The Significance of Shareholder Right Limiting Provisions during Merger Waves: An Empirical Investigation

Ivan Obaydin

A thesis submitted to the Business School, the University of Adelaide, in fulfilment of the requirements for the degree of Doctor of Philosophy

May 2014

Table of Contents

List of Tables iv

List of Figures v

Glossary vi

DECLARATION vii

Acknowledgements viii

Abstract ix

1 Introduction 10

2 Literature Review 18

2.1 Chapter Overview 19

2.2 The Market for Corporate Control 20

2.2.1 Corporate Governance – Shareholder Right Limiting Provisions 21

2.2.1.1 Constitutional Limitations 23

2.2.1.2 Takeover-Readiness 25

2.2.2 Impact of Shareholder Right Limiting Provisions 27

2.2.2.1 Firm Performance 28

2.2.2.2 Takeover Likelihood 30

2.2.2.3 Takeover Premiums 30

2.2.2.4 Acquirer Returns 33

2.2.3 Takeover Theories 35

2.2.3.1 Bidder Overvaluation 35

2.2.3.2 Target Valuation 36

2.2.3.3 Inefficient Management/ Firm Underperformance Hypotheses 37

2.2.3.4 Free Cash Flow Theory and Payout Policy 38
2.2.3.5 Financing Related Constraints 39
2.2.3.6 Size Defence 40
2.3 Merger Waves 41
2.3.1 Historical Merger Waves 42
2.3.2 Theoretical Explanations 45
2.3.3 Performance of on-wave takeovers 47
2.3.3.1 Announcement period returns 47
2.3.3.2 Long term performance 48
3 Hypothesis Development and Research Questions 49
3.1 Overview of Research Objectives 50
3.2 Hypothesis Development 52
3.3 Research Questions 56
4 Data and Methodology 65
4.1 Data 66
4.2 Variables 67
4.3 Model Specifications 72
4.3.1 Probit Model 72
4.3.2 Least Squared Regressions 74
4.4 Bidding Firm Announcement Period Cumulative Abnormal Returns (CARs) 75
4.5 Long-Run Returns 77
4.6 Heckman Selection Model 77
4.7 Merger Wave Identification 79
4.8 Descriptive Statistics 80

5 Empirical Results and Discussion 93

5.1 Chapter Overview 94

5.2 Takeover Likelihood 95

5.3 Initial Bid Outcome 103

5.4 Takeover Premiums 108

5.5 Target Firm Performance Subsequent to Failed Takeover Bid 119

5.6 Acquirer Announcement Period Returns 122

5.7 Long-Run Performance 131

6 Conclusion 136

7 Reference List 145

8 Appendix 158

List of Tables

Table 1 Additional Control Variables 69

Table 2 Pearson Correlation Matrix 83

Table 3 Descriptive Statistics – Target Firms 86

Table 4 Descriptive Statistics – Bidding Firms 87

Table 5 Descriptive Statistics – Deal Characteristics 91

Table 6 Quality of Analyst Forecasts 92

Table 7 Takeover contest likelihood 101

Table 8 Takeover Likelihood - Marginal Effects 102

Table 9 Probability of Takeover Contest 102

Table 10 Initial Bid Outcome 106

Table 11 Initial Bid Outcome – Toehold bidding 107

Table 12 Initial Bid Premium 113

Table 13 Final Bid Premium 114

Table 14 Bid Premiums and Bidder Hostility 115

Table 15 Takeover Premiums – 2 Step Heckman Selection Model 117

Table 16 Buy and Hold Abnormal Returns (BHARs) of Failed Takeover Bids 120

Table 17 Univariate Analysis I - Bidding Firm Announcement Period Returns 124

Table 18 Univariate Analysis II – Bidding Firm Announcement Period Returns 125

Table 19 Acquirer Announcement Period Cumulative Abnormal Returns 128

Table 20 Heckman Selection Model – Acquirer Announcement Period CARs 130

Table 21 Takeover Likelihood: Robustness Test 158

List of Figures

Figure 1 Buy and Hold Abnormal Returns: Post Acquisition Performance 133

Glossary

ATPs ..... Anti-Takeover Provisions

BHAR ..... Buy and Hold Abnormal Returns

CAR ..... Cumulative Abnormal Returns

GIM ..... Gompers, Ishii and Metrick (2003) Governance Index

E-Index/ E ..... Bebchuk, Cohen and Ferrell (2009) Entrenchment Index

DECLARATION

This work contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institutions and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text.

I give consent to this copy of my thesis, when deposited in the University Library, being made available for loan and photocopying, subject to the provisions of the Copyright Act 1968.

I also give permission for the digital version of my thesis to be made available on the web, via the University's digital research repository, the Library catalogue, the Australian Digital Theses Program (ADTP) and also through web search engines, unless permission has been granted by the University to restrict access for a period of time.

Signature_____ Date: 25/05/2014

Acknowledgements

I would like to begin the acknowledgements by thanking my principal supervisor, Prof Ralf Zurbrugg, for his ongoing support and encouragement over the past few years. I am also very appreciative of the insightful comments offered by my co-supervisor, Dr Paskalis Glabadanidis, during the early stages of my PhD candidature. Special thanks go out to Dr Chee Cheong and Dr Syed Zamin Ali, both of whom have now become good friends of mine, for their unwavering words of encouragement and instrumental guidance throughout my PhD. Finally, I would like to extend a very large thank you to my family and friends who have shared both the ups and downs of this journey with me.

Abstract

The key findings of this dissertation indicate that the benefits and costs associated with shareholder right limiting provisions are time-varying. During merger waves, I find evidence in line with the managerial self-interest hypothesis. This theory argues that managers use shareholder right limiting provisions to facilitate entrenchment and to pursue non-value maximising agendas. The results show that shareholder right limiting provisions significantly reduce the likelihood of receiving a bid and are unlikely to enhance either initial or final offer premiums. The long run performance of poor corporate governance firms, conditional on having successfully defended against an unwanted on-wave takeover bid, is also significantly lower when compared to firms regarded as having strong shareholder rights. Similarly, both announcement period bidder returns and long-run post-acquisition performance is inversely proportional to the number of anti-takeover defences a firm has in place during merger waves. When takeover activity is considered normal, however, these same provisions do not appear to impede the effectiveness of the market for corporate control. They are also no longer related to bidder announcement period returns. These novel findings are largely consistent with the notion that merger waves may foster agency driven behaviour, and therefore, prompt managers to use shareholder right limiting provisions to pursue sub-optimal operating and investment decisions. The additional insights offered by this thesis should be of significant value to both investors and policy makers alike.

1 Introduction

The objective of this thesis is to establish if a relationship between takeover activity and agency problems, arising from the availability of shareholder right limiting provisions, is evident in modern day takeover contests[1]. Given the landmark legal ruling that occurred in the United States during 1985, validating the use of provisions such as the poison pill, this study will focus on acquisitions consummated over the past twenty years[2]. To begin with, I investigate if shareholder right limiting provisions, conditioned on the number of takeovers, have an impact on the likelihood of a firm being targeted and ultimately acquired. Later, I also examine if these same anti-takeover provisions have an effect on announcement period returns for acquiring firms and their likelihood of engaging in acquisitions. If firms that make poor acquisitions are also less likely to be targeted, then this would be of particular interest to both practitioners and policy makers alike. Furthermore, although I explicitly focus on the U.S. merger and acquisition market, the findings of this thesis could help regulators globally in assessing the validity of shareholder right limiting provisions.

This research is motivated by a lack of consensus regarding the merits of permitting incumbents to adopt and deploy anti-takeover provisions (ATPs). In a seminal paper by Gompers et al. (2003), the authors compiled a measure of takeover vulnerability, referred to as the GIM index here forth, that considered the incidence of 24 anti-takeover provisions. It was argued that as the number of provisions utilised by a firm increased, so too would the costs of acquiring such a firm. If so, these provisions may impede the effectiveness of the

[1] Shareholder right limiting provisions can be broadly classified into delay and non-delay provisions (Kadyrzhanova and Rhodes-Kropf, 2011). Delay provisions provide incumbents with the ability to significantly slow down an ensuing takeover bid for the firm. Non-delay provisions, on the other hand, give management increased rights to pursue their own objectives. Throughout this dissertation, the terms *'shareholder right limiting provisions'* and *'anti-takeover provisions' (ATPs)* will be used interchangeably.

[2] See *Moran v. Household* (1985)

market for corporate control and therefore facilitate managerial entrenchment. Using data from the 1990s, and in line with this view, Gompers et al. (2003) found that firms with stronger shareholder rights (low GIM firms) generated higher profits and sales growth, made fewer acquisitions and reported lower capital expenditures. Furthermore, they also showed that the equity market performance of poor corporate governance firms (high GIM firms) was substantially lower than those firms with good corporate governance[3]. Bebchuk, Cohen and Wang (2013), on the other hand, found no evidence of this relationship being in effect between 2000 through to 2008. In yet another twist, Core, Guay and Rusticus (2006) showed that high GIM firms actually exhibited better performance than low GIM firms during the 2000 to 2003 time period. It is also important to understand the ramifications of ATPs given that the Australian evidence would favour a market where shareholder right limiting provisions are largely invalidated (Humphery-Jenner and Powell 2011).

Recently, the trend in the literature has been to investigate if, and how, ATPs enable management to achieve certain objectives given a particular setting. Chemmanur and Tian (2013), for example, show that ATPs spur corporate innovation by protecting incumbents from shareholder myopia. Sauvagnat (2013) find that anti-takeover provisions only have an impact on firm performance if the firm has a large share of intangible assets. Giroud and Mueller (2011) focus on competition and show that ATPs are only relevant when the industry a firm operates in is non-competitive. I contribute to the existing literature by examining the

[3] Following the convention in the literature, the distinction between good and poor corporate governance firms is based on the number of shareholder right limiting provisions that a firm employs. Broadly speaking, firms with few ATPs are classified as good corporate governance firms. Poor corporate governance firms, on the other hand, have many more provisions that in turn provide incumbents with substantially more power to pursue their own objectives.

impact of merger activity on the effectiveness of the market for corporate control, when ATPs are permitted.

A prominent empirical regularity in the takeover literature is the existence of merger waves. Merger waves can be defined as the clustering of merger and acquisition activity, both in terms of deal volume and transaction value, over time. Efforts to explain this clustering of takeover activity can be broadly categorised into Neoclassical (Q-theory) or Behavioural (market timing) based propositions. The neoclassical arguments suggest that increases in takeover activity are the result of industry shocks, such as technological, economic or regulatory changes, that precipitate the need for consolidation. Behavioural based theories, on the other hand, suggest that market mispricing may prompt managers of overvalued firms to engage in acquisitions. In other words, opportunistic managers may choose to use their overvalued equity as an acquisition currency to acquire other firms. Rhodes-Kropf, Robinson and Viswanathan (2005), for example, find strong evidence to support the theories advanced by Shleifer and Vishny (2003) and Rhodes-Kropf and Viswanathan (2004) that overvaluation significantly impacts merger activity. The empirical support for these theories, however, is again largely mixed and may even be time period specific. In a recent study by Dong, Hirshleifer, Richardson and Teoh (2006), both theories were actually shown to be empirically supported. To be specific, prior to the 1990s, the authors found evidence consistent with the neoclassical based theories. During the 1990s, however, empirical support for the neoclassical based theories faded.

Regardless of whether neoclassical or behavioural based arguments hold, this study is motivated by the empirically documented findings that suggest agency problems and

monitoring costs may be higher during periods of elevated takeover activity. Numerous studies have indeed shown that the performance of in-wave acquisitions perform significantly worse compared to those that were not initiated on a wave (Moeller, Schlingemann and Stulz 2005). Duchin and Schmidt (2013) find that as takeover activity increases, the quality of analyst forecasts decreases, uncertainty rises and the proportion of poor acquisitions made rises. The authors also show that both the efficiency of the corporate information environment and chief executive officer (CEO) turnover sensitivity to poor performance, during merger waves, may be substantially weakened. Duchin et al. (2013) argue that these conditions imply reduced monitoring and lower punishments for engaging in acquisitions that do not benefit shareholders. Accordingly, if agency problems are greater during periods of heightened takeover activity, I argue that shareholder right limiting provisions may be used to benefit incumbents and not shareholders. When agency problems are less severe, as evident during non-merger wave periods, then ATPs may enhance shareholder value.

I refer to two existing hypotheses when assessing the implications of anti-takeover provisions for firm value. The *managerial interest hypothesis*, based on the principal-agent problem framework (see Jensen and Meckling 1976), argues that incumbents may choose to use anti-takeover provisions to facilitate entrenchment and other non-value maximising endeavours. Clearly, any evidence in support of such a proposition would warrant significant attention by both investors and policy makers alike. In contrast to this view, the *incentive alignment hypothesis* posits that anti-takeover provisions protect managers from short-term investor behaviour and opportunistic bidders, enabling them to focus on the long-run. It is also argued that such provisions may enhance the negotiating capacity of management in the event of a

takeover bid and therefore, improve offer premiums. Accordingly, the removal of anti-takeover provisions would inadvertently reduce firm value if such views are indeed valid.

The key findings of this research project suggest that firms with poor corporate governance, as determined by the Gompers et al. (2003) GIM and Bebchuk et al. (2009) Entrenchment[4] indices, are actually more likely to be targeted when takeover activity is low. Accordingly, if poor corporate governance at the firm level is indeed associated with sub-optimal firm performance, it does not appear to be the result of the takeover market failing to effectively discipline the incumbents of such firms. When takeover activity is high, however, shareholder right limiting provisions appear to facilitate managerial entrenchment and deter takeover bids. This is consistent with the notion, and empirical evidence corroborated in this thesis, that agency problems may be more pronounced during merger waves. The probability of an initial bid succeeding, however, appears to be independent of anti-takeover provisions.

I find no differences in long-run buy and hold abnormal returns between well and poorly governed firms, pursuant to failed takeover bids during off-wave periods. This is again consistent with ATPs not facilitating value-decreasing behavior. During merger waves, when agency problems are presumably at their highest, I find a startling difference in long-run performance between high and low GIM firms. In the presence of reduced monitoring and lower punishments for engaging in non-value maximizing bids, poor corporate governance

[4] The Entrenchment index introduced by Bebchuk et al. (2009), referred to as the E-Index from here forth, is often regarded as a more refined measure of the GIM index. The E-Index only considers those provisions, six in total, that are viewed as important in the event of a takeover bid.

firms substantially underperform, relative to good governance firms, in the 24 month period following a failed takeover attempt.

There is also no notable difference in initial and final offer premiums between well and poorly govern firms, regardless of how active the takeover market is, when the target is approached by a friendly bidder. When the bidder is hostile, however, the evidence is rather mixed. During periods of high takeover activity, ATPs are positively associated with hostile offer premiums, as predicted by the *incentive alignment hypothesis*. Perplexingly, when takeover activity is low, ATPs are associated with lower hostile offer premiums.

Turning to the acquirer, I find a significantly negative relationship between abnormal announcement period returns (for bidding firms) and the number of ATPs during on-wave takeover bids, but not so, off-the-wave. These results are also robust to endogeneity concerns pertaining to selection and omitted variable biases. If management does not use ATPs to facilitate entrenchment when takeover activity is low, it may explain why markets do not react adversely to acquisition announcements made by high GIM and E firms off the wave. On the contrary, when takeover activity is high, markets respond increasingly more negatively to the announcement of a takeover bid by poorly governed firms. This shareholder non-value maximizing behavior may in part explain why high GIM and E firms are more likely to be targeted when agency problems subside (i.e. outside the merger wave).

The structure of this dissertation is as follows. In Chapter 2, the literature on shareholder right limiting provisions, takeovers, and merger waves are discussed in turn. In Chapter 3, the

primary hypothesis and subsidiary research questions are presented. The data and methodological framework used in this study are discussed in Chapter 4. The empirical results, discussion and conclusion sections are presented in Chapters 5 and 6, respectively.

2 Literature Review

2.1 Chapter Overview

There has been much research done on both the efficiency and effectiveness of the market for corporate control. Given the breadth of this field, in this literature review, I will focus primarily on corporate control studies that have empirically explored and/or also attempted to develop a theoretical framework to evaluate the impact of shareholder right limiting provisions. Naturally, it is important to assess the significance of earlier studies and theories on corporate takeovers in light of shareholder right limiting provisions. Accordingly, I continue the review by identifying and discussing these theories. It must, however, be noted that shareholder right limiting provisions were largely absent when many of these earlier studies/ theories came to fruition. In the final section of this review, I discuss the existing literature on merger waves, given the desire to integrate the literature on shareholder right limiting provisions with the market for corporate control and merger waves. The rationale for this is discussed further in Chapter 3.

2.2 The Market for Corporate Control

The market for corporate control can best be described as a platform where opposing management teams engage in contests to compete for the rights to manage corporate resources (Agrawal and Walkling 1994, Jensen and Ruback 1983). These contests may take the form of a merger, tender offer or proxy contest. Merger negotiations are done directly with target firm management, approved by the board of directors and voted on by shareholders for final approval or rejection. Tender offers, on the other hand, bypass the management of the firm and an offer to purchase the common stock of the target is made directly to its shareholders. Proxy contests occur when an attempt is made to gain a controlling seat on the board of directors.

Broadly speaking, takeovers materialise for either synergistic or disciplinary reasons (Morck, Shleifer and Vishny 1988). Synergistic takeovers occur when the value of two independent firms combined exceeds the value of the firms on their own. These synergies may arise from increased market power, economies of scale and/or taxation based benefits. Alternatively, takeovers may occur to discipline incumbents that are not pursuing value-maximising behaviour. Examples of non-value maximising behaviour include empire building through excessive growth and diversification, myopic behaviour, shirking, excessive remuneration packages and debt avoidance. Accordingly, it is crucial to a well-functioning equity and debt market that providers of capital are protected from misappropriation (Jensen 1993).

Previously, one of the most effective means of removing incumbents that do not act in the best interest of their shareholders was through a hostile takeover. Hostile takeovers, however,

are becoming increasingly less common (Andrade, Mitchell and Stafford 2001, Holmstrom and Kaplan 2001, Lehn and Zhao 2006), possibly because of the widespread adoption and use of shareholder right limiting provisions (Martynova and Renneboog 2005).

Numerous studies have suggested, and empirically shown, that shareholder right limiting provisions may actually destroy shareholder value by facilitating managerial entrenchment (Bauguess and Stegemoller 2008, Harford, Humphery-Jenner and Powell 2012, Masulis, Wang and Xie 2007). If these provisions do indeed impede the effectiveness of the market for corporate control, such knowledge would be of substantive importance to both regulators and investors alike. In what follows, I will introduce and discuss the indices used in the extant literature to proxy for both shareholder rights and corporate governance. These indices, which track the number of anti-takeover provisions a firm has, are frequently used to assess the impact of shareholder rights for firm value and the market for corporate control.

2.2.1 Corporate Governance – Shareholder Right Limiting Provisions

Research into corporate governance has received significant attention over the past two decades (Netter, Poulsen and Stegemoller 2009). This rise can be attributed to the series of scandals and collapses of major corporations in the United States and around the world, the growth in institutional and pension fund investors that are large enough to influence the corporate governance structure of a firm, the 1980s bust-up takeover wave and the ongoing integration of global capital markets (Holmstrom and Kaplan 2003). Understanding what constitutes good corporate governance is, therefore, of paramount importance.

Although the definition of corporate governance often varies from one study to the next (Netter et al. 2009), given the array of different options that can be used to help mitigate agency problems, most studies can be classified into one or more of four categories of forces acting on and monitoring the actions of managers. The four major corporate control forces are capital markets, the regulatory system, product and factor markets and internal governance (see Jensen 1993). The focus of this literature review, however, will be on capital markets and internal governance. In particular, I will examine the literature on shareholder right limiting provisions and how they impact the effectiveness of the market for corporate control and firm value.

Prior to the seminal work of Gompers et al. (2003), many studies only focused on individual/ limited subsets of shareholder right limiting provisions. Using the incidence of 24 governance rules tracked by the Investor Responsibility Research Centre (IRRC) database, Gompers et al. (2003) constructed an index that could be used to proxy for the strength of shareholder rights at the firm level. In a later study by Bebchuk et al. (2009), a more refined proxy for shareholder rights was presented. The authors argued that using a 'kitchen sink' approach to index construction, which includes many provisions without regards to their significance, may result in flawed evaluations of a firm's governance quality. The GIM index, for example, would by construction underweight many of the most significant governance rules, given the inclusion of many provisions that do not matter. In the Bebchuk et al. (2009) study, seventy five percent of the governance rules tracked by the GIM index were not significantly correlated with firm value.

Of the twenty four provisions tracked by the GIM index, only four constitutional and two takeover readiness provisions were identified as having the greatest importance (Bebchuk et al. 2009). The four *constitutional* based provisions were staggered boards, limitations to shareholder bylaw amendments, supermajority requirements for mergers and supermajority requirements for charter amendments. The two *takeover-readiness* provisions were the poison pill and golden parachute rules. These six provisions combined, make up the so-called entrenchment index, here forth referred to as the E-Index. Firms with higher (lower) E-Index scores are regarded as having weaker (stronger) shareholder rights.

In the following two sub-sections, I will briefly discuss the main constitutional and takeover readiness provisions that make up the GIM and E indices. This is then followed by a review of the literature that relates the aggregate indices (GIM and E-Index), not the individual provisions, to firm value and the takeover market. In this study, I too adopt the later approach when assessing the significance of ATPs.

2.2.1.1 Constitutional Limitations

As stipulated by Bebchuk et al. (2009), constitutional limitations can significantly impact the ability of firm shareholders to achieve their objectives through voting. Constitutional limitations such as classified boards, limitations to bylaw/ charter amendments and supermajority requirements for mergers make it more difficult for majority shareholders to have their way.

Classified boards, otherwise known as staggered boards, divide the incumbents of an entity into different classes (usually three), with only one class of directors being required to stand for nomination each year. Classified boards are an effective takeover defence given that only a fraction of the board can be replaced in any given year. Firms without a classified board (i.e. unitary boards) require all directors to stand for election each year.

Much of the existing literature has failed to find evidence in favour of retaining the classified board structure (Bates, Becher and Lemmon 2008, Bebchuk et al. 2009, Bebchuk and Cohen 2005, Faleye 2007). The general consensus is that classified boards lower firm value and decrease the likelihood of a firm being targeted. Faleye (2007) partly attributed this finding to the insulating effect of classified boards and reduced director effectiveness. Given these findings, there has been strong opposition to the classified board structure by a variety of organisations and institutional investors (Duru, Wang and Zhao 2013). The Shareholder Rights Project (SRP) operated by Harvard Law School, for example, has endeavoured to improve corporate governance practices at publicly traded corporations by pushing for board declassification.

Not all studies, however, have found evidence of classified board structures reducing firm value. Both Stein (1988) and Shleifer & Summers (1988), for example, suggested that anti-takeover provisions may be advantageous to shareholders by not discouraging managers from making investments that serve the long-term interest of the shareholders (i.e. make efficient investments in long-term projects), and therefore, reducing managerial myopia. Furthermore, it could also be argued that classified boards promote board continuity, stability and director independence as suggested by Koppes, Ganske and Haag (1999) and Wilcox (2002).

