (CRSP value-weighted) buy-and-hold return measured over the three years prior through 21 trading days prior to the merger or acquisition announcement. *Post-BHAR (+3 years)* is market-adjusted (CRSP value-weighted) buy-and-hold return measured over the three years after the completion of merger or acquisition for the sample of firms with no CEO turnover, and from the acquisition completion date to 21 days prior to the delisting date for firms that are delisted within five years after the acquisition, and from the acquisition completion date to the announcement of CEO replacement date for firms with CEO turnover. *CEO Age* and *CEO Tenure* are in years. *CEO/Chairman* is a dummy variable that equals 1 for firms where the CEO is also the chairman of the board, and equals 0 otherwise. *CEO Ownership* is the percent of the firm's common stock owned by the CEO. *Insider Ownership* is the percent of the firm's common stock owned by executives and directors, as a group. *Blockholder Ownership* is the ownership of at least five percent of common stock by non-executives and non-directors of the firm. *Board Size* is the number of directors. *Proportion Independent* is the proportion of the firm's board consisting of independent directors, which are defined as directors who are not employees, former employees, or employees' relatives. For firms that are not delisted and do not have the CEO turnover, CEO and governance characteristics are from the proxy statements closest prior to the merger announcement; for firms with CEO turnover, these variables are measured prior to the CEO turnover date; for delisted firms these variables are from the last proxy statement. *Relative Deal Value* is acquisition value reported by the SDC, divided by the acquirer market value, which is measured as stock price multiplied by the number of shares outstanding on the 21<sup>st</sup> trading day prior to the acquisition announcement. *Stock Deal* is a dummy variable that equals one if the deal is at least partially paid with stock, and equals zero otherwise. *t*-statistics are in parentheses.

*(continued)*

**Table 2-6 (continued)**

Independent Variables	1	2	3	4	5	6	7
High G-Index		0.214 (0.73)			0.221 (0.76)		
High BCF-Index			-0.223 (-0.75)			-0.205 (-0.69)	
Staggered Board				-0.581 <sup>b</sup> (-1.99)			-0.568 <sup>c</sup> (-1.93)
CAR	-3.205 <sup>c</sup> (-1.69)	-3.345 <sup>c</sup> (-1.75)	-3.096 (-1.63)	-3.144 <sup>c</sup> (-1.65)	-2.317 (-0.96)	-1.896 (-0.83)	0.182 (0.07)
High G-Index*CAR					-2.585 (-0.67)		
High BCF*CAR						-3.534 (-0.89)	
Staggered Board*CAR							-7.372 (-1.85)
Pre-BHAR (-3 years)	0.053 (1.11)	0.058 (1.18)	0.050 (1.05)	0.047 (0.98)	0.055 (1.09)	0.048 (0.96)	0.036 (0.69)
Post-BHAR(+3years)	-0.658 <sup>a</sup> (-3.01)	-0.662 <sup>a</sup> (-3.01)	-0.652 <sup>a</sup> (-2.98)	-0.662 <sup>a</sup> (-3.02)	-0.682 <sup>a</sup> (-3.04)	-0.676 <sup>a</sup> (-3.04)	-0.685 <sup>a</sup> (-3.09)
CEO Age	-0.008 (-0.37)	-0.009 (-0.43)	-0.006 (-0.29)	-0.007 (-0.34)	-0.009 (-0.44)	-0.006 (-0.28)	-0.003 (-0.14)
CEO Tenure	-0.226 <sup>a</sup> (-6.02)	-0.225 <sup>a</sup> (-5.99)	-0.228 <sup>a</sup> (-6.03)	-0.228 <sup>a</sup> (-6.05)	-0.225 <sup>a</sup> (-6.01)	-0.229 <sup>a</sup> (-6.06)	-0.230 <sup>a</sup> (-6.07)
Stock Deal	0.135 (0.46)	0.135 (0.46)	0.142 (0.48)	0.122 (0.41)	0.153 (0.51)	0.151 (0.51)	0.135 (0.45)
Relative Deal Value	-0.387 (-0.66)	-0.421 (-0.71)	-0.336 (-0.57)	-0.345 (-0.59)	-0.376 (-0.63)	-0.376 (-0.64)	-0.450 (-0.76)
Constant	1.171 (0.97)	1.120 (0.92)	1.171 (0.97)	1.511 (1.23)	1.123 (0.92)	1.174 (0.97)	1.289 (1.04)
Pseudo R <sup>2</sup> (%)	20.49	20.64	20.64	21.54	20.75	20.86	22.49