In a more recent study, Duru et al. (2013) show that the merits of board classification depend on the monitoring costs and firm advisory needs. When a firm has low (high) monitoring costs and greater (lower) needs for advisory services, board classification appears to be beneficial (harmful). Alternatively, when monitoring costs are high and advisory needs are low, classified boards are harmful to firm value.

2.2.1.2 Takeover-Readiness

Two of the most significant takeover readiness measures include the poison pill and golden parachute provisions. It is argued that such provisions may facilitate managerial entrenchment given the increased costs associated with a takeover, when these provisions are available.

Poison pills enable target firm shareholders (excluding the hostile bidder) to purchase the acquirer's stock, stocks in the target or both at a substantial discount to the prevailing market prices (Bebchuk et al. 2005). These pills, consisting of rights and warrants, become exercisable when a hostile bidder acquires more than a set percentage of the outstanding shares in a target – typically in the vicinity of 10 to 15 percent. Hostile bidders are explicitly excluded from participating in these shareholder rights plans and therefore, this may result in significant dilution of their voting power and economic position.

Research into the significance of poison pills and their impact on firm value and the market for corporate control has been largely mixed. Prior to the landmark legal case of *Moran v. Household* in 1985, many legal experts and scholars questioned the legality of implementing

a poison pill in practice. Following the Supreme Court's decision to validate their use in Delaware, many companies and indeed other US states subsequently adopted/ accepted the use of such provisions. The number of firms adopting poison pill provisions following the *Moran v. Household* decision was staggering. Cremers and Ferrell (2010), for example, reported that the number of firms (in their sample) with poison pills went from 5% in 1984 to over 60% in the three years following the ruling. Cremers et al. (2010) examine the significance of corporate governance provisions on firm value. Their findings suggest that the poison pill provision is a key determinant behind the observed negative relationship between the Gompers et al. (2003) index and firm value.

Golden parachute provisions, on the other hand, are a severance based arrangement that calls for the outlay of cash/ non-cash based compensation to top level management staff, in the event that they are terminated, demoted, and/or resign follow a change in control (Bebchuk et al. 2005). Similar to the controversy surrounding the use of classified boards, golden parachutes have also attracted much debate.

Numerous studies have stipulated that golden parachute arrangements act to mitigate potential salary losses resulting from successful takeover contests and therefore, have an overall positive effect because management is less likely to not support a beneficial takeover bid (Harris 1990, Jensen 1988, Machlin, Choe and Miles 1993). Similarly, Knoeber (1986) and Berkovitch and Khanna (1991) argue that golden parachutes serve to assure managers that deferred compensation will not be captured by opportunistic acquirers. Cotter and Zenner (1994), on the other hand, find no relationship between golden parachute payments and the

probability of being acquired. Rather, they find that the gains from the shares that incumbents own have a much more significant impact on the likelihood of being acquired. In contrast to the above studies, Subramaniam and Daley (2000), Singh and Harianto (1989) and Wade, O'Reilly III and Chandratat (1990) all find evidence suggestive of entrenched managers using golden parachutes to impair the disciplinary role of the takeover market.

Furthermore, numerous studies have argued that golden parachutes not only affect the likelihood of a firm being targeted but also the outcome of a bid (Lefanowicz, Robinson and Smith 2000). Golden parachutes may result in lower bid premiums and increase the likelihood of incumbents going ahead with bids that are not in the best interest of the firm's shareholders. In other words, they affect the incentives that management has to pursue negotiations that are in the best interest of shareholders. Bebchuk, Cohen and Wang (2013), for example, find that golden parachutes are actually associated with higher expected acquisition premiums. That said, in the event of an acquisition, realized premiums are actually lower for firms employing golden parachutes. They do, however, find that the higher acquisition likelihood for golden parachute firms almost completely offsets the impact of lower bid premiums.

2.2.2 Impact of Shareholder Right Limiting Provisions

Having discussed the significance of individual ATPs, I now turn to the literature that focuses on the aggregate number of provisions that a firm employs. In particular, I examine the literature on firm performance, takeover likelihood, the premiums offered in the event of a

takeover and acquirer returns, both over the short and long run investment horizons, and how it relates to corporate governance.

2.2.2.1 Firm Performance

Turing to firm performance, Gompers et al. (2003) showed that an investment strategy that went long (strong shareholder right firms) and short (weak shareholder right firms) in a portfolio of firms that constituted the first and last deciles of the GIM index, respectively, earned abnormal returns of 8.5% per annum. This finding is perplexing given that it implies that investors underestimate the significance of good governance. The governance structure of a firm, based on the number of shareholder right limiting provisions, does not reveal new information about a firm's future cash flows, and therefore, as stipulated by Core, Holthausen and Larcker (1999) should not be priced. In addition to the poor equity performance that was observed for the sample of weak shareholder right firms during the 1990s, these so called dictatorship firms also had lower firm value, lower profits, lower sales growth, higher capital expenditure and made more corporate acquisitions. Similarly, Bebchuk et al. (2009) showed that increases in the E-Index were monotonically and statistically significantly, associated with reductions in firm value.

Contrary to the findings of Gompers et al. (2003) and Bebchuk et al. (2009), results presented by Core et al. (2006) suggest that poor corporate governance does not cause poor stock returns. This is also consistent with the notion advanced by Core et al. (1999), which posits that in an efficient market, no relationship between corporate governance and stock returns should be realised. If a relationship does exist, it could imply that investors systematically underestimate the significance of corporate governance, which is public information, and

therefore, causes the poor stock returns. Using analyst earnings forecasts and announcement period returns around the public disclosure of actual earnings, Core et al. (2006) find that neither analysts nor shareholders are surprised by the differences in operating performance. The authors do, however, find some evidence of period specific returns being responsible for the results Gompers et al. (2003) document. Surprisingly, in contrast to the 1990s, high GIM firms had better stock returns during the 2000 to 2003 investment horizon that Core et al. (2006) examined.

Giroud et al. (2011) also examined the relationship between equity returns and corporate governance. However, in contrast to earlier studies they also controlled for the level of industry concentration/ competition based on the Herfindahl-Hirschman index (HHI). The authors found that the realised alpha from a Democracy-Dictatorship hedge portfolio was largely dependent on the level of industry competition. In the lowest HHI tercile (firms from competitive industries), the hedged portfolio alpha was small and insignificant. For the highest HHI tercile portfolio, the alpha was large and statistically significant. These results imply that firms from non-competitive industries benefit substantially more from good governance relative to those that are from competitive industries. In further tests, Giroud et al. (2011) also found that the relationship between governance and various measures of operating performance and firm value only held for firms in non-competitive industries.

Core et al. (2006) examined if the poor stock performance of high GIM firms was caused by investors re-evaluating the likelihood of a firm being targeted. If a firm is targeted, it will have an impact on the cash flows that an investor receives. To highlight the significance of this, Andrade et al. (2001) report median offer premiums of approximately 38% - a non-

trivial return for target firm shareholders. Accordingly, if shareholder limiting rights reduce the likelihood of a firm being targeted, and investors systematically underestimate this probability, it would cause poor stock performance following the price adjustments that follow revisions in shareholder expectations. When examining this possibility, Core et al. (2006) found no evidence of differences in the frequency of takeovers between high and low GIM firms.

2.2.2.2 Takeover Likelihood

The impact of shareholder right limiting provisions on takeover likelihood, however, is largely mixed. The empirical literature has found evidence of increased, decreased, and no relationship with takeover likelihood and these provisions. Bauguess et al. (2008), for example, find no evidence of shareholder right limiting provisions facilitating managerial entrenchment. In fact, the authors find that GIM is positively related to takeover likelihood for their sample of S&P 500 firms between 1994 and 2005. If shareholder right limiting provisions entrenched management, a negative relationship between GIM and takeover likelihood should be observed. Field and Karpoff (2002) focus on IPO firms and, contrary to Bauguess et al. (2008), find that these provisions are negatively related to subsequent takeover likelihood.

2.2.2.3 Takeover Premiums

Proponents of shareholder right limiting provisions argue that they enable incumbents to extract higher offer premiums from bidding firms. Again, the evidence on this is rather mixed. Field et al. (2002), for example, find no relationship between shareholder right

limiting provisions and takeover premia. This is also consistent with a recent study by Sokolyk (2011) that also found no relationship when focusing on the GIM index in the aggregate. Kadyrzhanova and Rhodes-Kropf (2011), on the other hand, find that provisions capable of delaying a takeover do have a positive impact on realised takeover premiums but only so in concentrated industries.

Nevertheless, there is surprisingly little empirical research on the relationship between shareholder right limiting provisions in the aggregate and takeover premiums. Much of the existing literature focuses on individual provisions and their impact on takeover premiums. Field et al. (2002) focus on IPO firms and find that although anti-takeover defences do indeed reduce the likelihood of acquisition, they have no impact on realised offer premiums. In a study undertaken by Subramanian (2005), a theoretical model showing the relationship between takeover defences and offer premiums is presented, interviews with senior M&A investment bankers on Wall Street are undertaken and empirical evidence to support the model predictions are also provided. The authors show that in a stylized model, takeover defences increase offer premiums. Consistent with this view, Comment and Schwert (1995) also argue that anti-takeover provisions benefit shareholders as they enable incumbents to negotiate higher offer premiums. The significance of these antitakeover defences, however, disappears following inclusion of real world factors into the Subramanian (2005) model. The presented theory suggests that only a fraction of friendly acquisitions is negotiated in the shadow of a hostile takeover threat. Corroborating this proposition, interviews carried out with senior M&A investment bankers confirmed that anti-takeover defences were largely irrelevant. When specifically focusing on the bargaining effect of poison pills, the author

found no statistically or economically significant difference in offer premiums between firms incorporated in states that permitted potent poison pills versus those that did not.

Two of the most notable studies that examine the relationship between offer premia and a corporate governance index, such as the GIM, are those of Sokolyk (2011) and Kadyrzhanova et al. (2011). Sokolyk (2011) finds no relationship between the Gompers et al. (2003) GIM index and takeover premia. The author attributes this finding to the significant but off-setting effects of provisions in the index. The second cited study controls for the level of industry concentration, based on the HHI, and finds that the GIM is both positively and significantly related to takeover premia but only so for concentration industries.

Furthermore, Kadyrzhanova et al. (2011) show that it is the delay-provisions, such as classified boards, blank check, special meeting and the written consent provisions, contained within the GIM index that bring support to the bargaining hypothesis of ATPs and corresponding shareholder value enhancement. The classified board and delay index (based on the four provisions listed above), are found to be positively related to target premiums. The economic significance of these provisions is also very large. Classified boards, for example, are associated with a 31.4% increase in the bid premium magnitude. But again, this is only for the highest level of industry concentration. At the lowest level of industry concentration, classified boards are only associated with a 2.9% increase in offer premiums. The 31.4% increase in bid premia is equivalent to a wealth gain of approximately $421.7 million. As pointed out by Kadyrzhanova et al. (2011), this figure is quite substantial given that the average wealth gain to target firm shareholders in their sample and at the announcement of a bid, is $331.6 million. The remaining provisions in the GIM index are not

significant when explicitly controlling for these delay provisions. The results continued to hold when using the delay index, in place of the classified board provision, implying that all four delay provisions are relevant.

2.2.2.4 Acquirer Returns

Turning to the acquirer announcement period returns, Masulis et al. (2007) find an inverse relationship between the number of shareholder right limiting provisions and announcement period returns for a sample of completed bids between 1990 and 2003. This finding is consistent with the notion that anti-takeover provisions reduce the effectiveness of the market for corporate control, and therefore, may result in managers being more willing to engage in acquisitions that do not benefit shareholders. The findings were also robust to product market competition, leverage, CEO equity incentives, institutional ownership and board characteristic controls. Masulis et al. (2007) also considered the possibility that chief executive officer (CEO) quality may be reflected in the announcement period returns. If poor-quality CEOs adopt ATPs for entrenchment purposes, it is also these CEOs that are more likely to make bad acquisitions. Although Masulis et al. (2007) confirm that better quality CEOs do indeed make better acquisitions, ATPs continue to have an adverse impact on announcement period returns.

The sources of value destruction in acquisitions (i.e. negative announcement period returns) by entrenched managers were investigated in a recent study by Harford et al. (2012). In the study, several factors are identified as significant sources of value destruction. The first source of wealth destruction is attributable to the choice of target. Harford et al. (2012) show that entrenched managers disproportionally avoided private targets. This is perplexing given

that acquisitions of private targets are generally well received by bidding firm stakeholders. Next, when entrenched managers do target private firms or public firms with block-holders, cash is the preferred method of payment. Again, this is most likely done to avoid the scrutiny (Chang 1998, Fuller, Netter and Stegemoller 2002) and the potential creation of block holders. Similarly, if public targets have large block-holders, entrenched managers of the bidding firm tend to avoid stock exchanges. Finally, Harford et al. (2012) find evidence that suggests entrenched managers make less synergistic acquisitions and tend to over-pay.

In another interesting study undertaken by Humphery-Jenner et al. (2011), the authors showed that acquisitions undertaken by Australian based companies, a market where ATPs are largely absent, are more profitable compared to those undertaken by US based firms. The dollar return from acquisitions by large Australian acquirers, on average, ranged from $A5.56 million to $A7.79 million. This result was contrasted to the large dollar losses reported by Moeller, Schlingemann and Stulz (2004) of $US25.2 million, on average, for large bidding firms in the US market. Furthermore, in the absence of ATPs, Humphery-Jenner et al. (2011) also found that Australian bidders generated positive returns for shareholders even when using stock as the method of payment. This is a scenario which usually results in negative announcement period returns for US based bidders (Travlos 1987). Finally, in regards to the takeover premiums offered, Humphery-Jenner et al. (2011) show that offer premiums by Australian based companies are more likely to reflect actual synergies rather than managerial hubris (i.e. overpayment).

2.2.3 Takeover Theories

In what follows, I will discuss some of the most notable theories that have emerged to explain the rationale for participating/ being involved in the corporate takeover market. It is important to control for these existing theories, many of which have been reaffirmed with empirical support, when examining the significance of shareholder right limiting provisions.

2.2.3.1 Bidder Overvaluation

Shleifer et al. (2003) posit that overvalued bidders can create significant value for shareholders by using their overvalued equity as an acquisition currency to buy targets, given that the mispricing will eventually be corrected. Numerous studies have indeed shown that acquirers tend to be more overvalued than the bidders (Dong et al. 2006, Rhodes-Kropf et al. 2005). Savor and Lu (2009), in particular, find empirical evidence supportive of the hypothesis advanced by Shleifer et al. (2003). The authors show that overvalued bidders involved in completed bids outperform similarly overvalued bidders that are unsuccessful in consummating a bid.

In contrast to these studies, Fu, Lin and Officer (2013) find that stock based acquisitions driven by acquirer overvaluation is not motivated by shareholder wealth creation, as suggested by Shleifer et al. (2003), but rather it is used to enhance CEO compensation. The authors also show that these acquisitions are also more likely to be initiated by the firms with the weakest corporate governance regimes. In response to the Savor et al. (2009) study, Fu et al. (2013) argue that the authors incorrectly assume that all acquirers who announce stock based acquisitions, are as equally overvalued and that overvaluation is the predominant

reason for using a stock-swap. Based on the Fu et al. (2013) sample, however, approximately one third of the announced stock based acquisitions are motivated by means other than acquirer misvaluation. Accordingly, this would impact the robustness of the findings that Savor et al. (2009) present, which ultimately suggest that stock-swaps enhance shareholder value. Similarly, Feng and Lev (2011) find that overvalued bidders commonly make ill-conceived acquisitions given that, in the years following the acquisition, goodwill write downs are frequently observed. This implies that the bidders either overpaid for the target or the choice of target was not appropriate. The authors also show that bidder overpricing is related to the level of activism in the takeover market and growth in goodwill, and predicts the level of goodwill that is subsequently written off. In line with these empirical studies, Jensen (2005) also suggested that agency costs rise when equity becomes overvalued and corporate governance is incapable of mitigating such costs.

Accordingly, the findings of Fu et al. (2013) differ substantially to those of Savor et al. (2009) who find that engaging in a stock based acquisition generates substantial shareholder value. The findings are also inconsistent with the theory advanced by Shleifer et al. (2003) that argues that shareholder wealth can be created by acquiring targets using overvalued bidder equity as an acquisition currency.

2.2.3.2 Target Valuation

Firms with low market to book ratios may be seen as cheap acquisitions for firms wanting to acquire certain assets in place (Hasbrouck 1985). Eddey (1991), for example, suggests that undervalued firms are attractive targets because they enable an acquirer to immediately realise economic gains via the process of asset striping. Similarly, Manne (1965) postulates

that the low stock prices provide a capital gain to an acquirer who may be better able to more efficiently employ the firm's assets, in comparison to the existing management.

2.2.3.3 Inefficient Management/ Firm Underperformance Hypotheses

It is commonly suggested that the market for corporate control acts as a disciplinary mechanism to mitigate the agency costs of equity. Given the corporate structure of modern firms whereby there is a separation of ownership and control, agency costs could surface because the managers may not have enough of an incentive to act in the best interest of the shareholders (Jensen et al. 1976). However, if a competitive market for corporate control does exist, whereby alternative management teams compete for the right to control assets, the interests of managers and shareholders should be better aligned (Fama 1980). The reason being that in the event of a corporate takeover, the existing management would probably be replaced with a more efficient team.

Proxies that have commonly been used in the empirical literature to gauge the extent of management incompetence, include pre-takeover bid stock price performance, Tobin's Q and/or firm operating performance (i.e. industry adjusted EBITDA to total assets). Proxies are obviously used because only the management of a firm knows the true operating efficiency of the business (Denis and Kruse 2000, Manne 1965). The existing literature, which examines the link between poorly performing firms and takeover likelihood, is not unanimous. Franks and Mayer (1996), for example, examined whether hostile takeover bids were the result of poor management performance. Although they found that hostile takeovers were associated with high board turnovers and significant post-takeover restructuring, there was little evidence of poor pre-bid firm performance instigating these takeovers. These

findings are consistent with many other studies in this area (Agrawal and Jaffe 2003, Agrawal et al. 1994, Dodd and Ruback 1977, Kini, Kracaw and Mian 1995, Langetieg 1978, Martin and McConnell 1991). Nevertheless, studies such as those done by Asquith (1983) and Smiley (1976) have found a significantly positive link. These mixed findings are not surprising given the fact that firm underperformance is only one of numerous takeover motives. The general consensus, however, is that the relationship between takeover targets (taken as a whole) and firm underperformance is weak (Agrawal et al. 2003).

2.2.3.4 Free Cash Flow Theory and Payout Policy

Free cash flow, as defined by Jensen (1986), is the cash flow remaining to a firm's management after all positive net present value (NPV) projects have been funded. It is argued that in the absence of positive NPV projects, any remaining free cash flow should be returned to shareholders in order to mitigate overinvestment concerns and to maximise economic welfare. Such actions would rightly reduce the resources available to management, increasing the ability of the market to monitor the firm and thereby, limiting overinvestment concerns – see Rozeff (1982) and Jensen (1986). Nevertheless, in the presence of agency problems, management may choose to not return the free cash flow to shareholders.

If firms have high free cash flows that are not being distributed to shareholders, it may increase the likelihood of a disciplinary/ hostile takeover bid (Jensen 1986). Numerous studies have indeed examined how the payout policy of a company, given its free cash flows, affect it likelihood of being acquired. Jensen (1986), in particular, argued that firms with high free cash flows and limited investment opportunities are likely to be targeted in the event that management do not return the cash to shareholders and instead choose to engage in self-

dealings. In contrast to this proposition, studies by Harford (1999) and Pinkowitz (2000), amongst others, find that takeover likelihood actually decreases when corporate cash holdings are high. The authors argue that large cash reserves can deter unwanted bids by improving the ability of a target to defend itself.

Research has also shown that due to information asymmetries, internal and external sources of financing may not be perfect substitutes and that investment activity do depend on retained earnings (Bond and Meghir 1994, Myers and Majluf 1984, Schiantarelli 1996, Stiglitz and Weiss 1981). Thus, low (high) dividend payout ratios would result in higher (lower) investments. Thus, provided profitable investment opportunities do exist, higher retained earnings would allow firms to make investments which otherwise may have not been possible in the presence of financing constraints. This could, therefore, reduce the likelihood of a takeover bid because such firms would presumably perform better in the long-run (Dickerson, Gibson and Tsakalotos 1998). Critically, however, this view relies on the assumption of management acting in the best interests of their constituents. Accordingly, studies should control for both the level of growth opportunities and potential agency problems when assessing the significance of corporate cash holdings for takeover likelihood.

2.2.3.5 Financing Related Constraints

The growth-resource imbalance theory hypothesises that a firm, which has a mismatch between growth opportunities and available resources, is likely to be a potential takeover candidate or initiate a takeover bid depending on its situation. For example, a low growth but resource rich firm may target a resource poor but high growth firm. This takeover hypothesis

has been adopted in numerous takeover prediction studies and appears to be significant in explaining takeover likelihood (see: Ambrose and Megginson 1992, Palepu 1986).

The extent to which a firm is levered may also play a very significant role in determining acquisition likelihood. In the mergers and acquisition literature, countless studies have been done which attempt to explain the optimal capital structure of a firm. In the takeover prediction literature, it has been hypothesised that firms which do not fully capitalise on the advantages of using debt are more likely to be the subject of a takeover bid (Lewellen 1971). Alternatively, firms that are overleveraged may also become more susceptible to takeover bids. During the late 1980s and early 1990s, for example, a recession in the UK made companies experiencing significant financial distress more vulnerable to takeovers (Barnes 1999, Fallon and Srodes 1988). However, it has also been found that financial leverage may play no role in determining a firm's acquisition likelihood (Hasbrouck 1985).

2.2.3.6 Size Defence

The size of a firm has also been shown to have an impact on the likelihood of a takeover bid. Empirical studies employing this variable have generally found an inverse relationship between the size of a company and its takeover likelihood (Dietrich and Sorensen 1984, Harris, Stewart, Guilkey and Carleton 1982, Palepu 1986, Powell 2001, Walter 1994). This finding supports the proposition that as firm size increases, it becomes increasingly more difficult to acquire the firm due to higher transaction and integration costs. Nevertheless, studies do occasionally find a positive relationship between size and takeover likelihood (Hughes 1989). Although not explicitly tested in the takeover prediction literature, it would be expected that the size of a firm becomes less important as a takeover deterrent during

periods of rapid credit expansion. The fourth US merger wave, for example, which took place during the 1980s witnessed hostile takeover attempts of very large companies via the use of junk bond financing. These large companies were previously thought to be immune to takeovers due to their size (Owen 2006).

2.3 Merger Waves

Given that the aim of this study is to integrate corporate governance with the merger wave literature, I now turn to reviewing the research on merger waves. Merger waves can be defined as the clustering of takeover activity, both in terms of deal volume and transaction value, over time. This time varying behaviour has not only been observed in the United States but also around the world (Gugler, Mueller and Yurtoglu 2006). Although Golbe and White (1993) were amongst the first to empirically document the cyclical pattern of takeover activity, periods of abnormally high takeover activity have been documented going back well over a century (Martynova and Renneboog 2008). In the US, for example, the first merger wave began in 1897 and ended in 1903. Goergen and Renneboog (2004), also present evidence suggesting that even in Europe, a merger wave was in effect during this period. To date, six major merger waves have been recorded and exhaustively examined by the literature. Many studies have examined the characteristics and dynamics of merger waves (see: Chidambaran, John, Shangguan and Vasudevan 2010, Martynova et al. 2008, Yan 2006).

In what follows, I will briefly discuss the underlying drivers and motives for the six major merger waves observed to date. This will be followed by a discussion of the theoretical

models that have emerged to explain the existence of such waves. In the last section, I will also briefly discuss the implications for performance, both in the short and long term, when engaging in an acquisition on-the-wave.

2.3.1 Historical Merger Waves

Much research has been undertaken on the six merger waves that have been observed to date. Although all six waves are largely unique in their underlying drivers and motives for merging, certain characteristics are common to all.

The period (1897 - 1903) has become known as the *Great Merger Wave*. This wave was, in part, precipitated by the end of an economic depression, legislative changes and the development of trading in industrial stocks on the New York Stock Exchange (NYSE) (Martynova et al. 2005). Banerjee and Eckard (1998) concluded that this merger wave was fuelled by the desire to improve operational efficiency. In contrast to this view, Lamoreaux (1988) and Stigler (1950) argued that these mergers were enacted to form monopolies in an effort to reduce price competition rather than to exploit economies of scale. This wave ended in 1903 when equity markets precipitously declined in value. The next merger wave (1910s-1920s) was characterised by the formation of oligopolistic firms, as opposed to monopolies, given the introduction of anti-trust legislation (Stigler 1950). This legislation was introduced to combat the lack of competition that had arisen as a result of the Great Merger Wave.

A third merger wave began in the 1950s and ended in 1973 following the oil crises. In the US, the focus of this merger wave was on diversification. Following the economic recession,

precipitated by the oil crisis, a fourth merger wave emerged in tandem with the ensuing economic recovery of the 1980s. In contrast to the third merger wave, this wave was characterised by a large number of divestitures, hostile bids (disciplinary in nature), leveraged buyouts and management buyouts. Amendments to anti-trust legislations, financial sector deregulation, rapid growth in junk bond financing and technological advancement all played a role in the development of this wave (Martynova et al. 2005).

Many of the takeovers that occurred during the fourth aggregate merger wave (1981-1989) were initiated to undo (i.e. breakup) the many diversifying acquisitions that were central to the previous merger wave (Shleifer and Vishny 1991). One of the main arguments for engaging in diversifying acquisitions during the 1960s was to develop an efficient internal capital market. The need for such an internal capital market, however, was largely reduced given the technological, economic and regulatory changes that occurred during the 1980s. Accordingly, internal capital markets were seen as unnecessary and costly for firm shareholders (Bhide 1990). In summary, industry shocks, desire to limit managerial discretion and a trend towards de-conglomeration were seen as the main drivers behind this merger wave (Holmstrom et al. 2001). In addition to this, Donaldson (1994), argued that many of the mergers occurred because of the increasing importance and influence of institutional investors and the transition of power from corporate stakeholders to shareholders.

The fifth and largest merger wave, both in terms of deal volume and transaction value, began in 1993 and ended in 2000. Again, the start and end of this merger wave coincided with the economic boom and collapse of equity markets, respectively. Many of the takeovers that

were initiated during this period were cross-border transactions and undertaken to ensure competitiveness at a global level in the face of ongoing globalisation. In contrast to the previous merger wave, the majority of bids made during this period were friendly in nature. One reason for this shift relates to regulatory changes that occurred in the late 1980s. In response to the large number of hostile takeover bids, firms in some US states were permitted to use anti-takeover provisions. These provisions would have made hostile takeover bids virtually impossible. From 1998 through to 2001, and in the aggregate, bidding firm shareholders lost about 12 cents for every dollar spent on an acquisition upon announcement of a takeover bid (Moeller et al. 2005). This is equivalent to approximately $240 billion, more than 34 times greater than the losses incurred throughout all of the 1980s. Moeller et al. (2005), however, did note that this result was largely driven by the extremely large losses made by a relatively small number of bidders (Moeller et al. 2005). If these few bids are excluded, the results actually suggest that the wealth of bidding firm shareholders improves. Another notable characteristic of these large loss deals was that they were isolated to very high valuation companies.

The sixth merger wave started in 2003 and ended in late 2007. In a recent study by Alexandridis, Mavrovitis and Travlos (2012), the authors noted that acquirers were both less acquisitive and optimistic, offered lower takeover premiums and were more cautious in their corporate acquisition decisions. In spite of this, the authors still find evidence of substantial value destruction arising from these deals. The wealth loss was also shown to be comparable to that of the previous wave.

As highlighted by Martynova et al. (2005), and corroborated by the above discussion, each wave is fairly unique in terms of its underlying drivers and objectives. Nevertheless, economic recoveries, rising equity market valuations and rapid credit expansion are examples of factors common to most waves.

2.3.2 Theoretical Explanations

Much of the existing literature that attempts to theoretically and empirically explain the existence of merger waves can be grouped into two distinct categories. *Neoclassical* based explanations hypothesise that mergers cluster because of industry shocks, brought about by changes in regulation and/or technology (see: Andrade et al. 2001, Harford 2005, Holmstrom et al. 2001). *Behavioural* based explanations, on the other hand, tend to focus on the implications of stock market mispricing and/or agency based arguments.

Neoclassical-based arguments stipulate that merger waves are the result of industry shocks, which in turn prompt managers to engage in mergers or partial-firm acquisitions in an effort to reallocate capital as efficiently and quickly as possible Harford (2005). In other words, an economic, technological, or regulatory shock may impact the dynamics of a firm's operating in such a way that mergers are a necessity. Accordingly, if all managers act simultaneously a merger wave is started.

Models consistent with the neoclassical-based explanations include those presented by Jovanovic and Rousseau (2002) and Harford (2005). Jovanovic et al. (2002) posited that increased variation in q ratios, brought about by changes in technology, results in high q

firms acquiring low q firms during merger waves. Harford (2005) adds to this standard neoclassical explanation by stating that sufficient macro-level liquidity is also required to propagate a merger wave that includes multiple industries. An industry shock will result in an industry-specific merger wave if accompanied by sufficient capital liquidity. An aggregate merger wave, however, is only expected when macro-level liquidity is also high. Thus, even if industry-level shocks do not cluster in time, macro-level liquidity will result in managers taking action to adapt to previous shocks, at the same time. This explains why aggregate merger waves are observed: it is simply the reaction by incumbents to the shocks that precede the merger wave, that cluster in time.

Proponents of behavioural-based explanations often argue that the empirical evidence does not support the predictions of the neoclassical hypothesis. If the hypothesis holds, proponents argue that positive stock returns, subsequent to an acquisition, should be observed Shleifer et al. (2003). When surveying the literature, however, few studies find evidence of positive long-run returns. In response to this, Harford (2005) stated that the neoclassical hypothesis only predicts that the subsequent performance of the merged firm will be better than the performance of the un-merged firm. Given that the un-merged firm performance is unobservable, it is difficult to assess the validity of this prediction empirically.

The relationship between market valuation and merger activity has long been observed. In response to this, theories based on marking timing have also emerged. Shleifer et al. (2003), for example, develop a model whereby firm managers use overvalued equity as an acquisition currency to acquire the assets of undervalued targets. That said, the model also allows for the acquisition of overvalued targets but it is assumed that these targets are less

overvalued than the bidder. An alternative theory presented by Rhodes-Kropf et al. (2004), but still based on a non-neoclassical argument, posits that target firm managers are more likely to accept the stock of overvalued bidders because of a tendency to overestimate realisable synergies when stock market valuations are high. In an empirical study, later done by Rhodes-Kropf et al. (2005), evidence strongly in favour of the two models (discussed above) was found.

In contrast to the neoclassical hypothesis, whereby positive performance improvements are expected following a merger, there are no such predictions for the behavioural framework. In fact, as pointed out by Harford (2005), because the theory assumes that there is no economic rationale or realisable synergies for the merger, the post-merger performance is expected to be poor. In other words, under the presumption that there are no synergies to offset the costs of integration, poor performance is a given.

2.3.3 Performance of on-wave takeovers

2.3.3.1 Announcement period returns

Numerous studies have examined the announcement period returns for both on-wave and off-wave takeover bids. Nevertheless, the announcement period returns of in-wave acquisitions are observed to be higher during the beginning of the wave. Acquisitions announced later in the wave tend to have poorer returns and are more likely to be driven by self-interested managers (Goel and Thakor 2010). Interestingly, in a recent study by Duchin et al. (2013), the authors failed to find any statistically significant difference in announcement period returns, between on-wave and off-wave takeover bids. Contrary to this finding, Bouwman,

Fuller and Nain (2009) observe higher announcement period returns during high-valuation markets. Although they do not refer to high-valuation markets as a merger wave, they do note that significantly more acquisitions occur during this period (i.e. high valuation markets) compared to low or neutral valuation markets. Accordingly, it is interesting to observe these differences given that merger waves coincide with high-valuation markets.

2.3.3.2 Long term performance

In a recent study by Duchin et al. (2013), the ramifications of engaging in an acquisition during periods of high takeover activity, were examined. Focusing on takeovers that occurred during the 1980s through to 2009, they find that returns to bidding firm shareholders over a 36 month window following the completion of a bid are significantly lower for those undertaken during a wave. The authors attribute this finding to poorer quality of analyst forecasts, greater uncertainty and weaker CEO turnover-performance sensitivity that is evident during merger waves.

3 Hypothesis Development and Research Questions

3.1 Overview of Research Objectives

Two prominent theories have been advanced by the extant literature to explain the impact of shareholder right limiting provisions for firm value. Although often not well received, advocates of shareholder right limiting provisions argue that they can be used to enhance firm value. The bargaining effect and shareholder alignment hypothesis are often cited to support this view. The alternative view, and one which has received far more support, is that ATPs destroy firm value. This view is based on the *managerial entrenchment hypothesis* which predicts that management adopt these provisions in order to pursue non-value maximising activities. I argue that the *managerial entrenchment hypothesis* is more likely to hold during merger waves, when agents are more likely to act in their own best interest, compared to off-wave takeover contests. When takeover activity is normal, on the other hand, I suspect the data to be more consistent with the *shareholder alignment/ bargaining hypothesis*.

Hypothesis H1, discussed in section 3.2, proposes that the impact of shareholder right limiting provisions for firm value is affected by industry level takeover activity. The first step in assessing the validity of this claim is to quantify the impact of ATPs for takeover likelihood and initial bid success. If ATPs entrench management, then the likelihood of a firm being targeted should decrease. I suspect that such provisions may help facilitate managerial entrenchment during merger waves when agency and firm monitoring costs are higher. Nevertheless, ATPs may help reduce opportunistic bidding and shareholder myopia. If this is not the case, the long run target firm performance, following a failed takeover bid, is expected to be poor. This is empirically explored in this dissertation. Finally, I examine if shareholder right limiting provisions actually have the capacity to improve the negotiating

power of management. If so, the magnitude of these takeover premiums should be positively related to the number of provisions, and therefore, align with the *shareholder alignment hypothesis*.

To comprehensively address hypothesis H1, I also consider the impact of ATPs on bidding firm shareholder wealth. To be specific, I focus on both the long run and announcement period returns of bidding firms. If agency problems are higher during merger waves, it is possible that these provisions may facilitate non-value maximising behaviour which is consistent with the *managerial entrenchment hypothesis*. If so, announcement period returns should become increasingly negative, during on-wave periods, as the number of provisions a firm has increases. This bidder announcement, period price adjustment may in part reflect a correction for underestimating the prevalence of agency problems. Assessing the long run performance, however, is necessary to control for the possibility of shareholder myopia. In other words, market participants may originally misjudge the merits of such a merger and only recognise the benefits over a longer investment horizon.

3.2 Hypothesis Development

As discussed above, studies in regards to the use of shareholder right limiting provisions have typically sought to provide empirical evidence in support of one of two competing views. One view argues that shareholder right limiting provisions help facilitate managerial entrenchment, reducing firm value. The *managerial interest hypothesis* is commonly cited when supporting this view and is based on the typical principal-agent problem framework (see Jensen et al. 1976). It is argued that under a certain set of conditions, managers may choose to use anti-takeover provisions as a tool to facilitate managerial entrenchment, impeding the effectiveness of the market for corporate control, and therefore, reducing shareholder value. The alternative, and vigorously debated view, is that these same provisions enhance firm value. The *incentive alignment hypothesis*, in particular, can be used to help justify this position on ATPs. The hypothesis suggests that ATPs help assist in aligning the interests of managers with those of shareholders. To be specific, they enable managers to avoid managerial/shareholder myopia (i.e. short term focus), and therefore, allow managers to pursue investments that better add value to the firm. In addition to this, another view occasionally advanced by the literature is that ATPs improve the negotiating capacity of management, enabling them to extract higher offer premiums when targeted, and to prevent opportunistic bidding by rivals attempting to take advantage of temporary mispricing.

I argue that the significance of these two competing views may be highly contingent on the overall level of takeover activity. In order to establish which theory is consistent with the empirical evidence, I set up the following hypothesis and accompanying research questions.

H1: The significance of firm-level shareholder right limiting provisions is affected by industry level takeover activity.

As discussed at length in the literature review section, a recent study by Duchin et al. (2013) examined the long-run performance of acquisitions initiated during periods of high takeover activity. The study found that, relative to non-wave mergers, in-wave post-merger performance was significantly poorer. The authors attributed this to the reduced monitoring and lower penalties for engaging in on-wave acquisitions. Reduced monitoring, for example, was suggested, given that both analyst forecast quality declined and uncertainty rose during merger wave periods. In support of this, both Clement (1999) and Clement and Tse (2005) found evidence of reduced analyst forecast accuracy as the number of companies and industries tracked increased. In regards to managerial discipline, CEO turnover was found to be less sensitive to poor post-merger performance when initiated on the wave. This finding is economically significant and contrasts substantially with Lehn et al. (2006). There, the authors found evidence of CEOs being disciplined, either via internal governance, takeover, or bankruptcy within five years following a poor acquisition.

Research has shown that the significance of anti-takeover provisions, for firm value, is likely to be affected by industry concentration, product market competition, asset tangibility and corporate innovation (Chemmanur et al. 2013, Giroud et al. 2011, Kadyrzhanova et al. 2011, Sauvagnat 2013). Chemmanur et al. (2013), for example, consider the relationship between corporate innovation and anti-takeover provisions. The authors find that ATPs mitigate investor and managerial myopia (i.e. short-term focus), arising from the influences of short-

term public market investors. ATPs enable incumbents to focus on investing in innovation, which requires a longer investment horizon and mitigate the possibility of opportunistic bidders launching a takeover bid. Furthermore, Chemmanur et al. (2013) find that the positive effects of ATPs on firm value, through innovation, is proliferated as information asymmetry problems rise, product market competition increases and also in industries where innovation is more difficult to achieve.

I contribute to the existing literature by not only linking the agency issue with merger waves, as was first done by Duchin et al. (2013), but also examine whether shareholder right limiting provisions enhance firm value or facilitate managerial entrenchment by avoiding discipline from the takeover market. If so, shareholders cannot rely on the takeover market to protect them from expropriation by incumbents. Merger waves are likely to affect product market competition, industry concentration and information asymmetry problems simultaneously. All of which have been shown to have an impact on the way ATPs contribute to firm value.

If agency problems are more prevalent during merger waves, as suggested by Duchin et al. (2013), shareholder right limiting provisions may be used to facilitate entrenchment and non-value maximising activity, and therefore, lend support in favour of the *managerial entrenchment hypothesis*. I also argue that monitoring costs are not constant through time and are impacted by takeover activity. Duru et al. (2013) found that firms with low monitoring costs benefited from classified boards and vice versa. Both agency and monitoring costs may be higher during merger waves. Accordingly, even if monitoring costs are low for certain firms during normal periods, this may not be so during merger waves. In light of this, ATPs which previously may have benefited shareholders may now hurt their wealth. During normal

market conditions, on the other hand, the significance of these provisions for shareholder wealth may be negligible or even positive.

3.3 Research Questions

In addressing hypothesis H1, I also construct a series of subsidiary questions that provide a more comprehensive overview of the significance of takeover activity and on the uses of anti-takeover provisions for firm value. I assess the ramifications of ATPs for both targets and acquirers during different levels of takeover activity.

R1: Do shareholder right limiting provisions have an impact on the market for corporate control and does this impact differ during industry specific merger waves?

As noted by Bauguess et al. (2008), amongst others, the judicial approval of anti-takeover provisions back in 1985 may have inadvertently proliferated the well-cited, moral hazard problem between managers and minority shareholders[5]. If managers are able to use anti-takeover defences to impair the disciplinary function of the market for corporate control, incumbents would have greater scope to engage in opportunistic behaviour. The empirical evidence on this conventional view, however, is largely mixed. Evidently, it is important to establish if the availability of such provisions is beneficial or detrimental to shareholder wealth.

Numerous authors have argued that the introduction of modern day takeover protection devices has not caused a decrease in takeover activity, as speculated by some, and is also not

[5] Prior to the landmark *Moran v. Household (1985)* legal case, many legal scholars, industry commentators and academics alike, questioned the validity of takeover defences in takeover contests. The ruling in this legal action provided the precedents necessary to judicially validate their use.

the likely cause for the precipitous decline in takeover activity during the 1980s when the use of poison pills was validated (Comment et al. 1995, Garvey and Hanka 1999). Garvey et al. (1999), in particular, posit that although the costs of mounting a hostile takeover may have increased with the introduction of ATPs, so too, have the potential payoffs of a successful bid.

Contrary to these findings, Gompers et al. (2003) find evidence of an inverse relationship between the number of ATPs a firm employs and takeover likelihood. This deterrent effect could potentially facilitate managerial entrenchment as it restricts the market for corporate control in performing its disciplining function (i.e. efficient re-allocation of scarce corporate resources). I argue that this is more likely to be the case during merger waves, when corporate takeover activity is high and so too are agency costs, as discussed in section 3.2, but less likely to be so off the wave when agency costs are arguably lower.

R2: Do shareholder right limiting provisions impact the likelihood of an initial bid succeeding and is this probability impacted by takeover activity?

Although it is important to establish if ATPs have a deterrent effect, it is also of high importance to understand how these provisions affect the outcome of a bid. As noted by Eckbo (2009), bidding firms dispense a significant amount of resources in the takeover process. Accordingly, firms need to make choices that optimize their chances of success, and in doing so, reduce the likelihood of target resistance and/or attracting competition for the target. Much research has gone into examining the characteristics of successful and failed single bid outcomes (Bates et al. 2008, Betton and Eckbo 2000). No study to date, however,

has considered the impact of takeover activity, in conjunction with right limiting provisions in the aggregate, on the likelihood of an initial bid succeeding.

Furthermore, few studies to date have also considered how certain strategic choices (method of payment, mode of acquisition and decision to use a toehold) are impacted by differences in the information environment/ takeover activity and corporate governance. The presence of a toehold, in particular, has been shown to affect the initial bid success rate. Betton and Eckbo (2000) find empirical evidence in support of the notion that toeholds increase the likelihood of an initial bid being successful. In other words, toeholds were largest in successful single bid contests, averaging 20%, and smallest in multi bid takeover contest outcomes, averaging just 5%. This would, therefore, imply that there are significant benefits to an initial bidder in pursuing a toehold in the target company. Despite this finding, Betton and Eckbo (2000) show that only 53% of the firms in their sample, consisting of 2,335 takeover bids from 1971 to 1990, actually had toeholds in the target firm. Similarly, Bradley et al. (1988) find that 66% of the acquiring firms in their sample of 236 successful tender offers had toeholds in the target. In this study, I explore the relationship between having a toehold, ATPs and the likelihood of initial bid success. This is the first study to consider the consequences of having a toehold controlling for differences in corporate governance regimes and takeover activity.

By addressing research question 2, I will be able to provide additional insight into the optimal structure of a bid to improve the likelihood of success, if it is this aspect that deters bidders from engaging in the bid. Further, it will assist policy makers in their efforts to understand the benefits and/or costs of shareholder right limiting provisions.

R3: Do shareholder right limiting restrictions improve the negotiating capacity of target firm incumbents?

This research question examines if anti-takeover provisions, conditioned on the level of takeover activity, impact takeover premiums. Access to ATPs may improve firm value through increased negotiating capacity. If this were so, shareholder right limiting provisions should not systematically deter bidders, and therefore, should have a positive impact on firm value. Sokolyk (2011), for example, examined the impact of these provisions on takeover premia, but did not explicitly control for merger activity and found no evidence of higher premiums. Kadyrzhanova et al. (2011), however, do find evidence of a relationship between GIM and premiums but only so for concentrated industries.

It is difficult to hypothesise the impact of merger waves for the bargaining hypothesis discussed above. One potential view is that bidding firms are more likely to overpay for targets during merger waves, and therefore, target firm management does not need to rely on these provisions to secure higher premiums. Alternatively, bid premiums may be higher during merger waves to mitigate the possibility of entrenched managers suggesting that the premium is insufficient, and therefore, using ATPs to impede the contest.

When takeovers are initiated outside of a wave, the shareholder right limiting bargaining hypothesis may be stronger. Acquirers are less likely to overpay during such periods, and therefore, antitakeover provisions may be significantly more important.

R4: Does the performance of firms, following a failed takeover bid, differ depending on the number of shareholder right limiting provisions?

Relatively few studies to date have examined the ramifications of failed takeover bids for target firm shareholders. If target firm incumbents are acting in the best interest of shareholders, one would expect to see bids that do not maximise shareholder wealth rejected and those that do, accepted. This outcome is more likely to be observed during off-wave periods when agency problems are lower. I would not expect to see a relationship between anti-takeover provisions and post-bid target firm performance in this period. If target firm incumbents are entrenched, bids are obviously less likely to succeed, provided an offer is made for the firm to begin with. If this is so, and the contest ultimately fails, one would expect to see limited improvements in the target's operating and/or stock performance going forward. Alternatively, if incumbents do act in the best interest of shareholders, and do not support a takeover bid (i.e. the bid may be opportunistic in nature and not value enhancing), improvements in either operating performance or stock returns, or both, should be observed, provided the bid was not consummated. These two scenarios are more likely to be supported empirically when takeover activity is high, and therefore, so too, are agency problems.

R5: Do shareholder limiting provisions impact the market's response to an acquisition?