<sup>a</sup>, <sup>b</sup>, and <sup>c</sup> indicate statistical significance at the 1%, 5%, and 10%, respectively.

(continued)

**Table 2-6 (continued)**

Independent Variables	8	9	10	11	12	13	14
High G-Index		0.426 (1.25)					
High BCF-Index			-0.097 (-0.30)		0.464 (1.35)	-0.070 (-0.22)	
Staggered Board				-0.510 (-1.63)			-0.484 (-1.53)
CAR	-3.113 (-1.59)	-3.389 <sup>c</sup> (-1.70)	-3.076 (-1.57)	-3.073 (-1.56)	-1.222 (-0.50)	-1.478 (-0.62)	1.388 (0.49)
High G-Index*CAR					-5.478 (-1.35)		
High BCF*CAR						-4.500 (-1.09)	
Staggered Board*CAR							-9.261 <sup>b</sup> (-2.18)
Pre-BHAR (-3 years)	0.024 (0.50)	0.031 (0.64)	0.023 (0.48)	0.018 (0.38)	0.024 (0.47)	0.018 (0.37)	0.002 (0.03)
Post-BHAR(+3 years)	-0.510 <sup>b</sup> (-2.44)	-0.509 <sup>b</sup> (-2.43)	-0.510 <sup>b</sup> (-2.44)	-0.523 <sup>b</sup> (-2.50)	-0.555 <sup>b</sup> (-2.54)	-0.546 <sup>b</sup> (-2.53)	-0.549 <sup>a</sup> (-2.59)
CEO Age	-0.005 (-0.20)	-0.004 (-0.18)	-0.004 (-0.17)	-0.004 (-0.18)	-0.004 (-0.17)	-0.004 (-0.18)	0.000 (0.00)
CEO Tenure	-0.235 <sup>a</sup> (-5.78)	-0.231 <sup>a</sup> (-5.68)	-0.236 <sup>a</sup> (-5.78)	-0.237 <sup>a</sup> (-5.83)	-0.233 <sup>a</sup> (-5.74)	-0.238 <sup>a</sup> (-5.82)	-0.238 <sup>a</sup> (-5.84)
Stock Deal	0.257 (0.80)	0.268 (0.84)	0.259 (0.81)	0.225 (0.70)	0.317 (0.98)	0.279 (0.87)	0.260 (0.80)
Relative Deal Value	-0.286 (-0.44)	-0.433 (-0.64)	-0.253 (-0.39)	-0.209 (-0.32)	-0.360 (-0.54)	-0.287 (-0.44)	-0.286 (-0.44)
CEO/Chairman	0.238 (0.66)	0.203 (0.56)	0.237 (0.65)	0.230 (0.63)	0.165 (0.45)	0.206 (0.57)	0.254 (0.68)
Board Size	-0.232 <sup>a</sup> (-3.67)	-0.250 <sup>a</sup> (-3.80)	-0.229 <sup>a</sup> (-3.59)	-0.220 <sup>a</sup> (-3.48)	-0.261 <sup>a</sup> (-3.92)	-0.231 <sup>a</sup> (-3.61)	-0.233 <sup>a</sup> (-3.59)
Prop. Independent	-0.722 (-0.69)	-0.935 (-0.88)	-0.716 (-0.68)	-0.779 (-0.74)	-0.950 (-0.89)	-0.691 (-0.66)	-0.823 (-0.77)
CEO Ownership	0.051 (0.85)	0.054 (0.90)	0.051 (0.84)	0.049 (0.82)	0.064 (1.06)	0.059 (0.97)	0.047 (0.77)
Insider Ownership	-0.047 <sup>c</sup> (-1.82)	-0.043 (-1.62)	-0.048 <sup>c</sup> (-1.84)	-0.049 <sup>c</sup> (-1.89)	-0.046 <sup>c</sup> (-1.72)	-0.050 <sup>c</sup> (-1.91)	-0.055 <sup>b</sup> (-2.04)
Blockholder Ownership	-0.015 (-1.32)	-0.014 (-1.24)	-0.015 (-1.33)	-0.017 (-1.46)	-0.015 (-1.31)	-0.016 (-1.39)	-0.018 (-1.53)
Constant	4.074 <sup>a</sup> (2.60)	4.097 <sup>a</sup> (2.60)	4.051 <sup>a</sup> (2.58)	4.336 <sup>a</sup> (2.73)	4.217 <sup>a</sup> (2.67)	4.104 <sup>a</sup> (2.61)	4.280 <sup>a</sup> (2.65)
Pseudo R <sup>2</sup> (%)	25.80	26.22	25.82	26.50	26.71	26.15	27.86