This research question aims to address how market participants respond when firms with poor corporate governance engage in acquisitions. Managers of firms insulated from the market for corporate control may have a greater predilection to engage in empire building and overpay for acquisitions. If agency problems are more wide-spread during on-wave

takeovers, then I would expect to see the markets react adversely to the announcement of bids by poorly governed firms. As previously discussed in depth, managers may pursue endeavours that benefit themselves, at the expense of shareholders, if they are able to *"get away with it"*, so to speak (Duchin et al. 2013). I expect the market to respond positively to well govern firms that initiate a takeover bid during merger waves. This relationship may not be observed off the wave unless agency problems are particularly bad at the firm level.

During off-wave periods when agency problems are presumable lower, incumbents may be less likely to engage in acquisitions that do not benefit their shareholders. If this is so, I would not expect to see any relationship between the corporate governance regime and acquisition announcement period returns.

During periods of elevated takeover activity, firms are also more likely to be overvalued. By definition, overvaluation implies that the future operating performance is inconsistent with the current market valuation of the firm (Fu et al. 2013). Overvaluation may, however, also arise because of investors underestimating the significance of agency problems during periods of elevated takeover activity. Accordingly, the negative announcement period returns that Fu et al. (2013) document for overvalued stock-swap acquirers, may be attributable to this misvaluation being corrected for high GIM and E firms. In other words, investors reassess the significance of agency problems and lower the value of the firm. The announcement period returns may not only reflect the mispricing being corrected but also the expectations regarding the synergies of such mergers. Accordingly, if these acquisitions are ill-conceived because of agency problems, the long- run performance should be poor. This proposition is further investigated when addressing the following research question (R6).

R6: Do shareholder right limiting provisions impact the long-run post acquisition performance of firms?

The aim of this research question is to establish if shareholder right limiting provisions impact the long run post-acquisition performance of firms. I expect to find differences in performance between well and poorly governed firms but only so when the acquisition is initiated on the wave, when agency problems are more significant. The underlying objective is to establish if ATPs have the ability to mitigate shareholder myopia and also enable incumbents to undertake projects that add value in the long run, regardless of takeover activity. In a recent study by Chemmanur et al. (2013) evidence in line with this view was provided. The authors found that ATPs enabled firm managers to be more innovative, adding value in the long run by mitigating short-term profit maximising pressures arising from the equity market. Accordingly, firms with many anti-takeover provisions may be able to perform better than comparable firms with fewer provisions, given the ability to focus on adding value in the long run. This, however, requires that agency costs do not exceed the benefits of managers being insulated from the takeover market. Evidently, although it may be the case that ATPs benefit firm shareholders when agency costs are low, spurring corporate innovation and long-run, value enhancing corporate investment decisions, high monitoring and agency costs could off-set such benefits. Consequently, during periods of elevated takeover activity when agency costs are higher, managers may be more inclined to make investment decisions that do not benefit shareholders in the long run. This was not investigated by Chemmanur et al. (2013).

Presumably, the empirical evidence will be largely consistent with the findings associated with research question R5. Mitchell and Lehn (1990), for example, found that announcement period returns (the focus of research question R5) and subsequent takeover likelihood/firm performance were positively related to one another. Accordingly, if announcement period returns are negative for on-wave acquisitions, long run post-acquisition performance is also expected to be poor. Furthermore, if CEO turnover is indeed less sensitive to poor on-wave acquisitions as is suggested by existing research (Duchin et al. 2013), one would expect to see on-wave acquisitions frequently underperform off-wave acquisitions. Then again, in line with what was discussed above, the announcement period returns may be inconsistent with long-run performance if shareholders fail to correctly evaluate the long-run benefits of such an investment.

In summary, the objective of research question 6 is to determine whether differences in corporate governance, based on the GIM and E indices and controlling for the level of takeover activity, impacts the long run, post-acquisition performance of firms. It is hypothesised that the majority of poor, on-wave acquisitions are consummated by high GIM/E firms. Incumbents of high GIM/ E-Index firms may be sufficiently entrenched during on-wave periods (examined in research question R1), that they can freely partake in value destructive behaviour without fear of being targeted on the wave and/or disciplined for poor acquisitions. Accordingly, if merger waves are associated with increased levels of agency problems, incumbents of weak shareholder right firms may be more willing to engage in non-value maximising acquisitions. When takeover activity is normal, either no relationship or a positive relationship between governance and long run post-acquisition performance is expected. Again, this may be so given the increased level of external monitoring, lower

likelihood of equity overvaluation, increased CEO discipline and presumably lower agency problems that may be in effect during off-wave periods.

4 Data and Methodology

4.1 Data

The Gompers et al. (2003) GIM index and individual shareholder right limiting provisions necessary to reconstruct the Bebchuk et al. (2009) E-Index was obtained via web access to the RiskMetrics[6] Corporate Governance database. In section 4.2, I discuss in further detail the relevance of these two indices in addressing the research hypothesis specified in section 3.2. To identify which of the companies tracked by the RiskMetrics database were involved in a takeover, regardless of whether the firm was a bidder or target, I used the Thomson Reuters Securities Data Corporation (SDC). Company fundamentals and historical stock price data was sourced from Compustat and the Centre for Research in Security Prices (CRSP) databases, respectively. This data was necessary to construct control variables and to evaluate the stock price performance of firms involved in the takeover market.

The time period used in this study coincides with the availability of data on the GIM and E indices, provided by the RiskMetrics Governance database. The sample period spans 18 years, beginning in January 1991 and ending in December 2008 (inclusive). In line with existing studies, I discard all observations that do not satisfy the following criteria:

1. The transaction value must exceed $1 million dollars.
2. Target firm market capitalisation must exceed 1% of the bidding firm's market capitalisation.

[6] In earlier studies, the RiskMetrics Governance database was referred to as the Investor Responsibility Research Centre (IRRC) database.

3. Firms with SIC codes 4900-4999 (regulated industries) and 6000-6999 (financials) are excluded[7].
4. The target must be a publicly listed company prior to the takeover bid.
5. The acquirer must be seeking at least a 50% interest in the shares of the target (acquisition of majority interest).

4.2 Variables

To evaluate the significance of shareholder right limiting provisions, I rely on two different indices that feature prominently in the extant literature, namely, the GIM and E indices. Both indices are commonly used to proxy for a firm's takeover vulnerability, given that it becomes inherently more difficult, and thus costly, to acquire a company with more rather than fewer shareholder right limiting provisions.

The GIM index, compiled by Gompers et al. (2003) and available through RiskMetrics is my first proxy for takeover vulnerability. The GIM index considers 24 governance provisions that can be broadly classified into five distinct categories: delay, limitations to voting rights, director and officer protection, other takeover defences and state based laws. The E-Index, on the other hand, is based on a subset of the GIM index and was first introduced by Bebchuk et al. (2009). The E-Index, which only consists of 6 provisions, is often regarded as a more refined measure of takeover vulnerability given the exclusion of provisions that are

[7]In line with the discussion presented by Ambrose and Megginson (1992), regulated industries and financial institutions are subject to regulations and policies that affect the likelihood of a takeover bid in a way that is difficult to measure. Furthermore, these industries are likely to operate under different conditions which are not applicable to other industries (Espahbodi and Espahbodi, 2003). Accordingly, their exclusion from this sample of firms is warranted. SIC codes are sourced from CRSP.

considered unimportant. The E-Index value is based on whether a firm has a classified board structure, poison pill provision, supermajority requirement for acquisition, golden parachute and limitations to bylaw/ charter amendments.

Both indices weight all provisions equally, assigning a value of one if present and zero otherwise. Accordingly, the maximum value for the GIM and E indices is twenty-four and six, respectively. Throughout this study, I will refer to firms with few GIM and E-Index provisions as strong shareholder right firms. Occasionally, I will use the terms strong, democratic[8] and/or good interchangeably. Weak shareholder right firms (i.e. those with many provisions in place) may at times be referred to as poor or dictatorship firms. The threshold used to distinguish between strong and weak shareholder right firms often differs from study to study. When referring to the GIM index, a firm is classified as a strong (weak) shareholder right firm if it has fewer (more) than six (thirteen) provisions. When referring to the E-Index, a firm is considered a strong shareholder right firm if it has fewer than four provisions. Firms with four or more provisions are classified as weak shareholder right firms. For robustness purposes, I do consider other cut-offs.

Firm specific control variables and deal-specific attributes are also considered in this study and discussed in Table 1 below. The control variables are selected in accordance with previous studies (see: Ambrose et al. 1992, Comment et al. 1995, Daines and Klausner 2001, Field et al. 2002, Palepu 1986, Sokolyk 2011).

[8] Gompers et al. (2013) used the terms *'democratic'* and *'dictatorship'* to distinguish between good and poor corporate governance firms, respectively, given the notion that firms could be viewed as republics. *"Corporations are republics. The ultimate authority rests with* [the] *voters (shareholders). These voters elect representatives (directors) who delegate most decisions to bureaucrats (managers)"* (Gompers et al., 2013, p. 1)

Table 1 Additional Control Variables

Variable	Definition	Source(s)
Firm Size	Defined as the natural log of total assets, adjusted for inflation and lagged one period.	Compustat
Return on Assets (ROA)	One year lagged earnings before interest and tax (item 12 - item 41 - item 132 - item 133) divided by total assets (item 6) lagged one period.	Compustat
Tobin's Q	Defined as the ratio of the market value of assets divided by total assets. Market value of assets is calculated by subtracting common equity (item 60) from total assets (item 6) and then adding on the market value of equity (calculated by multiplying price (item 199) by shares outstanding (item 54)).	Compustat
Free Cash Flow	Free cash flow divided by total assets (item 6), where free cash flow is calculated by the sum of net income before extraordinary items (item 18) and depreciation (item 14) minus capital expenditure (item 128).	Compustat
Leverage	Leverage is defined as the ratio of total debt, based on lagged data, to total assets (item 6), where total-debt is based on the summation of debt in current liabilities (item 34) and long term debt (item 9).	Compustat
High Tech Indicator	A dummy variable taking on the value of 1 if the firm is from the high tech sector based on the SIC codes specified in Loughran and Ritter (2004), and 0 otherwise. In contrast to Compustat, which only reports current industry classification codes, CRSP maintains historical industry classification records.	CRSP
Relative Size	Deal value, as reported by SDC, divided by acquirer's market capitalisation 42 days prior to the initial bid announcement.	SDC & CRSP
Relative Size x High Tech	Defined as Relative Size multiplied by the high tech indicator.	SDC & CRSP

Table 1 *continued*

Tender Offer	A dummy variable where 1 is assigned to a tender offer (if flagged by SDC) and 0 otherwise.	SDC
Diversifying Acquisition	If both the target and bidder fall within the same industry classification, as defined by Fama and French (1997), I assign a value of 1 and 0 otherwise.	CRSP
Tangible Firm Indicator	First, I calculate the following variable for each firm in the sample: net property, plant and equipment (item 8) to market value of assets, where 'market value of assets' is calculated by subtracting common equity (item 60) from the sum of total assets (item 6) and market value of equity (price [item 199] x shares outstanding [item 54]). Next, if this ratio exceeds the median ratio, for the sample of firms, I assign a 1 to the Tangible Firm Indicator and 0 otherwise.	SDC &CRSP
Hostile	A binary variable equal to 1 if the bid is defined as hostile by SDC and 0 otherwise.	SDC
Friendly	A binary variable equal to 1 if the deal is defined as friendly by SDC and 0 otherwise.	SDC
Target Termination Flag	A binary variable equal to 1 if the target agrees to pay the bidder a fixed cash fee in the event that the target decides to cancel the proposed merger and 0 otherwise.	SDC
Public x Cash	A binary variable that is 1 if the target is publicly listed and the method of payment is all cash and 0 otherwise.	SDC
Public x Stock	A binary variable that is 1 if the target is publicly listed and the method of payment is stock or a mixture of stock and cash, and 0 otherwise.	SDC
Private x Cash	A binary variable that is 1 if the target is privately held and the method of payment is all cash and 0 otherwise.	SDC
Private x Stock	A binary variable that is 1 if the target is privately held and the method of payment includes some stock and 0 otherwise.	SDC
Subsidiary x Cash	A binary variable that is 1 if the target is a subsidiary and the method of payment is all cash and 0 otherwise.	SDC
All stock	Method of payment is 100% stock or contains some stock component.	SDC

Table 1 *continued*

Acquirer Status	A binary variable equal to 1 if the acquirer is public and 0 otherwise.	SDC
Premium	Natural logarithm of offer price (as quoted by SDC) divided by stock price 42 trading days prior to the announcement (Betton, Eckbo and Thorburn 2008).	SDC & CRSP
Target Firm Run-up	Average target cumulative abnormal return, over a 40 day investment window, beginning 42 days prior to the initial bid announcement date (Betton et al. 2008).	SDC & CRSP

4.3 Model Specifications

In this section the probit, selection bias correction and linear regression models used in this study are discussed. All models will accordingly be applied to on-wave and off-wave takeover periods and estimated using STATA 11 SE. In section 4.7, the methodology used to distinguish between on-wave and off-wave takeover markets will be outlined.

4.3.1 Probit Model

The probit model is used directly to address research questions R1 and R2 and for robustness purposes in research questions R3 and R5. The probit models used to assess takeover likelihood (R1) and initial bid success (R2) are specified below in equations (1) and (2), respectively.

(1)

$$Target(0,1) = c + \beta_1 * ATP + \beta_2 GIM^2 / E^2 + \beta_3 * Dual\ class + \beta_4 * Delaware\ Inc. + \beta_5 * Firm\ Size + \ldots$$
$$\beta_6 * Tobin's\ Q + \beta_7 * Leverage + \beta_8 * FCF + \beta_9 * TangibleFirmDummy + \beta_{10} * Leverage\ x\ TangibleFirmDummy\ ,$$

where *Target(0,1)* is a dichotomous, dependent variable equal to one if the firm is targeted and zero otherwise, *ATP* is set to either *GIM* or *E*, and ***c*** is a constant. Refer to Table 1 for further variable definitions.

(2)

$$Outcome(0,1) = c + \beta_1 * ATP + \beta_2 GIM^2 / E^2 + \beta_3 * Dual\ class + \beta_4 * Delaware\ Inc. + \beta_5 * Firm\ Size + \ldots$$
$$\beta_6 * Tobin's\ Q + \beta_7 * Leverage + \beta_8 * ROA + \beta_9 * TangibleFirmDummy + \beta_{10} * Friendly + \beta_{11} ToeholdIndicator +$$
$$\beta_{12} TargetTerminationFeeFlag + \beta_{13} AllCash + \beta_{14} Premium\ ,$$

where *Outcome(0,1)* is a binary dependent variable equal to one if an initial bid is successful and zero otherwise, conditional on a bid being received.

One problem with using pooled data in a regression analysis is that the residuals ε may be correlated across firms, industries and time. This could result in biased standard errors, and therefore, questionable inferences based on the estimated models. To control for this potential bias, I adjust the standard errors for firm and industry level clustering using White (1980) standard errors.

The probit model used to assess the likelihood of a firm becoming a bidder is specified in equation (3).

(3)

$$Acquirer\ (0,1) = \beta_1 ATP + \beta_2 DualClass + \beta_3 FirmSize + \beta_4 Tobin'sQ + \beta_5 FreeCashFlow$$
$$+ \beta_1 Leverage + c\ ,$$

where Acquirer(0,1) is a binary variable equal to one if the firm makes an acquisition and zero otherwise.

4.3.2 Least Squared Regressions

To determine if shareholder right limiting provisions have any effect on initial or final offer premiums (research question R3) I run a series of OLS regressions - see equations (4) and (5) below. The dependent variable [*Premium*] is calculated by taking the initial or final offer price and dividing it by the target firm's closing price 42 days prior to the first bid announcement date. Variables one through six in equation (4) below are target firm specific, variable seven distinguishes between public and private bidding firms and variables eight through twelve are deal specific. In regression (5), I also include an interaction variable [*ATP x Hostile*] to assess the relationship between hostility and anti-takeover provisions.

(4)

$$Premium = \beta_1 ATP + \beta_2 Dual\ Class + \beta_3 Delaware\ Incorporation + \beta_4 Ln(TargetMarketCap) + \beta_5 Tobin's\ Q + \beta_6 TargetFirmRunup + \beta_7 AcquirerStatus + \beta_8 Toehold + \beta_9 HorizontalTakeover + \beta_{10} TenderOffer + \beta_{11} All\ Stock + \beta_{12} Hostile + c$$

(5)

$$Premium = \beta_1 ATP + \beta_2 ATPxHostile + \beta_3 Dual\ Class + \beta_4 Delaware\ Incorporation + \beta_5 Ln(TargetMarketCap) + \beta_6 Tobin's\ Q + \beta_7 Toehold + \beta_8 TargetFirmRunup + \beta_9 AcquirerStatus + \beta_{10} HorizontalTakeover + \beta_{11} TenderOffer + \beta_{12} All\ Stock + \beta_{13} Hostile + c$$

In this thesis, the underlying drivers of announcement period returns (research question R5) are also examined in an OLS framework. Before discussing the specifics of this OLS model, however, I will briefly discuss the methodology used to calculate cumulative abnormal announcement period returns (the dependant variable) in section 4.4 below.

4.4 Bidding Firm Announcement Period Cumulative Abnormal Returns (CARs)

In addressing research question R5, the impact of shareholder right limiting provisions on bidder announcement period returns, I follow the methodology employed by Betton et al. (2008) and use a conditional event parameter estimation process. This method is generally regarded as being more efficient, given the full use of available return data, compared to the standard residual technique that is often used when assessing abnormal announcement period returns (MacKinlay 1997, Thompson 1985). The conditional event parameter model is presented in equation (6), below.

$$r_{jt} = \alpha + \beta_j r_{mt} + \sum_{k=1}^{K} AR_{jk} d_{kt} + \epsilon_{jt}\,, \qquad t = day(-240, end) \tag{6}$$

where r_{jt} is the logarithmic return to firm *j* over day *t*, r_{mt} is the market return over day *t*, AR_{jk} is the average daily abnormal stock return to firm *j* over event window *k*, and d_{kt} is an indicator variable that takes on the value of 1 if day *t* is in the *k*th event window or 0 otherwise. The value-weighted market model parameters are estimated over an estimation window that begins 240 days prior to the initial offer date and ends either 126 days after the last bid revision or the effective date plus 126 days, whichever is earlier. The cumulative abnormal returns (CARs) to firm *j* are then calculated using equation 7

$$CAR_{jk} = \omega_k AR_{jk}\,, \tag{7}$$

where *k* is the event period and ω_k is the number of trading days in the event window.

In line with Betton et al. (2008), the event window used in this study is three days long and is centred on the bid announcement date.

In equation (8) below, I specify the model used to assess the determinants of announcement period returns. The model is based on an in-depth review of the existing literature and includes the most commonly cited factors.

(8)

$$\begin{aligned} CARs = \ & \beta_1 ATP + \beta_2 DualClass + \beta_3 FirmSize + \beta_4 TobinsQ + \beta_5 FreeCashFlow + \beta_6 Leverage \\ & + \beta_7 RelativeSize + \beta_8 HighTechDummy + \ \beta_9 RelativeSizexHighTech \\ & + \beta_{10} TenderDummy + \beta_{11} DiversifyingAcquisition + \beta_{12} PublicTargetxCash \\ & + \beta_{13} PublicTargetxStock + \beta_{14} PrivateTargetxCash + \beta_{15} PrivateTargetxStock \\ & + \beta_{16} SubsidiaryxCash + c \end{aligned}$$

4.5 Long-Run Returns

To evaluate the long-run performance of bidding firms, given a particular corporate governance regime, that successfully acquire a target (research question R6), I follow Duchin et al. (2013). The buy and hold abnormal returns (BHAR) are based on the following model:

$$BHAR_{i,t} = \prod_{j=1}^{H}(1 + r_{i,t+j}) - \prod_{j=1}^{H}(1 + r_{benchmark,t+j}), \quad \textbf{(9)}$$

where H is the holding period length, r_i is the raw return for firm i in month $t+j$ and $r_{benchmark,t+j}$ is the benchmark return for month $t+j$.

The benchmark portfolio is a weighted average of two industry portfolios. The two industry portfolios are based on the bidding and target firm industry classification, as defined by Fama et al. (1997). The two portfolios are value weighted and only consist of firms not involved in any merger during the three year period around the merger announcement date. As noted by Duchin et al. (2013), this is done in an attempt to try and isolate the effect on returns from merging. These two industry based portfolios are then weighted according to the market capitalisations of the bidding and target firms to form the benchmark portfolio.

4.6 Heckman Selection Model

To account for potential endogeneity issues arising from an omitted variable and sample selection bias, I use the Heckman (1979) two-step procedure to generate consistent estimates. This model is used when examining the determinants of takeover premiums and

announcement period returns. In both cases, there are potential sample selection bias concerns. In the first instance, takeover premiums are only observed for targeted firms, and therefore, may be biased given the lack of observable takeover premiums for non-targeted firms. In the latter case, certain types of firms may have a greater propensity to initiate a takeover bid. Accordingly, the announcement period returns may be biased given that market participants may have already factored in the probability of an acquisition announcement materialising.

The first step in implementing the Heckman (1979) selection model involves estimating a maximum likelihood probit (the so-called, *selection equation*) to determine the Inverse Mills Ratio (IMR) which is calculated following the method discussed by Heckman (1979). The IMR is than added to an OLS regression (referred to as the *outcome equation* in this framework) to control for sample selection and omitted variable bias.

When evaluating the relationship between GIM/E and takeover premiums using the Heckman (1979) model, I apply the following steps:

1. The IMR is calculated based on the probit model specified in equation (2) – see section 4.3.1.
2. The IMR is than added as an additional explanatory variable in equations (4) and (5).

To control for sample selection and omitted variable bias when evaluating the relationship between bidding firm announcement period CARs and ATPs, I employ the following two steps (identical to those above).

1. The IMR is calculated based on the probit model specified in equation (3).
2. The IMR is then added as an additional explanatory variable in equation (8).

4.7 Merger Wave Identification

The clustering of takeover activity, both in terms of deal volume and transaction value, is a commonly observed empirical regularity. Many theories have been put forward in an attempt to explain this wave-like behaviour of merger activity. Most of these, however, can be broadly classified into neoclassical and behavioural-based views. The neoclassical views posit that increases in takeover activity are the result of industry shocks, such as technological, economic or regulatory changes that precipitate the need for consolidation. Behavioural based theories, on the other hand, suggest that market mispricing may prompt managers of overvalued firms to engage in acquisitions. In other words, opportunistic managers may choose to use their overvalued equity as an acquisition currency to acquire other firms.

To distinguish between on-wave and off-wave takeover activity, I use the same procedure first adopted by Harford (2005), and subsequently used by many studies. To begin with, each bidder and target firm in my sample is assigned an industry code based on the Fama and French (1997) 48 industry classification scheme. This is done by recoding the reported SIC code for each firm to one of the 48 Fama and French (1997) industries. Following this, I split the sample into two periods - the first (second) period begins in January 1991 (2002) and ends in December 2001 (2008). This is done in order to accommodate the bursting of the dot.com bubble in 2001, an event that caused the market and merger and acquisition activity

to drop precipitously. In line with Harford (2005) and Mitchell and Mulherin (1996), I focus on the concentration of takeover activity over a 24 month period. For each industry, I identify the 24-month period with the highest level of takeover activity. I do this by dividing the number of takeovers in that two year time period by the total number of takeovers that occurred during the period in question. Next, I run 1000 simulations that randomly, but with equal probability, assign the actual number of mergers that occurred for a given period, to a particular month. If the actual 24 month concentration is greater than the 95th percentile from the empirical distribution (1000 simulated peak 24-month concentrations), I code it as a merger wave.

4.8 Descriptive Statistics

Following application of the data filtering process discussed in section 4.1, I end up with 971 takeover bids, of which 872 are for firms that are only targeted once. Accordingly, 31 firms (or 3.5% of the sample) are involved in takeover bids more than once during the sample period beginning January 1, 1991 and ending December 31, 2008. The sample set, consisting of both targeted and non-targeted firms, used to evaluate the likelihood of a firm being targeted is comprised of 11,100 (1,989 unique firms) firm year observations. When assessing the announcement period returns and long-run performance of bidding firms and again following the selection criteria explained earlier, I identify 4,415 acquisitions made by 1,401 unique bidders for which data is available on RiskMetrics.

Based on the Harford (2005) merger wave classification methodology, I identify 61 unique industry merger waves. This is inclusive of firms not covered by the RiskMetrics database

and excludes targets in the financial services and utilities sector of the economy. There are 23 (January 1, 1991 to December 31, 2001) and 38 (January 1, 2002 to December 31, 2008) industry merger waves during the first and second periods, respectively. Of the 61 industry specific merger waves over the two periods, 22 industries have merger waves in both periods, 17 industries have at least one merger wave and four have no merger wave.

Of the 903 takeover bids for targets that I have sufficient data for, 218 are made on the wave. It is no surprise that I have fewer bids during on-wave periods given the data requirements and much smaller time period (maximum of two years) for which a bid can be classified a merger wave bid. In regards to bidding firms, 2,849 of the 4,415 bids are classified as on-wave bids.

In Table 2, I provide the Pearson correlation coefficients for the variables of interest (GIM and E-Indices) with firm specific characteristics. In addition to the two indices, I also provide correlations for the anti-takeover provisions that constitute the E-Index. The GIM and E Indices are highly correlated with one another (Pearson correlation of 0.72). As previously discussed the E index is regarded as a more refined measure, compared to the GIM, given that it focuses on those provisions (6 in total) which are regarded most significant. When considering the correlation of individual provisions with the GIM and E-Index, all correlations are greater than or equal to 0.30 except for the provision that imposes supermajority requirements for charter amendments. The dual class firm indicator is negatively correlated with all other governance provisions and ATP indices. This extreme form of governance, as declared by Gompers, Ishii and Metrick (2010) amongst others, gives management the ability to prevent any takeover effort from being successful. This is of

course conditional on management having sufficient voting rights. Consequently, in the presence of a dual class share structure, the need/ desire for alternative mechanisms to give management some protection/ bargaining power is substantially reduced.

Table 2 Pearson Correlation Matrix

Pearson correlation coefficients for the 971 targeted firms announced between 1991 and 2008 are reported below. *P*-values are presented in parenthesis.

	GIM	E	Classified Board	Poison Pill	Golden Parachute	Bylaw Limitations	Charter Limitations	Super Majority	Dual Class	Delaware Inc.	Firm Size	Tobin's Q	Return on Assets	Leverage	Free Cash Flow	Tangible Firm
GIM	1.00															
E	0.72	1.00														
	(0.00)															
Classified Board	0.51	0.65	1.00													
	(0.00)	(0.00)														
Poison Pill	0.48	0.64	0.25	1.00												
	(0.00)	(0.00)	(0.00)													
Golden Parachute	0.37	0.57	0.15	0.27	1.00											
	(0.00)	(0.00)	(0.00)	(0.00)												
Bylaw Limitations	0.35	0.49	0.20	0.08	0.08	1.00										
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)											
Charter Limitations	0.19	0.26	0.06	0.02	0.02	0.20	1.00									
	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)										
Super Majority	0.30	0.44	0.17	0.11	0.04	0.11	0.14	1.00								
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)									
Dual Class	-0.17	-0.18	-0.11	-0.21	-0.10	-0.03	-0.02	-0.04	1.00							
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)								
Delaware Inc.	-0.13	0.01	-0.02	0.02	-0.02	0.11	-0.07	-0.03	0.04	1.00						
	(0.00)	(0.05)	(0.03)	(0.00)	(0.03)	(0.00)	(0.00)	(0.00)	(0.00)							
Firm Size	0.16	0.03	-0.01	-0.02	0.05	0.07	0.03	-0.02	0.02	0.02	1.00					
	(0.00)	(0.00)	(0.05)	(0.01)	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.02)						
Tobin's Q	0.06	0.02	-0.00	-0.01	0.05	0.03	0.02	-0.01	-0.01	0.03	0.28	1.00				
	(0.00)	(0.00)	(0.90)	(0.13)	(0.00)	(0.00)	(0.02)	(0.06)	(0.04)	(0.00)	(0.00)					
Return on Assets	0.03	-0.00	-0.00	-0.00	-0.01	-0.02	0.00	0.04	-0.00	-0.05	0.10	-0.09	1.00			
	(0.00)	(0.81)	(0.70)	(0.86)	(0.04)	(0.00)	(0.65)	(0.00)	(0.59)	(0.00)	(0.00)	(0.00)				
Leverage	0.05	0.04	0.02	-0.02	0.07	0.05	0.02	0.00	0.10	-0.04	0.22	0.35	-0.13	1.00		
	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.01)	(0.73)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)			
Free Cash Flow	0.06	0.01	0.01	-0.01	0.01	-0.02	-0.01	0.04	0.00	-0.05	0.08	-0.05	0.60	-0.22	1.00	
	(0.00)	(0.15)	(0.04)	(0.31)	(0.28)	(0.01)	(0.06)	(0.00)	(0.78)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)		
Tangible Firm	0.07	0.04	0.05	0.02	0.01	0.02	0.04	0.02	-0.03	-0.10	0.14	0.06	0.03	0.27	-0.18	1.00
	(0.00)	(0.00)	(0.00)	(0.03)	(0.26)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	

In tables three and four, I report descriptive statistics on corporate governance and firm level characteristics for the target and bidding firms, respectively. The average GIM and E index values for targeted firms, without regards to the level of takeover activity, are 8.97 and 2.24, respectively. Interestingly, both measures of shareholder rights are lower when takeover activity is high. The GIM (E-Index) is 8.92 (2.21) on the wave versus 9.1651 (2.37) when takeover activity is low. Although the differences in the GIM, between on-wave and off-wave targets are statistically indistinguishable at any conventional level of significance, t-test results suggest that targets have significantly lower E-scores off the wave. These findings suggest that bidders, for whatever reason, may be more deterred by anti-takeover provisions when merger and acquisition activity is high. There is also a smaller proportion of dual class firms being targeted during on-wave periods (7.8% versus 8.72% of the sample). The number of bids made for firms incorporated in Delaware (60.6%), however, is identical during both high and low periods of takeover activity.

Turning to the acquirer, and with reference to table four, the governance of in-wave acquirers (GIM of 9.26) is poorer compared to out of wave acquirers (GIM of 9.11). The relationship continues to hold when using the E-Index, a more refined measure. The average, on-wave acquirer E score is 2.28 compared to 2.08 for off-wave acquirers. In both instances, the differences are statistically significant. There are also more dual-class firms engaging in acquisition when takeover activity is high and fewer Delaware incorporated firms initiating takeover contests.

In regards to the characteristics of firms that are subject to a takeover bid, I find that firms targeted on the wave are smaller in size, have lower returns on assets, higher Q ratios and

much lower free cash flow. Compared to targets, bidders are much larger both on and off the wave. The average log of total assets for acquirers, without controlling for takeover activity is 8.3250 compared to 7.3337 for target firms. This is equivalent to $4.1257 billion and $1.5310 billion for bidding and target firms, respectively. On-wave acquiring firms are also much larger compared to off-wave acquirers. On-wave acquirers have an average size of $4.9488 billion compared to an average of $3.7331 for off-wave bidders. Although the Tobin's Q of on-wave bidders (0.7181) is comparable to that of target firm Q ratios (0.7169), the difference is more pronounced off the wave. The average Q ratio of bidding and target firms off the wave is 0.7507 and 0.6931, respectively. Returns on assets are noticeably higher for bidding firms and this is so regardless of takeover activity. In particular, the return on assets for the whole period is 4.94 % for bidding firms and only 1.83% for targets. Again, leverage levels are comparable on the wave between bidding and target firms but lower for bidding firms compared to target firm's off the wave. Lastly, free cash flow is lower for on-wave acquirers (0.0388) as opposed to off-wave bidders (0.0433). Nevertheless, in both instances, the free cash flow of bidding firms is much higher compared to that of target firms. Compared to the acquiring firms, target firm cash flow is 0.0246 off the wave and 0.0072 on the wave.

Table 3 Descriptive Statistics – Target Firms

In the following table I present sample descriptive statistics for the full sample of 971 target firms, categorised into on and off wave contests as per the Harford (2005) methodology. The *GIM* and *E-Index* variables refer to the Gompers et al. (2003) and Bebchuk et al. (2009) governance indices, respectively. Dual Class and Delaware Incorporation are indicator variables – assigned a value of one if true and zero otherwise. *Firm Size* is the natural log of total assets. *Tobin's Q* is calculated by dividing the market value of assets by the total book value of assets. *Return on Assets* is defined as the ratio of EBIT to total assets. *Leverage* is determined by dividing total debt by total assets. *%Tangible Assets* is the ratio of tangible assets to intangible assets. a, b, and c denote significance at the 10, 5, and 1 percent level of significance, respectively.

					Percentiles		
Variable	**Period**	**n**	**Mean**	**S.D.**	**0.25**	**Median**	**0.75**
GOVERNANCE							
GIM	Whole Period	971	8.9732	2.6292	7.0000	9.0000	11.0000
	Off-wave	753	9.1651	2.3712	8.0000	9.0000	11.0000
	On-wave	218	8.9177	2.6982	7.0000	9.0000	11.0000
	DIFF (t-stat)		**1.2242**				
E-Index	Whole Period		2.2430	1.2537	1.0000	2.0000	3.0000
	Off-wave		2.3716	1.1892	2.0000	2.0000	3.0000
	On-wave		2.2058	1.2701	1.0000	2.0000	3.0000
	DIFF (t-stat)		**1.7204[a]**				
Dual Class	Whole Period		0.0803	0.2719	0.0000	0.0000	0.0000
	Off-wave		0.0872	0.2827	0.0000	0.0000	0.0000
	On-wave		0.0784	0.2689	0.0000	0.0000	0.0000
	DIFF (t-stat)		**0.4207**				
Delaware Incorporation	Whole Period		0.6056	0.4890	0.0000	1.0000	1.0000
	Off-wave		0.6055	0.4899	0.0000	1.0000	1.0000
	On-wave		0.6056	0.4891	0.0000	1.0000	1.0000
	DIFF (t-stat)		**-0.0019**				
FIRM CHARACTERISTICS							
Firm Size	Whole Period		7.3337	1.6879	6.0943	7.1837	8.3379
	Off-wave		7.5326	1.6683	6.2084	7.3417	8.7131
	On-wave		7.2761	1.6903	6.0549	7.1320	8.2206
	DIFF (t-stat)		**1.9789[b]**				
Tobin's Q	Whole Period		0.7115	0.2214	0.5576	0.7129	0.8834
	Off-wave		0.6931	0.2130	0.5237	0.7054	0.9095
	On-wave		0.7169	0.2237	0.5709	0.7186	0.8712
	DIFF (t-stat)		**-1.3984**				
Return on Assets	Whole Period		0.0183	0.1519	0.0057	0.0295	0.0642
	Off-wave		0.0344	0.0736	0.0105	0.0280	0.0667
	On-wave		0.0136	0.1677	0.0040	0.0298	0.0641
	DIFF (t-stat)		**1.7807[a]**				
Leverage	Whole Period		0.1816	0.1638	0.0427	0.1499	0.2723
	Off-wave		0.1636	0.1638	0.0155	0.1246	0.2655
	On-wave		0.1868	0.1636	0.0500	0.155	0.2743
	DIFF (t-stat)		**-1.8458[a]**				
Free Cash Flow	Whole Period		0.0111	0.0998	0.0000	0.0137	0.0532
	Off-wave		0.0246	0.0701	0.0000	0.0092	0.0543
	On-wave		0.0072	0.1066	0.0000	0.0159	0.0525
	DIFF (t-stat)		**2.2657[b]**				
% Tangible Assets	Whole Period		0.2466	0.2420	0.0516	0.1628	0.3684
	Off-wave		0.1777	0.2215	0.0172	0.0830	0.2508
	On-wave		0.2652	0.2440	0.0690	0.1880	0.4018
	DIFF (t-stat)		**-4.5612[c]**				

Table 4 Descriptive Statistics – Bidding Firms

In the following table I present sample descriptive statistics for the sample of 4,415 acquiring firms. The bids are split into on-wave and off-wave contests following the Harford (2005) identification procedure. The *GIM* and *E-Index* variables refer to the Gompers et al. (2003) and Bebchuk et al. (2009) governance indices, respectively. Dual Class and Delaware Incorporation are indicator variables – assigned a value of one if true and zero otherwise. *Firm Size* is the natural log of total assets. *Tobin's Q* is calculated by dividing the market value of assets by the total book value of assets. *Return on Assets* is defined as the ratio of EBIT to total assets. *Leverage* is determined by dividing total debt by total assets. *%Tangible Assets* is the ratio of tangible assets to intangible assets. a, b, and c denote significance at the 10, 5, and 1 percent level of significance, respectively.

					Percentiles		
Variable	**Period**	**n**	**Mean**	**S.D.**	**0.25**	**Median**	**0.75**
GOVERNANCE							
GIM	Whole Period	4415	9.1635	2.6905	7.0000	9.0000	11.0000
	Off-wave	1566	9.1109	2.7686	7.0000	9.0000	11.0000
	On-wave	2849	9.2593	2.5402	8.0000	9.0000	11.0000
	DIFF (t-stat)		**-1.7531[a]**				
E-Index	Whole Period		2.1484	1.3127	1.0000	2.0000	3.0000
	Off-wave		2.0758	1.3339	1.0000	2.0000	3.0000
	On-wave		2.2803	1.2629	1.0000	2.0000	3.0000
	DIFF (t-stat)		**-4.9660[c]**				
Dual Class	Whole Period		0.0917	0.2887	0.0000	0.0000	0.0000
	Off-wave		0.0899	0.2860	0.0000	0.0000	0.0000
	On-wave		0.0951	0.2935	0.0000	0.0000	0.0000
	DIFF (t-stat)		**-0.5826**				
Delaware Incorporation	Whole Period		0.5647	0.4959	0.0000	1.0000	1.0000
	Off-wave		0.5890	0.4921	0.0000	1.0000	1.0000
	On-wave		0.5204	0.4997	0.0000	1.0000	1.0000
	DIFF (t-stat)		**4.4035[c]**				
FIRM CHARACTERISTICS							
Firm Size	Whole Period		8.3250	1.6722	7.1107	8.1717	9.4242
	Off-wave		8.2250	1.6597	7.0009	8.0784	9.3663
	On-wave		8.5069	1.6801	7.3166	8.3172	9.5206
	DIFF (t-stat)		**-5.3750[c]**				
Tobin's Q	Whole Period		0.7391	0.2069	0.6080	0.7238	0.8805
	Off-wave		0.7507	0.2150	0.6184	0.7318	0.8862
	On-wave		0.7181	0.1895	0.5914	0.7104	0.8695
	DIFF (t-stat)		**5.0286[c]**				
Return on Assets	Whole Period		0.0494	0.1080	0.0148	0.0474	0.0838
	Off-wave		0.0543	0.1214	0.0175	0.0520	0.0914
	On-wave		0.0404	0.0774	0.0127	0.0389	0.0706
	DIFF (t-stat)		**4.1035[c]**				
Leverage	Whole Period		0.1634	0.1404	0.0506	0.1349	0.2460
	Off-wave		0.1534	0.1355	0.0450	0.1225	0.2283
	On-wave		0.1817	0.1472	0.0649	0.1513	0.2724
	DIFF (t-test)		**-6.4193[c]**				
Free Cash Flow	Whole Period		0.0418	0.0861	0.0139	0.0472	0.0834
	Off-wave		0.0433	0.0865	0.0139	0.0487	0.0878
	On-wave		0.0388	0.0851	0.0145	0.0442	0.0763
	DIFF (t-stat)		**1.4274**				
% Tangible Assets	Whole Period		0.2477	0.2429	0.0598	0.1648	0.3564
	Off-wave		0.2612	0.2373	0.0725	0.1843	0.3853
	On-wave		0.2210	0.2515	0.0312	0.1210	0.3070
	DIFF (t-stat)		**5.0734[c]**				

Deal attributes, for both on-wave and off-wave periods, are reported in Panel a - Table 5. Transaction value, which is the total value of consideration paid (excluding fees and expenses) by the acquirer for the target, is much higher during on-wave takeover periods. The average transaction value for on-wave and off-wave takeover bids between 1991 and 2008 was $997.27 and $770.11 million, respectively. The distribution, however, is highly skewed given that the median transaction values for on-wave and off- wave takeover bids are $205.08 million and $170.0 million, respectively. The largest deal, for my sample of acquiring firms, was also initiated on the wave. The largest on-wave deal was worth $89 billion, whilst the largest off-wave deal was $67 billion. All dollar figures have been standardised to year 2000 values using the CPI.

The mean (median) relative deal size, calculated as the ratio of the transaction value reported by SDC to the bidder's market capitalisation 42 days prior to the bid announcement date, for the entire period is 19.16% (7.16%). Targets are larger, relative to the bidding firm, for on-wave acquisitions (20.63% versus 16.50%). Public targets make up between 30 and 40 percent of the total acquisitions during my sample period. In particular, 38.93% of the bids are for public targets on the wave, whilst 31.03% are for public targets off the wave. All cash acquisitions make up a smaller proportion of total bids on the wave, as expected, given that all stock or mixed offers are more prominent during periods of elevated takeover activity. Interestingly, the proportion of diversifying acquisitions is lower on the wave but only marginally (41.77% off the wave versus 43.61% on the wave).

In Panel b of Table 5, the cumulative three and five day abnormal announcement period returns (centred on the announcement date) for bidding firms are reported. The findings

suggest that on average, announcement period returns are statistically indistinguishable from zero, regardless of the level of takeover activity. These findings hold over both three and five day event windows, centred on the announcement date. Accordingly, based on the univariate analysis, I find no difference in market reactions to off-wave versus on-wave takeover bid announcements. This analysis is highly consistent with the findings of Duchin et al. (2013). As discussed at length in the literature review, Duchin et al. (2013) attribute this finding to investor inattention in asset pricing and temporary misvaluation. This is offered as an explanation by the authors given the observed, poor long-run performance of in-wave, relative to off-wave, acquisition investment decisions.

In Table 6, I report the quality of analyst forecasts for firms with different governance regimes and for different levels of takeover activity. The purpose of examining analyst quality is to reaffirm the findings of previous studies, such as that done by Duchin et al. (2013), which shows that the quality of analyst forecasting reduces during periods of elevated takeover activity. In contrast to these prior studies, I find that there are no differences in the quality of analyst forecasts, between on-wave and off-wave periods. Differences only emerge when controlling for the number of shareholder right limiting provisions at the firm level, a procedure which has not yet been investigated in the literature. This is a new and novel finding, given that the quality of analyst forecasts only drops on the wave compared to off the wave forecasts, for companies regarded as dictatorships (GIM greater than or equal to 14). The forecast error for dictatorship firms off the wave is 0.0654. This increases to 0.0803 when takeover activity for a given industry is elevated. The difference (-0.0149) is statistically significantly different [t=-1.76] from zero at the five percent level of significance. This can be used to reaffirm the presumption that agency problems are worse during on-wave

acquisitions, at least for dictatorship firms, given the increased uncertainty. This is a factor which may increase agency driven behaviour (Duchin et al. 2013).

Compared to dictatorship firms, democratic firms (GIM<=5) do not experience a drop in analyst quality when takeover activity is abnormally high. Democratic firms have a forecast error of 0.0337 off the wave which decreases to 0.0335 on the wave. This difference, however, is not statistically significant [t=0.05]. The difference in forecasting error, regardless of takeover activity, is much higher for dictatorship firms. Accordingly, the drop in analyst quality that earlier studies have noted and attributed to resource constraints may be driven exclusively by firms that have poor corporate governance.

Table 5 Descriptive Statistics – Deal Characteristics

Deal characteristics are presented in Panel a. *Transaction Values* are reported in millions and are based on the reported SDC values. *Relative Deal Size* is the ratio of deal value as reported by SDC and adjusted for inflation to acquirer's market capitalisation 42 days prior to the initial bid size. *Public Target*, *All Cash*, and *Diversifying Acquisitions* are all indicator variables, assigned a value of one if true and zero otherwise. CAR [-1,+1] and CAR [-2,+2] are the cumulative abnormal returns realised by the bidding firm shareholders, using a market adjusted model over a 2 and 4 day event window, respectively.

Panel A. Deal Characteristics

					Percentiles		
Variable	**Period**	**n**	**Mean**	**S.D.**	**0.25**	**Median**	**0.75**
Transaction Value	Whole Period	4415	916.70	3700.00	97.00	193.21	493.69
	Off-wave	1566	770.11	3500.00	89.64	170.00	408.00
	On-wave	2849	997.27	3900.00	101.77	205.08	565.00
	DIFF (t-stat)		**-1.9296[a]**				
Relative Deal Size	Whole Period		0.1916	0.4099	0.0236	0.0716	0.1925
	Off-wave		0.1650	0.3836	0.0234	0.0669	0.1641
	On-wave		0.2063	0.4230	0.0236	0.0741	0.2099
	DIFF (t-stat)		**-3.2097[c]**				
Public Target	Whole Period		0.3613	0.4804	0.0000	0.0000	1.0000
	Off-wave		0.3103	0.4628	0.0000	0.0000	1.0000
	On-wave		0.3893	0.4877	0.0000	0.0000	1.0000
	DIFF (t-stat)		**-5.2373[c]**				
All Cash	Whole Period		0.3216	0.4672	0.0000	0.0000	1.0000
	Off-wave		0.3563	0.4791	0.0000	0.0000	1.0000
	On-wave		0.3026	0.4594	0.0000	0.0000	1.0000
	DIFF (t-stat)		**3.6634[c]**				
Diversifying Acquisition	Whole Period		0.4242	0.4943	0.0000	0.0000	1.0000
	Off-wave		0.4361	0.4961	0.0000	0.0000	1.0000
	On-wave		0.4177	0.4933	0.0000	0.0000	1.0000
	DIFF (t-stat)		**1.1868**				

Panel B. Market Response to Acquisition Announcement

					Percentiles		
Variable	**Period**		**Mean**	**S.D.**	**0.25**	**Median**	**0.75**
CAR [-1,+1]	Whole Period	4415	-0.0017		-0.0247	-0.0017	0.0234
	Off-wave	1566	-0.0017		-0.0237	-0.0018	0.0210
	On-wave	2849	-0.0015		-0.0283	-0.0015	0.0272
	DIFF (t-stat)		**-0.1049**				
CAR [-2,+2]	Whole Period						
	Off-wave		-0.0007		-0.0283	-0.0010	0.0273
	On-wave		-0.0021		-0.0366	-0.0009	0.0326
	DIFF (t-stat)		**0.5891**				

Table 6 Quality of Analyst Forecasts

In Table 6, I report the quality of analyst forecasts, segmented into different time periods and corporate governance regimes, using the methodology outlined by Duchin et al. (2013). For each merger announcement, forecasts generated for the next quarterly earnings of the bidding firm, based on estimates in the month prior to the bid, are taken from I/B/E/S. The *Forecast Std* is the dispersion in analyst forecasts in the month surrounding the merger announcement divided by the bidding firm's total book value. *Forecast Error* is defined as the absolute difference between average analyst earnings forecast and actual earnings, normalised by the book value of total assets. ATP stands for anti-takeover provisions. Off-wave and on-wave classifications are based on the Harford (2005) methodology. Firms are classified as either a dictatorship or democracy. If the GIM of a firm is less than or equal to 5, they are categorised as a democratic firm. If the GIM index is greater than or equal to 14, the firm is regarded as a dictatorship. Simple t-tests are carried out for the forecast error and forecast standard deviation calculations, where the null is zero. T-values are reported in square brackets. P-values are presented in parenthesis.