<sup>a</sup>, <sup>b</sup>, and <sup>c</sup> indicate statistical significance at the 1%, 5%, and 10%, respectively.

### **Table 2-7: Logistic Regressions of the Probability of External CEO Turnover after the Merger or Acquisition**

This table provides the results of logit estimations based on the sample of 275 completed mergers and acquisitions announced during 1/01/1993-12/31/2001, which excludes firms with CEO replacement by internal governance (board of directors). The dependent variable equals one if the acquiring firm's CEO is replaced within 5 years after the acquisition through corporate takeover. *High G-Index* is a dummy variable that equals 1 if the G-Index value is greater than 9. *High BCF-Index* is a dummy variable that equals 1 if the BCF-Index value is greater than 2. *Staggered Board* is a dummy variable that equals 1 for firms with only a portion of directors being elected each year, and zero otherwise. *High Takeover Index* is a dummy variable that equals one if the Takeover Index value is greater than zero. Takeover Index is the index of 5 provisions, constructed by Sokolyk (2007), which measures the firm's takeover vulnerability. All governance provisions' variables are measured the year of or, if not available, the year prior to the acquisition announcement. *CAR* is the cumulative abnormal return to the acquiring firm measured over the five-day event windows surrounding the acquisition announcement date. *Pre-BHAR(-3 years)* is market-adjusted (CRSP value-weighted) buy-and-hold return measured over the three years prior through 21 trading days prior to the merger or acquisition announcement. *Post-BHAR (+3 years)* is market-adjusted (CRSP value-weighted) buy-and-hold return measured over the three years after the completion of merger or acquisition for the sample of firms with no CEO turnover, and from the acquisition completion date to 21 days prior to the delisting date for firms that are delisted within five years after the acquisition, and from the acquisition completion date to the announcement of CEO replacement date for firms with CEO turnover. *CEO Age* and *CEO Tenure* are in years. *CEO/Chairman* is a dummy variable that equals 1 for firms where the CEO is also the chairman of the board, and equals 0 otherwise. *CEO Ownership* is the percent of the firm's common stock owned by the CEO. *Insider Ownership* is the percent of the firm's common stock owned by executives and directors, as a group. *Blockholder Ownership* is the ownership of at least five percent of common stock by non-executives and non-directors of the firm. *Board Size* is the number of directors. *Proportion Independent* is the proportion of the firm's board consisting of independent directors, which are defined as directors who are not employees, former employees, or employees' relatives. For firms that are not delisted and do not have the CEO turnover, CEO and governance characteristics are from the proxy statements closest prior to the merger announcement; for firms with CEO turnover, these variables are measured prior to the CEO turnover date; for delisted firms these variables are from the last proxy statement. *Relative Deal Value* is acquisition value reported by the SDC, divided by the acquirer market value, which is measured as stock price multiplied by the number of shares outstanding on the 21<sup>st</sup> trading day prior to the acquisition announcement. *Stock Deal* is a dummy variable that equals one if the deal is at least partially paid with stock, and equals zero otherwise. *t*-statistics are in parentheses.

(continued)

**Table 2-7 (continued)**

Independent Variables	1	2	3	4	5	6	7	8
High G-Index	0.094 (0.17)				-0.015 (-0.03)			
High BCF		-0.422 (-0.78)				-0.661 (-1.09)		
Staggered Board			-1.070 <sup>b</sup> (-2.07)				-2.031 <sup>a</sup> (-2.79)	
High Takeover Index				-0.243 (-0.41)				-0.239 (-0.40)
CAR	-6.491 <sup>b</sup> (-2.23)	-6.478 <sup>b</sup> (-2.23)	-6.405 <sup>b</sup> (-2.19)	-6.253 <sup>b</sup> (-2.12)	-4.000 (-1.19)	-4.041 (-1.27)	-0.961 (-0.28)	-6.131 <sup>b</sup> (-1.88)
High G-Index*CAR					-9.175 (-1.27)			
High BCF*CAR						-12.958 (-1.45)		
Staggered Board*CAR							-32.396 (-2.93)	
High Takeover Index*CAR								-0.690 (-0.09)
Pre-BHAR (-3 years)	0.047 (0.39)	0.040 (0.34)	0.029 (0.24)	0.037 (0.31)	0.052 (0.43)	0.053 (0.45)	-0.004 (-0.03)	0.038 (0.31)
Post-BHAR (+3 years)	0.023 (0.08)	0.056 (0.19)	-0.001 (0.00)	0.040 (0.14)	0.028 (0.09)	0.061 (0.19)	-0.031 (-0.10)	0.044 (0.15)
CEO Age	0.012 (0.27)	0.014 (0.33)	0.007 (0.17)	0.011 (0.26)	0.012 (0.30)	0.015 (0.37)	0.024 (0.54)	0.011 (0.25)

CEO Tenure	-0.386 <sup>a</sup>	-0.402 <sup>a</sup>	-0.430 <sup>a</sup>	-0.384 <sup>a</sup>	-0.372 <sup>a</sup>	-0.398 <sup>a</sup>	-0.433 <sup>a</sup>	-0.385 <sup>a</sup>
	(-4.02)	(-4.08)	(-4.12)	(-4.03)	(-4.05)	(-4.15)	(-4.21)	(-4.03)
Stock Deal	-0.110	-0.174	-0.119	-0.138	0.004	-0.054	-0.047	-0.140
	(-0.20)	(-0.31)	(-0.21)	(-0.25)	(0.01)	(-0.09)	(-0.08)	(-0.25)
Relative Deal Value	-1.164	-0.995	-0.985	-1.126	-1.091	-1.273	-2.035	-1.138
	(-0.85)	(-0.72)	(-0.72)	(-0.82)	(-0.79)	(-0.94)	(-1.48)	(-0.82)
CEO/Chairman	0.286	0.300	0.270	0.240	0.240	0.222	0.234	0.243
	(0.48)	(0.50)	(0.44)	(0.39)	(0.40)	(0.37)	(0.36)	(0.40)
Board Size	-0.243 <sup>b</sup>	-0.225 <sup>b</sup>	-0.216 <sup>b</sup>	-0.238 <sup>b</sup>	-0.258 <sup>b</sup>	-0.209 <sup>b</sup>	-0.178	-0.238 <sup>b</sup>
	(-2.09)	(-2.00)	(-1.98)	(-2.10)	(-2.16)	(-1.86)	(-1.64)	(-2.10)
Proportion Independent	-0.389	-0.460	-0.638	-0.399	-0.349	-0.374	-1.067	-0.397
	(-0.23)	(-0.26)	(-0.34)	(-0.23)	(-0.21)	(-0.23)	(-0.53)	(-0.23)
CEO Ownership	0.061	0.060	0.064	0.058	0.063	0.072	0.033	0.058
	(0.69)	(0.67)	(0.73)	(0.65)	(0.72)	(0.83)	(0.38)	(0.66)
Insider Ownership	-0.020	-0.025	-0.022	-0.022	-0.019	-0.025	-0.019	-0.021
	(-0.45)	(-0.59)	(-0.51)	(-0.51)	(-0.46)	(-0.60)	(-0.45)	(-0.50)
Blockholder Ownership	0.002	0.001	-0.002	0.000	-0.001	0.000	-0.004	0.000
	(0.12)	(0.08)	(-0.12)	(0.00)	(-0.06)	(0.01)	(-0.19)	(0.00)
Constant	2.424	2.508	3.592	2.624	2.486	2.280	2.886	2.645
	(0.84)	(0.87)	(1.22)	(0.91)	(0.88)	(0.82)	(0.96)	(0.91)
Pseudo R <sup>2</sup> (%)	31.65	32.00	34.19	31.73	32.71	33.57	41.73	31.74