	No ATP controls				**Dictatorship Firms**				**Democratic Firms**				**Democratic - Dictatorship**		
	All	Off-wave	On-wave	Diff	All	Off-wave	On-wave	Diff	All	Off-wave	On-wave	Diff	All	Off-wave	On-wave
Forecast Error	0.0446	0.0446	0.0447	-0.0024	0.0680	0.0654	0.0803	-0.0149	0.0336	0.0337	0.0335	0.0002	-0.0344	-0.0318	-0.0468
	[82.34]	[69.75]	[44.24]	[-0.65]	[21.08]	[19.05]	[9.26]	[-1.76]	[28.44]	[24.89]	[13.74]	[0.05]	[-12.15]	[-10.20]	[-6.98]
	(0.0000)	(0.0000)	(0.0000)	(0.2567)	(0.0000)	(0.0000)	(0.0000)	(0.0396)	(0.0000)	(0.0000)	(0.0000)	(0.5224)	(0.0000)	(0.0000)	(0.0000)
Forecast Std	0.0377	0.0384	0.0355	-0.0008	0.0509	0.0499	0.0558	-0.0059	0.0324	0.0323	0.0324	-0.0001	-0.0186	-0.0176	-0.0234
	[69.28]	[58.21]	[39.47]	[-0.205]	[16.07]	[13.85]	[8.83]	[-0.71]	[19.36]	[16.14]	[12.15]	[-0.03]	[-5.71]	[-4.62]	[-4.03]
	(0.0000)	(0.0000)	(0.0000)	(0.4188)	(0.0000)	(0.0000)	(0.0000)	(0.2389)	(0.0000)	(0.0000)	(0.0000)	(0.4883)	(0.0000)	(0.0000)	(0.0000)

5 Empirical Results and Discussion

5.1 Chapter Overview

I begin this chapter by first discussing the likelihood of a firm being involved in a takeover contest, whilst simultaneously controlling for differences in overall takeover activity. It is hypothesised that the impact of shareholder right limiting provisions on the likelihood of a firm being targeted, is dependent on the level of takeover activity. Next, given that a firm is targeted, I investigate the probability of an initial bid succeeding and how the use of shareholder right limiting provisions may impact this. If the first bid fails, however, it does not necessarily imply that the target is successful in remaining independent. The initial bid may fail for any number of reasons, including the bid being revised and/ or interlopers entering the race for the target company. Nevertheless, it is important to evaluate the initial bid outcome given that firms often deploy substantial amounts of resources to identify and acquire a company. I then investigate if firms with many anti-takeover defences in place can actually extract higher premiums, and therefore, offset any costs that shareholders may incur because of the deterrent effect (i.e. firm not receiving a takeover bid). Next, I turn to the bidding firm and examine how market participants respond to the announcement of an acquisition bid. In doing so, I explicitly control for both the level of takeover activity and the corporate governance structure of the firm. Lastly, I investigate the long- run performance of in-wave and out-of-wave acquisitions in an attempt to establish the significance of shareholder right limiting provisions for these bids.

5.2 Takeover Likelihood

If shareholder right limiting provisions are adopted for the purpose of improving the negotiating capacity of incumbents, one would expect a positive relationship to exist between the existence of such provisions and takeover likelihood, along with realised offer premiums (Sokolyk 2011). On the other hand, if anti-takeover provisions are used to facilitate managerial entrenchment we would expect to observe the opposite.

In Table 7, the probit models used to assess the likelihood of a firm being targeted during different market conditions, are reported. The unconditional probit regression (model 1), which includes year and industry fixed effects, suggests that the GIM index is positively, but statistically insignificantly, related to the likelihood of being targeted. In model 2, I examine the robustness of this finding by using the Entrenchment Index (E-Index) in place of the GIM. Again, the E-Index is statistically insignificant at all conventional levels of significance. In an attempt to control for additional non-linearity in the relationship between these indices and takeover likelihood, squared terms for the GIM and E-Index variables are also included. In both models, the squared GIM and E-Index variables are also insignificant. Although this finding is inconsistent with that of Gompers, et al. (2003), whereby a negative relationship is found between takeover likelihood and the GIM index during their sample period, it highlights the significance of examining different time periods without adequate controls for the level of takeover activity. The lack of any relationship between the GIM index and takeover likelihood has also recently been reaffirmed by Sokolyk (2011). Sokolyk (2011) argued that the provisions that make up the GIM index may have offsetting effects on takeover likelihood and therefore, make the GIM index unable to predict a firm's takeover

probability. Core et al. (2006), similarly find that the rates at which firms are targeted are similar across high and low GIM firms.

Contrary to models one and two of Table 7, regressions three and four, which examine the likelihood of a firm being targeted off the wave, disclose a very different story. The relationship between the probability of a firm being targeted and GIM is positive and statistically significant at the one percent level of significance. Although inconsistent with many earlier studies that either find no relationship (Core et al. 2006, Sokolyk 2011) or a negative relationship indicating entrenchment, it does align with the results of a recent study initiated by Bauguess et al. (2008). In their study, which only considered completed takeovers, GIM was positively related to the probability of being taken over and continued to remain significant even when controlling for a host of other factors in a multivariate setting. Accordingly, although I find no evidence of a relationship when I impose no controls for takeover activity, regardless of whether the deal is consummated or not, it is positively related to takeover likelihood in the absence of a merger wave.

The finding of a positive relationship, when takeover activity is not high, suggests that these shareholder limiting right provisions may indeed be adopted to improve the negotiating capacity of management, as suggested by Sokolyk (2011) and industry practitioners. Obviously, it is necessary to compare the takeover premiums between high and low GIM firms, to determine if improved negotiating capacity does indeed translate into higher premiums. This is examined in section 5.4. It is also important to assess the outcome of the initial bid, whether a deal is ultimately consummated and the performance of failed takeover bids. Again, this is all examined in later sections to assess the validity of allowing incumbents

to use shareholder limiting provisions. Of course, in contrast to the arguments which suggest that ATPs improve negotiating capacity, the positive relationship could simply reflect the market for corporate control attempting to discipline incumbents that are not acting in the best interest of shareholders. Previous studies have shown that the operating performance is substantially lower amongst high GIM and E-Index firms. The negative signs on the squared terms, in models three and four of Table 7 would suggest that although the likelihood of being targeted increases as the number of provisions goes up, it is not a monotonic relationship. In other words, for each additional provision, the likelihood of a firm being targeted increases but this increase is of a smaller and smaller magnitude. For robustness purposes, I also excluded the squared corporate governance variables – see Table 21 in the Appendix. The absence of a squared term had no material impact on the previous inferences when referring to the E-Index. The only material difference was a lack of significance on the GIM index variable during a merger wave.

As previously discussed and illustrated in section 4.8, if agency problems are higher during periods of elevated takeover activity, the implications of shareholder right limiting provisions for firm value may be different. In Table 7, regressions five and six, I examine the significance of GIM and E in light of elevated takeover activity. In contrast to the effects of ATPs during non-wave periods, both the GIM and E-Index are negatively and statistically significantly related to the likelihood of a firm being targeted. These results highlight the significant impact of merger waves for the use of anti-takeover provisions. Consistent with the views of many industry commentators, academics, and policy makers, I find that firms with more shareholder right limiting provisions are more likely to be immune from the

disciplining forces of the market for corporate control. In other words, the negative sign indicates that anti-takeover provisions may indeed facilitate managerial entrenchment during periods of elevated takeover activity. This is consistent with the hypothesis presented in section 3.2 which states that agency problems may be higher during merger waves and therefore, distort the alignment of interest that exists between managers and shareholders during non-wave periods when agency problems are lower.

In Table 8, the marginal effects of governance and other notable variables on the likelihood of being targeted are reported. All marginal effects are based on the probit regressions presented in Table 7. According to the marginal effect during non-wave takeovers, a one standard deviation increase in the GIM index is associated with a 2.21% increase in takeover likelihood. This is a statistically and economically significant 60.75% increase in the likelihood of being targeted relative to the unconditional likelihood of 5.13%. The likelihood of being targeted, based on the E-Index marginal effect, is 88.52% relative to the unconditional likelihood during off-wave periods. Evidently, I do not find evidence that corroborates the conventional view of ATPs protecting incumbents from the market for corporate control. On the contrary, the findings strongly support the argument that high ATP firms are more likely to be targeted during off-wave periods. Again, as previously stated, this period coincides with reduced agency problems. During merger waves, a one standard deviation increase in the GIM index is associated with a 2.68% decrease in the likelihood of being targeted. Again, this is equivalent to a 74.6% decrease in the likelihood of being targeted relative to the unconditional likelihood of 10.34%.

To get an indication of the odds of an average firm being targeted at different levels of the E-Index, probabilities based on the discussed probit model are provided in Table 9. During off-wave periods, it becomes immediately apparent that firms with many shareholder right limiting provisions are much more likely to be targeted. At an E-score of 1, the likelihood of being targeted is 2.56%. This compares to a takeover likelihood of 36.12% for an E-score of 6. During on-wave takeovers, the probability of being targeted is highest for firms with few anti-takeover provisions. The probability is 12.37% at an E-score of 1 and decreases to 4.96% for firms having all six provisions tracked by the E-Index. Nevertheless, as expected, the likelihood of being targeted is much higher during merger waves, compared to non-wave periods, regardless of the E-Index.

The dual class firm indicator, a capital structure that is often regarded as non-value maximizing for minority shareholders, is also highly significant and negative. Dual class firm structures are often heavily criticized by both institutional investors and academic research (Gompers et al. 2010). Given the separation between voting power and cash flow rights which often results under such regimes, the scope for insiders to engage in non-value maximizing activity is enhanced. Previous studies have either excluded firms with dual class structures or have made no provision for their existence. The findings in Table 7 are not surprising given that management in most instances has substantial voting right and can just say no to a takeover bid.

In the next section, the likelihood of an initial bid being successful given the number of provisions a firm has, is examined. Bidding firms deploy substantial resources in identifying

potential targets. If initial bids are more likely to fail if firms have a high number of ATPs, then this will be of particular interest to bidding firm incumbents. It will also help establish if ATPs are relevant in the bidding process.

Table 7 Takeover contest likelihood

The following table is based on the probit model specified in *section 4.3.1*. The dependent variable is set to one if the firm is targeted (regardless of the bid outcome), and zero otherwise. On-wave and off-wave classification is based on the Harford (2005) methodology. *GIM* is the Gompers et al. (2003) corporate governance index that consists of 24 governance provisions tracked by RiskMetrics. *E*, the alternative measure, is the Bebchuk et al. (2009) governance index consisting of six provisions that are regarded as the most important. The *Dual class* and *Delaware Incorporation* variables are binary. *Firm size* is calculated as the natural log of total assets, *Tobin's Q* is determined by dividing the market value of assets over the book value of assets, *Leverage* is the ratio of interest bearing debt to total assets, *Free Cash Flow* is defined as the sum of net income before extraordinary items and depreciation minus capital expenditure divided by total assets, *Tangible Firm Dummy* is a binary variable that equals one if the percentage of tangible assets exceed the median ratio of the other firms trading in its industry and zero otherwise. Year and industry fixed effects are included in all regressions. Standard errors are presented in parenthesis. *, **, and *** denote significance at the 10, 5, and 1 percent level of significance, respectively. All regressions include SIC code dummies, while regressions 1 and 2 also include year dummies given the absence of controls for changes in takeover activity from year to year.

	Whole Period		**Off-wave**		**On-wave**	
	(1)	(2)	(3)	(4)	(5)	(6)
GIM	0.0419		0.2409***		-0.1734***	
	(0.0415)		(0.0692)		(0.0519)	
GIM^2	-0.0018		-0.0121***		0.0086***	
	(0.0022)		(0.0039)		(0.0028)	
E		0.0738		0.3551***		-0.1124*
		(0.0529)		(0.0834)		(0.0683)
E^2		-0.0058		-0.0460**		0.0120
		(0.0115)		(0.0182)		(0.0151)
Dual Class	-0.2909***	-0.2700***	-0.1094	-0.0314	-0.4469***	-0.4659***
	(0.0797)	(0.0804)	(0.1098)	(0.1118)	(0.1123)	(0.1132)
Delaware Incorporation	0.1810***	0.1678***	0.1269**	0.0928	0.1731***	0.1924***
	(0.0430)	(0.0430)	(0.0594)	(0.0599)	(0.0603)	(0.0600)
Firm Size	-0.1784***	-0.1761***	-0.0537***	-0.0510**	-0.2471***	-0.2513***
	(0.0170)	(0.0168)	(0.0203)	(0.0209)	(0.0243)	(0.0238)
Tobin's Q	-0.3523***	-0.3446***	-0.4415***	-0.4209***	-0.1350	-0.1475
	(0.0963)	(0.0956)	(0.1665)	(0.1601)	(0.1195)	(0.1200)
Leverage	1.2548***	1.2293***	0.5357*	0.4487	1.5856***	1.6106***
	(0.2106)	(0.2113)	(0.2958)	(0.3024)	(0.2933)	(0.2938)
Free Cash Flow	0.0563	0.0520	0.3247	0.2967	-0.0978	-0.0863
	(0.1683)	(0.1693)	(0.2454)	(0.2483)	(0.2424)	(0.2409)
Tangible Firm Dummy	-0.0573	-0.0620	-0.3019***	-0.3263***	0.0373	0.0404
	(0.0710)	(0.0711)	(0.0968)	(0.0984)	(0.0999)	(0.0995)
Tangible Firm x Leverage	0.4385	0.4479	0.3276	0.3352	1.1244***	1.0964***
	(0.2837)	(0.2836)	(0.4083)	(0.4166)	(0.3920)	(0.3921)
Constant	0.2079	0.3105	-1.4018***	-0.6826*	1.1927***	0.5761**
	(0.4253)	(0.3818)	(0.5225)	(0.4019)	(0.3374)	(0.2472)
Observations	11100	11100	6638	6638	4462	4462
Pseudo R-Squared	0.1078	0.1090	0.0847	0.0971	0.1291	0.1280

Table 8 Takeover Likelihood - Marginal Effects

Marginal effects, based on the probit models estimated in Table 7 are reported in the following table. For each reported marginal effect, all other coefficient covariates are held at their mean. On-wave and off-wave classification is based on the Harford (2005) methodology. *GIM* is the Gompers et al. (2003) corporate governance index that consists of 24 provisions tracked by RiskMetrics. *E*, the alternative measure, is the Bebchuk et al. (2009) governance index consisting of six provisions that are regarded as the most important. The *Dual class* and *Delaware Incorporation* variables are binary. *Firm size* is calculated as the natural log of total assets, *Tobin's Q* is determined by dividing the market value of assets over the book value of assets, *Leverage* is the ratio of interest bearing debt to total assets, *Free Cash Flow* is defined as the sum of net income before extraordinary items and depreciation minus capital expenditure divided by total assets, *Tangible Firm Dummy* is a binary variable that equals one if the percentage of tangible assets exceed the median ratio of the other firms trading in its industry and zero otherwise. *, **, and *** denote significance at the 10, 5, and 1 percent level of significance, respectively.

	Whole Period		**Off-wave**		**On-wave**	
	(1)	(2)	(3)	(4)	(5)	(6)
GIM	0.0049		0.0221***		-0.0268***	
E		0.0086		0.0322***		-0.0174
Dual Class	-0.0340***	-0.0315***	-0.0100	-0.0028	-0.0691***	-0.0721***
Delaware Incorporation	0.0211***	0.0196***	0.0116**	0.0084	0.0268***	0.0298***
Firm Size	-0.0208***	-0.0205***	-0.0049***	-0.0046**	-0.0382***	-0.0389***
Tobin's Q	-0.0411***	-0.0402***	-0.0405***	-0.0381***	-0.0209	-0.0228
Leverage	0.1677***	0.1649***	0.0594*	0.0510	0.3216***	0.3237***
Free Cash Flow	0.0066	0.0061	0.0298	0.0269	-0.0151	-0.0134
Tangible Firm Dummy	0.0021	0.0018	-0.0230***	-0.0249***	0.0365	0.0362

Table 9 Probability of Takeover Contest

Based on the probit estimates reported in Table 7, the probabilities of an average firm, at different levels of the E-Index, being targeted are reported below.

E-Index	**Whole Period**	**Off-Wave**	**On-Wave**
1	0.0579	0.0256	0.1237
2	0.0660	0.0513	0.1046
3	0.0750	0.0946	0.0879
4	0.0848	0.1602	0.0732
5	0.0956	0.2500	0.0605
6	0.1074	0.3612	0.0496

5.3 Initial Bid Outcome

Having discussed the effects of anti-takeover provisions on takeover deterrence in section 5.2, I now consider the odds of an initial bid being successful. As pointed out by Eckbo (2009), bidding firms dispense a significant amount of resources in the takeover process. Accordingly, bidding firms need to make choices that optimise their chances of success, and in doing so, reduce the likelihood of target resistance and/or attracting competition for the target. This behaviour could explain why high GIM and E firms are less likely to be targeted during merger waves. Much research has gone into examining the characteristics of successful and failed single bid outcomes (Bates et al. 2008, Betton et al. 2000). Few studies to date, however, have explicitly considered how certain strategic choices (method of payment, mode of acquisition, and decision to use a toehold) are impacted by takeover activity, which in turn impacts the information environment and agency problems, together with the effects of shareholder right limiting provisions. If incumbents are able to use anti-takeover provisions to negotiate higher premiums, then we should see multiple bids, and accordingly higher premiums.

In Table 10, I report probit regressions, controlling for the number of shareholder right limiting provisions, firm characteristics and deal attributes to explain initial bid outcomes. As per Bates et al. (2008), I, too, consider the economic implications of initial and follow-on bids (i.e. auctions) by following the definitions of Bates and Lemmon (2003). In order for a bid to be classified as an initial bid, there can be no other bid for the target in question for 360 calendar days prior to the announcement date of the bid. Any additional bid made during the 360-calendar day period is treated as part of an auction sequence. This approach yields some

703 initial bids and 737 follow-on bids. The unconditional likelihood of an initial bid being successfully completed, for my sample of firms, is 80.67%. On and off the wave, the completion rates for an initial bid are 80.61% and 80.8%, respectively. Evidently, the likelihood of an initial bid being successfully completed is quite high.

In Table 10, regressions one and two, the likelihood of an initial bid being successfully completed for the entire sample period is presented. Neither the GIM nor the E-Index is statistically significant. Accordingly, this implies that shareholder right limiting provisions do not impact the outcome of an initial bid.

When controlling for differences in takeover activity, I again find limited evidence of a relationship between initial bid success and the GIM/ E-Index, regardless of takeover activity. The E Index (model 4), is statistically significant at the 10% level of confidence and negatively related to initial bid success. This of course does not necessarily imply that the target will remain independent or that this is bad news for target firm shareholders. Incumbents may simply be acting in the best interest of their shareholders and not supporting the bid because the offer price is inadequate or believe the bidder is engaging in opportunistic bidding. In doing so, this may result in bid revisions (i.e. bid jumps) or attract the attention of rival bidders, which in turn may result in higher bid premiums being offered. It is a well-established fact in the literature that target firm shareholders, on average, enjoy much higher gains (i.e. higher offer premiums) when an initial bid for the firm evolves into a multi-bid contest (Betton et al. 2000, Bradley et al. 1988). Of course, if incumbents have a predisposition to remain independent then they will oppose any bid that challenges their authority, even if the proposed merger would enhance firm value. In section 5.5, I examine

the performance of firms subsequent to a failed takeover bid in order to establish if shareholder value is either created or lost.

In contrast to the number of shareholder right limiting provisions, deal specific characteristics appear much more relevant in determining initial bid success. Offer premiums are positively related to initial bid success but only so off the wave. This is an interesting finding given that one would suspect that offer premiums should be highly significant, regardless of market conditions. Both friendly bids and bids with target termination fee agreements are much more likely to succeed, regardless of the information environment. Toeholds decrease the likelihood of initial bid success but only so off the wave (see Table 10, model 4). Given the extensive research that toehold bidding has received in the literature, I, too, explore the significance of this option whilst also controlling for the number of anti-takeover provisions a firm has. This has not been previously explored in the literature and may shed some additional light on the merits of using toeholds in a takeover contest.

Table 10 Initial Bid Outcome

The dependent variable is the initial bid outcome and is set to one if the initial bid is successful and zero otherwise. On-wave and off-wave classification is based on the Harford (2005) methodology. *GIM* is the Gompers et al. (2003) corporate governance index that consists of 24 provisions tracked by RiskMetrics. *E*, the alternative measure, is the Bebchuk et al. (2009) governance index consisting of six provisions that are regarded as the most important. The *Dual class* and *Delaware Incorporation* governance variables are binary. *Firm size* is calculated as the natural log of total assets, *Tobin's Q* is determined by dividing the market value of assets over the book value of assets, *Return on Assets* is the ratio of net income to total assets, *Leverage* is interest bearing debt/ total assets and *Premium* is the natural log of the target firm's stock price following the bid announcement divided by its trading price 42 days prior to the bid. The following variables are binary and are set to one if true and zero otherwise - *Tangible firm*, *Friendly bid*, *Toehold indicator*, *Target termination fee agreement* and *All cash*. Standard errors are reported in parenthesis. *, **, and *** denote significance at the 10, 5, and 1 percent level of significance, respectively.