<sup>a</sup> and <sup>b</sup> indicate statistical significance at the 1% and 5%, respectively.

### **Table 2-8: Logistic Regressions of the Probability of Internal CEO Turnover after the Merger or Acquisition**

This table provides the results of logit estimations based on the sample of 279 completed mergers and acquisitions announced during 1/01/1993-12/31/2001 and excludes firms that are delisted due to mergers or bankruptcy. The dependent variable equals one if the acquiring firm's CEO is replaced within 5 years after the acquisition by internal governance. CEO replacement by internal governance is defined as meeting one of the following criteria: (1) the CEO is fired, forced to step down, or departs due to unspecified policy differences; or if the departing CEO is under 60 and either (a) the CEO is retiring, but the retirement is not announced at least six months prior to the succession, or (b) the reason for the departure does not involve death, poor health, or the acceptance of another position elsewhere or within the firm. *High G-Index* is a dummy variable that equals 1 if the G-Index value is greater than 9. *High BCF-Index* is a dummy variable that equals 1 if the BCF-Index value is greater than 2. *Staggered Board* is a dummy variable that equals 1 for firms with only a portion of directors being elected each year, and zero otherwise. *High Takeover Index* is a dummy variable that equals one if the Takeover Index value is greater than zero. Takeover Index is the index of 5 provisions, constructed by Sokolyk (2007), which measures the firm's takeover vulnerability. All governance provisions' variables are measured the year of or, if not available, the year prior to the acquisition announcement. *CAR* is the cumulative abnormal return to the acquiring firm measured over the five-day event windows surrounding the acquisition announcement date. *Pre-BHAR(-3 years)* is market-adjusted (CRSP value-weighted) buy-and-hold return measured over the three years prior through 21 trading days prior to the merger or acquisition announcement. *Post-BHAR (+3 years)* is market-adjusted (CRSP value-weighted) buy-and-hold return measured over the three years after the completion of merger or acquisition for the sample of firms with no CEO turnover, and from the acquisition completion date to 21 days prior to the delisting date for firms that are delisted within five years after the acquisition, and from the acquisition completion date to the announcement of CEO replacement date for firms with CEO turnover. *CEO Age* and *CEO Tenure* are in years. *CEO/Chairman* is a dummy variable that equals 1 for firms where the CEO is also the chairman of the board, and equals 0 otherwise. *CEO Ownership* is the percent of the firm's common stock owned by the CEO. *Insider Ownership* is the percent of the firm's common stock owned by executives and directors, as a group. *Blockholder Ownership* is the ownership of at least five percent of common stock by non-executives and non-directors of the firm. *Board Size* is the number of directors. *Proportion Independent* is the proportion of the firm's board consisting of independent directors, which are defined as directors who are not employees, former employees, or employees' relatives. For firms that are not delisted and do not have the CEO turnover, CEO and governance characteristics are from the proxy statements closest prior to the merger announcement; for firms with CEO turnover, these variables are measured prior to the CEO turnover date; for delisted firms these variables are from the last proxy statement. *Relative Deal Value* is acquisition value reported by the SDC, divided by the acquirer market value, which is measured as stock price multiplied by the number of shares outstanding on the 21<sup>st</sup> trading day prior to the acquisition announcement. *Stock Deal* is a dummy variable that equals one if the deal is at least partially paid with stock, and equals zero otherwise. *t*-statistics are in parentheses.

(continued)

**Table 2-8 (continued)**

Independent Variables	1	2	3	4	5	6	7	8
High G-Index	0.322 (0.79)				0.277 (0.66)			
High BCF-Index		0.011 (0.03)				-0.226 (-0.53)		
Staggered Board			-0.270 (-0.71)				-0.345 (-0.89)	
High Takeover Index				0.719 <sup>c</sup> (1.82)				0.727 <sup>c</sup> (1.79)
CAR	-2.284 (-0.91)	-1.965 (-0.80)	-1.793 (-0.73)	-2.460 (-1.01)	-2.414 (-0.97)	-2.452 (-1.00)	-1.763 (-0.72)	-2.459 (-1.01)
Pre-BHAR (-3 years)	0.010 (0.20)	0.004 (0.09)	0.001 (0.03)	0.013 (0.26)	0.012 (0.25)	0.008 (0.17)	0.001 (0.01)	0.013 (0.26)
Post-BHAR (+3 years)	-0.852 <sup>a</sup> (-3.08)	-0.860 <sup>a</sup> (-3.12)	-0.862 <sup>a</sup> (-3.13)	-0.862 <sup>a</sup> (-3.09)	-0.706 <sup>c</sup> (-1.87)	-0.510 <sup>c</sup> (-1.67)	-0.618 (-1.55)	-0.887 <sup>b</sup> (-2.17)
High G-Index*Post-BHAR					-0.282 (-0.53)			
High BCF-Index*Post-BHAR						-1.111 (-1.86)		
Staggered Board*Post-BHAR							-0.416 (-0.79)	
High Takeover Index*Post-BHAR								0.046 (0.08)
CEO Age	-0.021 (-0.77)	-0.022 (-0.79)	-0.021 (-0.75)	-0.025 (-0.91)	-0.021 (-0.76)	-0.025 (-0.90)	-0.021 (-0.77)	-0.025 (-0.91)