	Whole Period		**Off-wave**		**On-wave**	
	(1)	(2)	(3)	(4)	(5)	(6)
GIM	0.1661		0.1723		0.2339	
	(0.1267)		(0.2283)		(0.1592)	
GIM^2	-0.0094		-0.0111		-0.0127	
	(0.0068)		(0.0124)		(0.0086)	
E		-0.0841		-0.4828*		0.1603
		(0.1604)		(0.2805)		(0.1760)
E^2		0.0235		0.0919		-0.0147
		(0.0328)		(0.0599)		(0.0345)
Dual Class	0.4028	0.4250	0.2502	0.3218	0.2861	0.3784
	(0.2611)	(0.2657)	(0.3370)	(0.3608)	(0.3762)	(0.3845)
Delaware Incorporation	-0.0514	-0.0336	0.0012	0.0969	-0.0010	-0.0034
	(0.1439)	(0.1441)	(0.2281)	(0.2237)	(0.1938)	(0.1966)
Firm Size	0.0728	0.0718	0.1059	0.0795	-0.0329	-0.0280
	(0.0650)	(0.0641)	(0.0871)	(0.0911)	(0.0931)	(0.0904)
Tobin's Q	-0.2853	-0.2461	-0.8058	-0.6704	-0.0138	0.0160
	(0.3534)	(0.3529)	(0.4992)	(0.4960)	(0.5011)	(0.5041)
Leverage	-0.4055	-0.4349	0.3069	0.1333	-0.9854	-0.9634
	(0.5396)	(0.5318)	(0.8416)	(0.8442)	(0.6375)	(0.6355)
Return on Assets	0.7606	0.8152	1.3731	1.4638	0.4814	0.5478
	(0.4891)	(0.4992)	(0.9540)	(0.9642)	(0.6081)	(0.6052)
Tangible Firm Indicator	-0.2563	-0.2691*	-0.5154*	-0.5243*	-0.1147	-0.1130
	(0.1612)	(0.1626)	(0.2744)	(0.2752)	(0.2044)	(0.2096)
Friendly	1.3712***	1.3678***	1.4554***	1.4907***	1.2914***	1.3249***
	(0.2047)	(0.2046)	(0.3401)	(0.3236)	(0.2305)	(0.2337)
Toehold Indicator	-0.5149**	-0.5470**	-0.5677	-0.7231**	-0.2976	-0.2835
	(0.2255)	(0.2241)	(0.3516)	(0.3615)	(0.3280)	(0.3274)
Target Termination Fee Flag	1.1361***	1.1139***	1.3253***	1.2644***	1.0707***	1.0434***
	(0.1571)	(0.1547)	(0.2490)	(0.2471)	(0.2011)	(0.1985)
All Cash	0.0994	0.1264	0.3685*	0.4029*	-0.0358	-0.0154
	(0.1550)	(0.1531)	(0.2209)	(0.2235)	(0.1998)	(0.1974)
Premium	0.3601	0.3737	1.4919***	1.5970***	-0.0287	-0.0353
	(0.2352)	(0.2333)	(0.4332)	(0.4342)	(0.1899)	(0.1831)
Intercept	-1.8719**	-1.2829**	-1.5030	-0.4600	-1.6695*	-1.0566
	(0.8021)	(0.6471)	(1.2626)	(1.0519)	(0.9971)	(0.7387)
Observations	703	703	325	325	378	378
Pseudo R-Squared	0.3660	0.3650	0.4286	0.4313	0.3680	0.3682

Table 11 Initial Bid Outcome – Toehold bidding

The likelihood of an initial bid succeeding at different levels of the Entrenchment index (E), given that the bidder moves from having no toehold to having a toehold in the target firm, is reported below. These probabilities are based on the presumption that all other covariates in the probit model, reported in Table 7, are taken at their average values. On-wave and off-wave classification is based on the Harford (2005) methodology.

	Whole Period		**Off-Wave**		**On-Wave**	
E	Marginal Effect	P-value	Marginal Effect	P-value	Marginal Effect	P-value
1	-0.0860	0.0170	-0.0742	0.0490	-0.0532	0.3890
2	-0.0916	0.0140	-0.1051	0.0420	-0.0480	0.3870
3	-0.0974	0.0190	-0.1421	0.0580	-0.0430	0.3910
4	-0.1033	0.0340	-0.1758	0.0590	-0.0384	0.3990
5	-0.1094	0.0580	-0.1935	0.0420	-0.0342	0.4140
6	-0.1155	0.0880	-0.1870	0.0630	-0.0304	0.4350

In Table 11, the probabilities of an initial bid being successfully completed, when the bidding firm chooses to acquire a toehold in the target, are examined. In line with the results reported in Table 10, toehold bidding only impacts the outcome of a bid during off-wave takeover periods. The significance of toehold bidding is clearly impacted by the number of anti-takeover provisions that a firm has available. At an E-score of 1, the probability of an initial bid being successful decreases by 7.42%. At the other extreme (E-score > 5), bidding firms using a toehold are 19.35% less likely to successfully acquire the target in one go. Evidently, this finding is largely consistent with what we observe in practice; given that so few bidding firms decide to acquire a toehold. On-wave acquisitions, however, do not appear to be impacted by the presence of a toehold. Accordingly, bidding firms may find it advantageous to pursue a toehold when takeover activity is high. When takeover activity is low, however, toeholds appear to adversely impact the likelihood of success.

5.4 Takeover Premiums

In Tables 12 through 15, I examine the determinants of takeover premiums in a multivariate setting and control for differences in takeover activity. All regressions include target firm characteristics (inclusive of corporate governance variables), along with bidding firm and deal specific characteristics.

In Table 12, factors that could influence the initial bid premium are examined by way of a probit model. In regressions one, two, and three, I do not control for takeover activity but include year fixed effects. Neither the GIM nor the E-Index is statistically significant in determining bid premiums. When controlling for differences in takeover activity (regression four through nine), I again find no evidence of shareholder right limiting provisions impacting initial bid premiums. Target firm run-up, target market capitalisation, method of payment and mode of acquisition, on the other hand, all have some explanatory power. The significance of these determinants in most instances, however, is again dependent on the level of takeover activity.

The problem with only considering initial bids is that it does not reflect the efforts of incumbents to negotiate higher bid premiums. Clearly, shareholder right limiting provisions impact the likelihood of a firm being targeted, as per the discussions in section 5.3 above. If management uses these provisions to negotiate higher premiums, then this would be reflected in the final bid premium and not the initial bid premium offered to shareholders. Accordingly, if high GIM and E-Index firms do have greater negotiating capacity, this should translate into higher offer premiums. Of course, if these provisions are merely instigated to

provide protection to incumbents, one may not expect to see any relationship between these provisions and the final premium. In Table 13, I look at the determinants of the final bid premium. The GIM and E-Index are again not significant at any conventional level of significance. The finding is also robust to different model specifications and time periods (i.e. high and low takeover activity). The lack of any relationship between GIM and takeover premiums is consistent with the findings of Sokolyk (2011).

In Table 14, the impact of bidder hostility is considered. If bidders do not set out to initiate an unsolicited takeover bid and want to engage in friendly negotiations with the target firm management, it may be possible that target firm incumbents do not need to utilise these provisions during the takeover contest. In a study by Subramanian (2005), interviews carried out with senior M&A investment bankers unanimously confirmed that takeover defences were only relevant in a small number of takeovers. The theoretical model of Subramanian (2005) also suggested that the scope for takeover defences in modern takeovers was limited. If so, one might expect to only see a relationship between premiums and anti-takeover provisions when the deal becomes hostile.

To determine if any notable difference in takeover premiums are realised in the event of a hostile bid, I re-estimate the previous regressions reported in Tables 12 and 13 but now also include an interaction variable between GIM/E and hostility. Based on the coefficient estimates in Table 14, both initial and final offer premiums are positively associated with the number of ATPs a firm has at its disposal (*GIMxHostile* is positive and statistically significant), provided the bid is hostile and initiated on the wave. The *t-statistics* for this interaction variable are 2.52 [initial bid premium] and 2.13 [final bid premium] - see models

five and seven, respectively. Accordingly, evidence in favour of the bargaining hypothesis, often used to support the validity of ATPs, is identified.

In the event a firm has no takeover defences in place and is approached by a hostile bidder on the wave, final offer premiums are 15.42% lower (see model 7, Table 14), when compared to a friendly bid. Evidently, it would seem that target firm shareholders are better off when the bid is friendly during such market conditions. This difference, however, decreases as the number of provisions increases. When GIM is arbitrarily set to five, for example, the difference between hostile and friendly bids becomes 7.97%. The point at which hostile bid premiums exceed that of friendly bid premiums is when the target has 11 or more provisions. Presumably because of the improved negotiating capacity, afforded to management, given the larger array of anti-takeover provisions incumbents have at their disposal. For example, when I set GIM equal to 14, hostile on-wave bid premiums now exceed otherwise equivalent but friendly bid premiums by 5.44%[9]. This may, in part explain, why firms with many ATPs are seldom approached with hostility by bidders.

The findings discussed immediately above, however, are not robust to different model specifications (see models six and eight, Table 14) and do not hold for off-wave takeovers. In one instance (model 2, Table 14), for example, the entrenchment index (E) is actually

[9] The impact of bidder hostility on takeover premiums, given that firms have access to anti-takeover defences, can be determined by calculating the partial derivative of takeover premiums with respect to hostility. Based on the models in Table 14, this works out to:

$$\frac{\partial Takeover\ Premium}{\partial Hostile} = b_1 + b_2 * \text{GIM},$$

where b_1 and b_2 are coefficient estimates of the *Hostile* and *GIMxHostile* variables, respectively. GIM is set arbitrarily to five and fourteen in the examples used in the above analysis. Using the coefficient estimates provided in model 7 (Table 14), I arrive at 5.44%.

associated with lower initial offer premiums (*Ex**Hostile*** coefficient = -0.0389, *t-statistic* = 1.72), and completely unrelated to final offer premiums (model 4, Table 14) when the bidder is hostile. The coefficient on *Hostile* in model 2 (Table 14) is now also positive and statistically significant. Given the inclusion of an interaction effect, the *Hostile* dummy variable should be interpreted as the change in offer premium, given that the bidder is hostile, compared to friendly, and that the target firm has no defences associated with the entrenchment index (E) in place. Accordingly, the regression output suggests that if the target firm is approached by a hostile bidder, and has no E-index related provisions in place, target firm shareholders can expect to receive initial offer premiums that are, on average, 15.19% (*t-statistic of* 2.19) higher than a friendly bid.

The results in Table 14 are largely in alignment with the view that anti-takeover provisions have little to no impact on bid premiums, regardless of takeover activity, when the bidder is friendly. This finding is largely consistent with the theoretical work of Subramanian (2005) discussed earlier. On the contrary, there is some evidence to suggest that when the bidder is hostile, offer premiums are positively (negatively) related to the incidence of ATPs when initiated on (off) the wave.

In the final table below on takeover premiums (Table 15), the impact of potential endogeneity arising from non-random, target firm selection is assessed. This is accomplished through the use of a two-stage Heckman Selection Model. In the first stage, a probit model (i.e. selection model) is estimated to determine the likelihood of a firm being targeted. This step is necessary to obtain the Inverse Mills Ratio which is later added to the linear regression model in the second stage (i.e. the outcome model). The Inverse Mills Ratios, reported in models

one and two (off-wave models) are statistically insignificant, and therefore, indicate an absence of selection bias. Accordingly, the previously analysis is not affected by selection bias when assessing the determinants of takeover premiums. In regressions (6) and (8) [on-wave selection models], however, the Inverse Mills Ratio is statistically significant at the 1% level of confidence. This implies that endogeneity problems, arising from selection bias, are present in the previous analysis when takeover activity is high. The conclusions, nevertheless, regarding the benefits of ATPs in the negotiation process do not change.

In summary, I find little evidence in support of the notion that anti-takeover provisions at the firm level enhance either final or initial offer premiums when the bidder is friendly. On the contrary, when the bidder is hostile, there is some evidence of a positive (negative) relationship between bid premiums and the incidence of ATPs during on (off)-wave periods.

Although not addressed in this study, a natural extension of the above analysis would be to consider the significance of individual provisions, controlling for takeover activity, for takeover premia. It may be possible that, given the diversity of provisions in the GIM and E-index, some governance rules may be more relevant than others. Kadyrzhanova et al. (2011), for example, find that delay based provisions are beneficial to shareholders whereas non-delay provisions are not. Similarly, Sokolyk (2011) find that some provisions add value whilst others destroy it.

Table 12 Initial Bid Premium

OLS coefficients based on the model specified in section 4.3.2 are reported below. The dependant variable in equations (1) through (9) is the initial offer premium. Following Eckbo (2009), I estimate the takeover premium by dividing the offer price (as reported on SDC) by the prevailing market price of the target 42 trading days prior to the announcement of the bid and then taking the natural logarithm of this ratio. *GIM* is the Gompers et al. (2003) corporate governance index that consists of 24 provisions tracked by RiskMetrics. *E*, the alternative measure, is the Bebchuk et al. (2009) governance index consisting of six provisions that are regarded as the most important. On-wave and off-wave classification is based on the Harford (2005) methodology. Standard errors are presented in parenthesis. *, **, and *** denote significance at the 10, 5, and 1 percent level of significance, respectively.

	Whole Period			Off-wave			On-wave		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Target Characteristics									
GIM		0.0026			0.0013			0.0026	
		(0.0029)			(0.0036)			(0.0045)	
E			0.0054			-0.0058			0.0103
			(0.0059)			(0.0077)			(0.0088)
Dual Class	-0.0064	-0.0040	-0.0051	-0.0253	-0.0247	-0.0240	0.0238	0.0271	0.0314
	(0.0269)	(0.0271)	(0.0270)	(0.0270)	(0.0269)	(0.0273)	(0.0575)	(0.0585)	(0.0587)
Delaware Incorporation	0.0056	0.0077	0.0056	0.0111	0.0123	0.0100	-0.0042	-0.0025	-0.0062
	(0.0156)	(0.0160)	(0.0156)	(0.0175)	(0.0182)	(0.0176)	(0.0259)	(0.0264)	(0.0258)
Ln Market Cap	-0.0274***	-0.0282***	-0.0276***	-0.0298***	-0.0301***	-0.0295***	-0.0272**	-0.0280**	-0.0270**
	(0.0074)	(0.0074)	(0.0074)	(0.0085)	(0.0088)	(0.0086)	(0.0113)	(0.0113)	(0.0114)
Tobin's Q	0.0147	0.0117	0.0139	0.0023	0.0010	0.0050	0.0340	0.0311	0.0361
	(0.0396)	(0.0393)	(0.0396)	(0.0462)	(0.0467)	(0.0465)	(0.0695)	(0.0692)	(0.0693)
Target Run-up	-0.6847***	-0.6872***	-0.6854***	-0.8037***	-0.8024***	-0.8083***	-0.6137***	-0.6190***	-0.6214***
	(0.0739)	(0.0737)	(0.0728)	(0.0980)	(0.0975)	(0.0992)	(0.0793)	(0.0808)	(0.0784)
Acquirer Characteristics									
Toehold	-0.0538**	-0.0532**	-0.0519**	-0.0483	-0.0497	-0.0474	-0.0378	-0.0357	-0.0312
	(0.0224)	(0.0223)	(0.0223)	(0.0295)	(0.0305)	(0.0296)	(0.0342)	(0.0344)	(0.0343)
Acquirer Status	0.0124	0.0120	0.0119	0.0355**	0.0352**	0.0360**	-0.0087	-0.0094	-0.0109
	(0.0182)	(0.0182)	(0.0183)	(0.0177)	(0.0177)	(0.0179)	(0.0343)	(0.0344)	(0.0348)
Horizontal Takeover	-0.0107	-0.0108	-0.0113	0.0199	0.0198	0.0204	-0.0254	-0.0255	-0.0268
	(0.0155)	(0.0155)	(0.0155)	(0.0180)	(0.0180)	(0.0180)	(0.0274)	(0.0275)	(0.0275)
Deal Characteristics									
Tender	0.0323	0.0328	0.0312	0.0544**	0.0543**	0.0556**	0.0232	0.0239	0.0212
	(0.0203)	(0.0204)	(0.0204)	(0.0255)	(0.0255)	(0.0253)	(0.0307)	(0.0309)	(0.0311)
All Stock	0.0246	0.0254	0.0251	-0.0547*	-0.0543*	-0.0538*	0.0523	0.0536	0.0554*
	(0.0228)	(0.0228)	(0.0229)	(0.0283)	(0.0284)	(0.0282)	(0.0328)	(0.0329)	(0.0327)
Hostile	-0.0117	-0.0128	-0.0131	0.0450	0.0452	0.0462	-0.0258	-0.0271	-0.0279
	(0.0234)	(0.0234)	(0.0236)	(0.0301)	(0.0304)	(0.0294)	(0.0275)	(0.0272)	(0.0275)
Intercept	0.8118***	0.8007***	0.8013***	0.7338***	0.7287***	0.7413***	0.6302***	0.6202***	0.6064***
	(0.1485)	(0.1488)	(0.1486)	(0.1540)	(0.1515)	(0.1525)	(0.1745)	(0.1796)	(0.1776)
Observations	661	661	661	317	317	317	344	344	344
Adjusted R-Squared	0.4339	0.4337	0.4337	0.5678	0.5663	0.5673	0.2907	0.2891	0.2910

Table 13 Final Bid Premium

OLS coefficients based on the model specified in section 4.3.2 are reported below. The dependant variable is the final offer premium. Following Eckbo (2009), I estimate the takeover premium by dividing the offer price (as reported on SDC) by the prevailing market price of the target 42 trading days prior to the announcement date of the bid and then take the natural logarithm of this ratio. *GIM* is the Gompers et al. (2003) corporate governance index that consists of 24 provisions tracked by RiskMetrics. *E*, the alternative measure, is the Bebchuk et al. (2009) governance index consisting of six provisions that are regarded as the most important. On-wave and off-wave classification is based on the Harford (2005) methodology. Standard errors are presented in parenthesis. *, **, and *** denote significance at the 10, 5, and 1 percent level of significance, respectively.

	Whole Period			Off-wave			On-wave		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Target Characteristics									
GIM		0.0020			0.0004			0.0033	
		(0.0026)			(0.0035)			(0.0039)	
E			0.0021			-0.0080			0.0086
			(0.0052)			(0.0073)			(0.0082)
Dual Class	-0.0120	-0.0101	-0.0115	-0.0247	-0.0245	-0.0229	0.0046	0.0090	0.0110
	(0.0235)	(0.0236)	(0.0235)	(0.0260)	(0.0260)	(0.0263)	(0.0491)	(0.0498)	(0.0503)
Delaware Incorporation	0.0039	0.0055	0.0039	0.0039	0.0043	0.0023	-0.0014	0.0008	-0.0031
	(0.0132)	(0.0135)	(0.0132)	(0.0162)	(0.0168)	(0.0163)	(0.0218)	(0.0223)	(0.0218)
Ln Market Cap	-0.0215***	-0.0222***	-0.0216***	-0.0256***	-0.0257***	-0.0252***	-0.0200**	-0.0211***	-0.0199**
	(0.0056)	(0.0057)	(0.0057)	(0.0081)	(0.0083)	(0.0082)	(0.0081)	(0.0081)	(0.0081)
Tobin's Q	0.0438	0.0417	0.0436	0.0184	0.0180	0.0221	0.0890	0.0857	0.0912
	(0.0336)	(0.0336)	(0.0336)	(0.0438)	(0.0440)	(0.0440)	(0.0588)	(0.0591)	(0.0588)
Target Run-up	-0.5419***	-0.5451***	-0.5429***	-0.6074***	-0.6073***	-0.6089***	-0.5246***	-0.5322***	-0.5310***
	(0.0540)	(0.0543)	(0.0537)	(0.0664)	(0.0664)	(0.0665)	(0.0755)	(0.0770)	(0.0745)
Acquirer Characteristics									
Toehold	-0.0561***	-0.0557***	-0.0554**	-0.0523*	-0.0527*	-0.0511*	-0.0513	-0.0482	-0.0454
	(0.0216)	(0.0216)	(0.0215)	(0.0283)	(0.0290)	(0.0283)	(0.0331)	(0.0334)	(0.0334)
Acquirer Status	0.0181	0.0178	0.0178	0.0366**	0.0365**	0.0374**	0.0016	0.0007	-0.0003
	(0.0151)	(0.0151)	(0.0152)	(0.0169)	(0.0169)	(0.0170)	(0.0291)	(0.0293)	(0.0296)
Horizontal Takeover	-0.0142	-0.0142	-0.0144	0.0089	0.0088	0.0094	-0.0278	-0.0275	-0.0289
	(0.0138)	(0.0138)	(0.0138)	(0.0155)	(0.0155)	(0.0154)	(0.0241)	(0.0243)	(0.0242)
Deal Characteristics									
Tender	0.0497***	0.0503***	0.0493***	0.0591**	0.0591**	0.0609**	0.0509*	0.0519*	0.0491*
	(0.0178)	(0.0178)	(0.0179)	(0.0252)	(0.0252)	(0.0250)	(0.0275)	(0.0275)	(0.0278)
All Stock	0.0137	0.0144	0.0140	-0.0550**	-0.0549**	-0.0537**	0.0345	0.0364	0.0372
	(0.0193)	(0.0194)	(0.0194)	(0.0268)	(0.0269)	(0.0267)	(0.0276)	(0.0278)	(0.0277)
Hostile	-0.0141	-0.0149	-0.0147	0.0318	0.0318	0.0331	-0.0166	-0.0180	-0.0182
	(0.0212)	(0.0213)	(0.0214)	(0.0293)	(0.0294)	(0.0284)	(0.0250)	(0.0248)	(0.0250)
Intercept	0.7917***	0.7827***	0.7873***	0.6775***	0.6761***	0.6873***	0.4884***	0.4748***	0.4683***
	(0.1152)	(0.1150)	(0.1146)	(0.1385)	(0.1368)	(0.1367)	(0.1276)	(0.1308)	(0.1293)
Observations	650	650	650	314	314	314	336	336	336
Adjusted R-Squared	0.3809	0.3806	0.3801	0.4119	0.4097	0.4133	0.2715	0.2706	0.2716

Table 14 Bid Premiums and Bidder Hostility

The following table reports OLS coefficients based on the model specified in section 4.3.2. The dependant variable in equations (1), (2), (5), and (6) is the initial offer premium. In equations (3), (4), (7), and (8), the dependent variable is the final offer premium. Following Eckbo (2009), I estimate the takeover premium by dividing the initial or final offer price (as reported by SDC) by the prevailing market price of the target 42 trading days prior to the announcement date of the bid and then take the natural logarithm of this ratio. *GIM* is the Gompers et al. (2003) corporate governance index that consists of 24 provisions tracked by RiskMetrics. *E*, the alternative measure, is the Bebchuk et al. (2009) governance index consisting of six provisions that are regarded as the most important. On-wave and off-wave classification is based on the Harford (2005) methodology. Standard errors are reported in parenthesis. *, **, and *** denote significance at the 10, 5, and 1 percent level of significance, respectively.