CEO Tenure	-0.219 <sup>a</sup>	-0.221 <sup>a</sup>	-0.222 <sup>a</sup>	-0.228 <sup>a</sup>	-0.219 <sup>a</sup>	-0.223 <sup>a</sup>	-0.222 <sup>a</sup>	-0.228 <sup>a</sup>
	(-4.81)	(-4.87)	(-4.89)	(-4.90)	(-4.78)	(-4.80)	(-4.85)	(-4.90)
Stock Deal	0.344	0.335	0.306	0.434	0.322	0.261	0.322	0.433
	(0.91)	(0.89)	(0.80)	(1.13)	(0.84)	(0.68)	(0.84)	(1.12)
Relative Deal Value	-0.483	-0.372	-0.329	-0.357	-0.515	-0.475	-0.358	-0.354
	(-0.59)	(-0.46)	(-0.41)	(-0.45)	(-0.62)	(-0.55)	(-0.44)	(-0.44)
CEO/Chairman	0.206	0.218	0.202	0.371	0.190	0.217	0.193	0.373
	(0.47)	(0.50)	(0.46)	(0.83)	(0.43)	(0.49)	(0.44)	(0.83)
Board Size	-0.213 <sup>a</sup>	-0.200 <sup>b</sup>	-0.190 <sup>b</sup>	-0.225 <sup>a</sup>	-0.210 <sup>a</sup>	-0.188 <sup>b</sup>	-0.188 <sup>b</sup>	-0.225 <sup>a</sup>
	(-2.68)	(-2.55)	(-2.48)	(-2.79)	(-2.64)	(-2.41)	(-2.44)	(-2.78)
Board Independence	-1.138	-0.963	-0.947	-1.193	-1.070	-0.887	-0.856	-1.198
	(-0.90)	(-0.78)	(-0.76)	(-0.95)	(-0.84)	(-0.71)	(-0.69)	(-0.95)
CEO Ownership	0.069	0.066	0.066	0.070	0.067	0.060	0.064	0.071
	(0.92)	(0.88)	(0.88)	(0.94)	(0.90)	(0.79)	(0.85)	(0.94)
Insider Ownership	-0.055 <sup>c</sup>	-0.058 <sup>c</sup>	-0.059 <sup>c</sup>	-0.059 <sup>c</sup>	-0.052	-0.053 <sup>c</sup>	-0.058 <sup>c</sup>	-0.059 <sup>c</sup>
	(-1.71)	(-1.82)	(-1.87)	(-1.86)	(-1.63)	(-1.69)	(-1.83)	(-1.86)
Blockholder Ownership	-0.025 <sup>c</sup>	-0.025 <sup>c</sup>	-0.025 <sup>c</sup>	-0.021	-0.025 <sup>c</sup>	-0.025 <sup>c</sup>	-0.025 <sup>c</sup>	-0.021
	(-1.78)	(-1.79)	(-1.78)	(-1.48)	(-1.79)	(-1.82)	(-1.76)	(-1.48)
Constant	4.729 <sup>b</sup>	4.705 <sup>b</sup>	4.750 <sup>b</sup>	4.793 <sup>b</sup>	4.691 <sup>b</sup>	4.810 <sup>b</sup>	4.722 <sup>b</sup>	4.783 <sup>b</sup>
	(2.49)	(2.48)	(2.51)	(2.51)	(2.48)	(2.53)	(2.49)	(2.50)
Pseudo R <sup>2</sup> (%)	27.99	27.76	27.94	28.97	28.08	29.08	28.16	28.97

<sup>a</sup>, <sup>b</sup>, and <sup>c</sup> indicate statistical significance at the 1%, 5%, and 10%, respectively.

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## VITA

### TATYANA V. SOKOLYK

#### EDUCATION

Ph.D. in Finance, *The Pennsylvania State University*, 2007  
M.S. in Finance and Economics, *West Texas A&M University*, 2000  
B.S. in General Business, *West Texas A&M University*, 1999

#### DISSERTATION

“The Effects of Governance Provisions on Takeover Vulnerability and Managerial Entrenchment”

#### WORKING PAPERS

“The Effects of Anti-Takeover Provisions on Acquisition Targets,” 2007  
“Do Banks Produce Additional Information about IPO Firms?” 2006  
“The Entrenchment Effects of Governance Provisions,” 2007

#### HONORS / AWARDS

- Smeal Dissertation Research Grant, 2005, 2006
- Enhancement Fund Fellowship, The Pennsylvania State University, 2001-2004
- Graduate Fellowship, West Texas A&M University, 1999-2000
- Outstanding Business Graduate, West Texas A&M University
- Outstanding Student Award in Accounting, Economics, and Finance Department, 1997, 1999
- Alpha Chi Honor Society, 1997-2000
- Mortar Board Honor Society, 1998-2000
- Omicron Delta Epsilon International Honor Society in Economics, 1998-2000

#### TEACHING AND RESEARCH EXPERIENCE

- *Instructor*, The Pennsylvania State University, “Financial Management,” Summer 2004, Summer 2005, Spring 2006
- *Research Assistant* for Professors William Kracaw and Laura Field, The Pennsylvania State University, 2001-present
- *Research Assistant*, West Texas A&M University, 1999-2000

#### ACADEMIC PRESENTATIONS

- *2006 FMA Annual Conference*, “The Effects of Anti-Takeover Provisions on Acquisition Targets”
- *2004 FMA Annual Conference*, Discussant