	Off-wave				On-wave			
	Initial Bid		**Final Bid**		**Initial Bid**		**Final Bid**	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Target Characteristics/ Attitude to Bid								
GIM	0.0016		0.0001		0.0012		0.0019	
	(0.0034)		(0.0032)		(0.0042)		(0.0037)	
GIM x Hostile	-0.0091		-0.0073		**0.0179****		**0.0149****	
	(0.0113)		(0.0111)		**(0.0071)**		**(0.0070)**	
E		-0.0018		-0.0057		0.0079		0.0085
		(0.0067)		(0.0062)		(0.0079)		(0.0077)
E x Hostile		**-0.0389***		-0.0308		0.0118		0.0070
		(0.0226)		(0.0207)		(0.0170)		(0.0165)
Dual Class	-0.0122	-0.0103	-0.0111	-0.0079	0.0090	0.0071	-0.0084	-0.0109
	(0.0274)	(0.0271)	(0.0263)	(0.0257)	(0.0473)	(0.0478)	(0.0379)	(0.0385)
Delaware Incorporation	0.0193	0.0172	0.0122	0.0107	0.0014	-0.0035	0.0092	0.0043
	(0.0161)	(0.0156)	(0.0149)	(0.0147)	(0.0229)	(0.0228)	(0.0196)	(0.0195)
Ln(Market Cap)	-0.0297***	-0.0292***	-0.0258***	-0.0254***	-0.0336***	-0.0316***	-0.0278***	-0.0257***
	(0.0080)	(0.0078)	(0.0075)	(0.0074)	(0.0097)	(0.0097)	(0.0074)	(0.0073)
Tobin's Q	0.0259	0.0286	0.0370	0.0395	0.0422	0.0359	0.0948**	0.0894*
	(0.0359)	(0.0357)	(0.0340)	(0.0338)	(0.0590)	(0.0605)	(0.0469)	(0.0463)
Target Run-up	-0.8017***	-0.8082***	-0.6053***	-0.6107***	-0.5843***	-0.5880***	-0.5015***	-0.5043***
	(0.1033)	(0.1024)	(0.0627)	(0.0628)	(0.0767)	(0.0752)	(0.0692)	(0.0678)
Acquirer Characteristics								
Toehold	-0.0328	-0.0388	-0.0320	-0.0376	-0.0422	-0.0396	-0.0339	-0.0320
	(0.0328)	(0.0310)	(0.0306)	(0.0290)	(0.0288)	(0.0284)	(0.0288)	(0.0287)

Table 14 Continued

Acquirer Status	0.0473***	0.0476***	0.0498***	0.0505***	-0.0069	-0.0045	0.0009	0.0023
	(0.0174)	(0.0174)	(0.0170)	(0.0169)	(0.0325)	(0.0326)	(0.0271)	(0.0271)
Horizontal Takeover	0.0098	0.0091	0.0057	0.0048	-0.0405*	-0.0389	-0.0393*	-0.0383*
	(0.0164)	(0.0162)	(0.0154)	(0.0152)	(0.0245)	(0.0245)	(0.0213)	(0.0214)
Deal Characteristics								
Tender Offer	0.0567**	0.0580**	0.0648***	0.0667***	0.0475**	0.0450*	0.0615***	0.0588***
	(0.0255)	(0.0252)	(0.0246)	(0.0243)	(0.0238)	(0.0238)	(0.0221)	(0.0222)
All Stock	-0.0439*	-0.0385	-0.0462*	-0.0410*	0.0737**	0.0726**	0.0584**	0.0574**
	(0.0262)	(0.0262)	(0.0246)	(0.0244)	(0.0323)	(0.0325)	(0.0256)	(0.0260)
Hostile	0.1352	0.1519**	0.1061	0.1185*	-0.1888***	-0.0518	-0.1542**	-0.0327
	(0.1035)	(0.0693)	(0.1041)	(0.0639)	(0.0687)	(0.0427)	(0.0675)	(0.0404)
Intercept	0.5631***	0.5728***	0.5259***	0.5329***	0.7368***	0.7097***	0.5989***	0.5772***
	(0.1092)	(0.1066)	(0.1011)	(0.0986)	(0.1465)	(0.1416)	(0.1065)	(0.1030)
Observations	317	317	314	314	344	344	336	336
R-Squared	0.5654	0.5703	0.3904	0.3988	0.3278	0.3238	0.3188	0.3147
Adjusted R-Squared	0.5467	0.5518	0.3639	0.3728	0.3013	0.2972	0.2913	0.2870

Table 15 Takeover Premiums – 2 Step Heckman Selection Model

The selection and outcome equations form the 2-Step Heckman (1979) Selection Model are reported below. The dependant variable is the final offer premium. Following Eckbo (2009), I estimate the final offer premium by dividing the offer price (as reported on SDC) by the prevailing market price of the target 42 trading days prior to the initial announcement date of the bid and then take the natural logarithm of this ratio. *GIM* is the Gompers et al. (2003) corporate governance index that consists of 24 provisions tracked by RiskMetrics. *E*, the alternative measure, is the Bebchuk et al. (2009) governance index consisting of six provisions that are regarded as the most important. On-wave and off-wave classification is based on the Harford (2005) methodology. Standard errors are presented in parenthesis. *, **, and *** denote significance at the 10, 5, and 1 percent level of significance, respectively.

	Off-wave				**On-wave**			
	Outcome (1)	Selection (2)	Outcome (3)	Selection (4)	Outcome (5)	Selection (6)	Outcome (7)	Selection (8)
Target Characteristics								
GIM	-0.0027	0.0194			0.0027	-0.0288**		
	(0.0033)	(0.0122)			(0.0039)	(0.0129)		
E			-0.0080	0.1409***			0.0080	-0.0700***
			(0.0066)	(0.0254)			(0.0081)	(0.0265)
Dual Class	-0.0111	-0.1463	-0.0062	-0.0817	-0.0485	-0.3859***	-0.0463	-0.3987***
	(0.0257)	(0.1135)	(0.0256)	(0.1150)	(0.0409)	(0.1255)	(0.0411)	(0.1260)
Delaware Incorporation	-0.0070	0.1050	-0.0063	0.0819	0.0070	0.1374**	0.0040	0.1714**
	(0.0163)	(0.0653)	(0.0159)	(0.0654)	(0.0219)	(0.0683)	(0.0218)	(0.0679)
Tobin's Q	0.0349	-0.7869***	0.0344	-0.7659***	0.1353**	-0.1718	0.1388***	-0.1907
	(0.0381)	(0.1725)	(0.0378)	(0.1746)	(0.0534)	(0.1573)	(0.0530)	(0.1581)
Firm Size (Total Assets)		-0.0049		-0.0044		-0.1996***		-0.2076***
		(0.0245)		(0.0249)		(0.0260)		(0.0256)
Free Cash Flow		0.5323		0.5223		0.2309		0.2140
		(0.3544)		(0.3581)		(0.3095)		(0.3098)
Tangible Firm Indicator		-0.2834***		-0.2925***		-0.0386		-0.0312
		(0.1098)		(0.1109)		(0.1147)		(0.1148)
Leverage		0.6232*		0.5394		1.4914***		1.5191***
		(0.3367)		(0.3438)		(0.3463)		(0.3468)
Tangible Firm Indicator x Leverage		0.2224		0.2033		1.3779***		1.3617***
		(0.4778)		(0.4859)		(0.4672)		(0.4677)

Table 15 Continued

Market Cap (42 days prior to bid)	-0.0242***		-0.0237***		-0.0420***		-0.0408***	
	(0.0062)		(0.0061)		(0.0090)		(0.0090)	
Target Run-up	-0.6101***		-0.6092***		-0.4908***		-0.4902***	
	(0.0543)		(0.0541)		(0.0534)		(0.0529)	
Acquirer Characteristics								
Toehold	-0.0156		-0.0188		-0.0340		-0.0309	
	(0.0322)		(0.0321)		(0.0402)		(0.0402)	
Acquirer status	0.0449**		0.0451***		0.0076		0.0050	
	(0.0175)		(0.0174)		(0.0276)		(0.0276)	
Horizontal Takeover	0.0164		0.0161		-0.0393*		-0.0400*	
	(0.0162)		(0.0162)		(0.0209)		(0.0209)	
Deal Characteristics								
Tender Offer	0.0560***		0.0585***		0.0403*		0.0384*	
	(0.0216)		(0.0216)		(0.0231)		(0.0230)	
All Stock	-0.0662**		-0.0635**		0.0541**		0.0571**	
	(0.0268)		(0.0267)		(0.0262)		(0.0263)	
Hostile	0.0352		0.0372		-0.0140		-0.0137	
	(0.0244)		(0.0242)		(0.0267)		(0.0266)	
Inverse Mills Ratio	0.0202		0.0206		0.0986***		0.0987***	
	(0.0166)		(0.0166)		(0.0299)		(0.0297)	
Intercept	0.5082***	-0.8215*	0.4959***	-0.8560**	0.5991***	0.1608	0.5925***	0.1054
	(0.0879)	(0.4287)	(0.0862)	(0.4336)	(0.0980)	(0.2759)	(0.0976)	(0.2664)
Number of Observations	6611		6611		4286		4286	

5.5 Target Firm Performance Subsequent to Failed Takeover Bid

In this section, the long-run performance of firms that were subjected to a takeover bid but which successfully remained independent is briefly examined. In addition to this, I consider if the aggregate number of shareholder right limiting provisions has an impact on the subsequent performance of these firms.

In Table 16, the long-run buy and hold abnormal returns (BHARs), for the 24 month period immediately subsequent to the announcement of a bid failing, are reported. In Panel a, the average BHAR is -10.68%. The fraction of negative abnormal buy and hold returns, following the announcement of a failed takeover contest is 69.8% for the sample of targeted firms. When controlling for differences in the number of anti-takeover provisions, it becomes clear that the performance of firms with fewer ATPs is significantly better than those with more. The difference in performance between strong shareholder right firms (i.e. democratic firms) and poor shareholder right firms (dictatorships) is 14.75%, and this is statistically significant at the 10% level of confidence. Both the mean and median figures suggest that failed takeovers of well governed firms do not result in losses that are on a par with those of poorly governed firms. The mean (median) difference in returns between well governed and poorly governed firms is 14.75% (8.44%). These preliminary findings would imply that anti-takeover provisions may indeed be facilitating managerial entrenchment, and therefore, exacerbating the moral hazard problem. However, as previously discussed, the level of agency problems may be highly contingent on takeover activity. Accordingly, in Panels b and c of Table 16 I split the sample into off-wave and on-wave failed takeovers, respectively.

Table 16 Buy and Hold Abnormal Returns (BHARs) of Failed Takeover Bids

In Table 16 I report the average buy and hold abnormal returns *(BHARs)*, for the 24 month period immediately subsequent to the announcement of a failed takeover bid. In order to calculate the *BHARs*, I use a technique similar to that of Duchin et al. (2013). When distinguishing between on-wave and off-wave failed takeover bids, I again follow the approach adopted by Harford (2005). A firm is classified as a dictatorship (democratic) firm if its GIM index is greater (less) than or equal to 14 (5). a, b, and c denote significance at the 10, 5, and 1 percent level of significance, respectively.

	Q1	Mean	Median	Q3	% Negative
Panel A: Whole Period					
No Control	-0.3672	-0.1068[a]	-0.1919	0.0673	0.6984
Democratic	-0.7272	-0.0529	-0.1544	0.2184	0.6500
Dictatorship	-0.3960	-0.2004[a]	-0.2389	-0.0302	0.7826
Diff $_{(Good-Poor)}$	-0.3312	0.1475[a]	0.0844	0.2486	
Panel B: Off-Wave					
No Control	-0.3553	-0.1287[b]	-0.1423	0.0536	0.7234
Democratic	-0.3261	-0.1249[a]	-0.1835	0.0669	0.7097
Dictatorship	-0.3754	-0.1361[a]	-0.1310	-0.0079	0.7500
Diff $_{(Good-Poor)}$	0.0493	0.0112	-0.0525	0.0748	
Panel C: On-Wave					
No Control	-0.4485	-0.0423	-0.2452	0.4516	0.6250
Democratic	-0.4383	0.2918[a]	0.2173	0.6717	0.4444
Dictatorship	-0.6867	-0.3763[b]	-0.2516	-0.2154	0.8571
Diff $_{(Good-Poor)}$	0.2485	0.6681[b]	0.4688	0.8871	

The differences in abnormal buy and hold returns are staggering when controlling for takeover activity. During periods of normal takeover activity (see Panel b), there is no discernible difference between well and poorly governed firms. The average buy and hold abnormal returns for strong shareholder right firms, following the withdrawal of a takeover bid, is 12.5%. This is comparable to the average BHAR of -13.6% for weak shareholder right firms. In Panel c, when I differentiate between democratic and dictatorship firms during a merger wave, it becomes very apparent that dictatorship firms, on average, are not acting in

the best interest of their shareholders when successfully defending against an on-wave takeover bid. Democratic firms, capable of remaining independent, realise positive abnormal returns in the region of 29% following a failed takeover bid. Dictatorship firms, on the other hand, significantly underperform the benchmark by 38%. Furthermore, when looking at the proportion of firms that experience negative abnormal returns, following a failed takeover attempt on the wave, there is again a rather large difference. Of the dictatorship (democratic) firms that remained independent, 86% (44%) experienced negative returns. These findings are highly consistent with my underlying hypothesis, whereby the behaviour of management may be influenced by the overall level of takeover activity.

The buy and hold long-run abnormal returns reported in Table 16 do not control for changes in leverage, asset sales, increasing specialisation, CEO turnover, change in the number of employees and change in capital expenditure following the termination of the bid. In addition to this, it would also be important to consider if the bid was hostile, the level of insider ownership and/or whether the bidder terminated the contest. All of these variables, except for the incidence of shareholder right provisions, were considered in a very interesting study undertaken by Safieddine and Titman (1999).

5.6 Acquirer Announcement Period Returns

In section 5.2, it was shown that firms with more anti-takeover provisions (i.e. higher GIM and E-Index values) are actually more likely to be targeted during off-wave periods but less so when takeover activity is high. Given that management appears to be less susceptible to the disciplining actions of the market for corporate control during on-wave periods as the number of ATPs rise, they may become complacent and more willing to engage in acquisitions that do not add value for shareholders (Harford et al. 2012, Masulis et al. 2007). In line with this proposition, Masulis et al. (2007) show that managers of firms more susceptible to the takeover market, do indeed make better acquisitions. In contrast to these findings, Humphery and Powell (2008) find no evidence of lower returns for high ATP firms. Humphery et al. (2008) attribute the findings of Masulis et al. (2007) to an endogeneity problem, namely, the omitted variable bias. The variable in question is takeover premia and when included, changes the results. Accordingly, the authors argue that at best, managerial hubris is at play and that ATPs do not prompt managers to engage in value destroying acquisitions.

In the analysis that follows, evidence suggesting that market participants react adversely to acquisition announcements made by high GIM and E firms is uncovered but this is only so when takeover activity is high. This is consistent with the findings of Masulis et al. (2007) and Harford et al. (2012). Furthermore, there is a notable difference in the long-run buy and hold abnormal returns between high and low GIM firms but again this is contingent on the level of takeover activity. This dimension is discussed further is section 5.7. Before looking

at the determinant of announcement period returns in a multivariate setting, univariate statistics presented in Tables 17 and 18 are briefly discussed below.

In Table 17, abnormal bidding firm announcement period returns over three [-1, +1] and five [-2, +2] day event windows, centred on the announcement date, are presented. When failing to control for shifts in takeover activity, I find no statistically significant difference (*T-statistic* is 1.0859) between democratic and dictatorship classified firms. Similarly, off-wave announcement period returns between high and low GIM firms are statistically indistinguishable from zero. When takeover activity is high, the findings are markedly different. In this environment, dictatorship firms, on average, appear to experience negative announcement period returns of 1.08% and 1.34% over three and five day event windows, respectively. In contrast to dictatorship firms, democratic classified firms experience announcement period returns that are no different to zero. As previously discussed, when takeover activity is high, agency problems may also be high due to an impaired corporate information environment. Accordingly, being aware of this potential agency problem, shareholders may not react positively to high GIM firms that engage in on-wave acquisitions.

In Table 18, I replicate the above analysis but use the E index in place of the GIM index for robustness purposes. The findings are largely consistent with that of Table 17, and in fact, provide even stronger support in favour of the view that ATPs facilitate non-value maximising behaviour when takeover activity is high.

Table 17 Univariate Analysis I - Bidding Firm Announcement Period Returns

Cumulative abnormal returns (CARs) over a three (Panel a) and five day (Panel b) event window, centered on the initial announcement date, are reported below. All mean values are reported in decimals. On-wave and off-wave classification is based on the Harford (2005) methodology. Bidding firms are either classified as a democratic (GIM<=5) or dictatorship (GIM>=14) firm, as per standard practice in the literature, where GIM is the Gompers et al. (2003) governance index. T-tests, where the null hypothesis is equal to zero, are performed on all reported CARs and differences in CARs. a, b, and c denote significance at the 10, 5, and 1 percent level of significance, respectively.

Panel A. CARs at announcement [-1,+1]

	Whole Period	**Off-wave**	**On-wave**	**Off-wave *minus* On-wave**
Democracy				
Mean	0.0011	-0.0003	0.0034	-0.0038
Standard Deviation	0.0718	0.0646	0.0822	
t-stat	**0.3085**	**-0.0727**	**0.5063**	**-0.4946**
Observations	379	233	146	
Dictatorship				
Mean	-0.0043	-0.0007	-0.0108	0.0102
Standard Deviation	0.0479	0.0491	0.0452	
t-stat	**-1.2789**	**-0.1575**	**-2.0492**[b]	**1.4650**
Observations	207	134	73	
Democracy - Dictatorship				
Mean	0.0054	0.0004	0.0143	
t-stat	**1.0859**	**0.0601**	**1.6578**[a]	

Panel B. CARs at announcement [-2,+2]

	Whole Period	**Off-wave**	**On-wave**	**Off-wave *minus* On-wave**
Democracy				
Mean	-0.0002	-0.0010	0.0010	-0.0020
Standard Deviation	0.0816	0.0694	0.0982	
t-stat	**-0.0475**	**-0.2140**	**0.1275**	**-0.2330**
Observations	379	233	146	
Dictatorship				
Mean	-0.0037	0.0015	-0.0134	0.0149
Standard Deviation	0.0549	0.0565	0.0507	
t-stat	**-0.9805**	**0.3089**	**-2.2526**[b]	**1.8753**[a]
Observations	207	134	73	
Democracy - Dictatorship				
Mean	0.0035	-0.0025	0.0144	
t-stat	**0.6250**	**-0.3718**	**1.4319**	

Table 18 Univariate Analysis II – Bidding Firm Announcement Period Returns

Cumulative abnormal returns (CARs) over a three (Panel a) and five day (Panel b) event window, centered on the initial announcement date, are reported below. All mean values are reported in decimals. On and off -wave classification is based on the Harford (2005) methodology. Bidding firms are either classified as a democratic (E-Index<4) or dictatorship (E-Index>=4) firm, where E-Index is the Bebchuk et al. (2009) entrenchment Index. T-tests, where the null hypothesis is equal to zero, are performed on all reported CARs and differences in CARs. a, b, and c denote significance at the 10, 5, and 1 percent level of significance, respectively.

Panel A. CARs at announcement [-1,+1]

	Whole Period	**Off-wave**	**On-wave**	**Off-wave *minus* On-wave**
Democracy				
Mean	-0.0012	-0.0019	0.0004	-0.0022
Standard Deviation	0.0584	0.0565	0.0624	
t-stat	**-1.1849**	**-1.6202**	**0.1895**	**-1.0456**
Observations	3,448	2,366	1,082	
Dictatorship				
Mean	-0.0043	-0.0009	-0.0131	0.0122
Standard Deviation	0.0520	0.0496	0.0569	
t-stat	**-2.0711**[b]	**-0.3889**	**-3.0467**[c]	**2.6520**[c]
Observations	635	459	176	
Democracy - Dictatorship				
Mean	0.0031	-0.0010	0.0134	
t-stat	**1.3506**	**-0.3789**	**2.8629**[c]	

Panel B. CARs at announcement [-2,+2]

	Whole Period	**Off-wave**	**On-wave**	**Off-wave *minus* On-wave**
Democracy				
Mean	-0.0008	-0.0010	-0.0004	-0.0006
Standard Deviation	0.0671	0.0645	0.0725	-0.2431
t-stat	**-0.6770**	**-0.7254**	**-0.1645**	
Observations	3,448	2,366	1,082	
Dictatorship				
Mean	-0.0031	0.0005	-0.0124	0.0129
Standard Deviation	0.0619	0.0597	0.0664	
t-stat	**-1.2697**	**0.1658**	**-2.4887**[b]	**2.3631**[b]
Observations	635	459	176	
Democracy – Dictatorship				
Mean	0.0023	-0.0014	0.0121	
t-stat	**0.8655**	**-0.4612**	**2.2111**[b]	

In regressions one and two, reported in Table 19, no statistically significant relationship between announcement period returns and shareholder right limiting provisions is found to exist. This same finding is also observed for off-wave takeovers (see regressions three and four). In line with my findings, Ahn and Shrestha (2013) also find no statistically significant

relationship when referring to their baseline model. It is also consistent with the working paper by Humphery et al. (2008).

When takeover activity is high, a very different story emerges (see models five and six of Table 19). The abnormal announcement period returns that firms' experience during on-wave takeovers is negatively related to the number of shareholder right limiting provisions. The results suggest that announcement period returns are 14.1% lower for each additional provision added to the GIM index. In economic terms, the significance of the E-Index is even higher. For each additional ATP that a firm has, announcement period returns drop by 49.1%. Again, this is only observed for off-wave takeovers. This is consistent with the notion that agency problems are more significant during merger waves, and therefore, are not in the best interests of shareholders. Evidently, I am unable to corroborate the findings of Humphery et al. (2008), even when I address the omitted variable bias they found to impact the Masulis et al. (2007) study. My findings do, however, conform with the proposition advanced by Jensen (2005). Jensen (2005) suggested that agency problems arise when equity becomes overvalued and internal governance is incapable of mitigating such costs.

Given the above findings, it is not unexpected, as emphasised by Ahn et al. (2013), that we find differences in the signs of coefficients and significance levels for corporate governance variables across studies. These inconsistencies may, in part, be the result of period-specific returns and/or a lack of adequate controls for takeover activity. Ahn et al. (2013), for example, use a sample set beginning in 1998 and ending in 2006. In comparison, the findings of Masulis et al. (2007) are based on a time period beginning in 1990 and ending in 2003 inclusive. To further highlight the significance of period specific results, Bebchuk et al.

(2013) show that although there was an inverse relationship between abnormal returns and poor corporate governance during 1991 to 1999, no such relationship existed during the 2000 to 2008 time period. They attribute this observation to market participants learning to appreciate the relevance of good corporate governance. This proposition, however, is somewhat inconsistent with the findings of Core et al. (2006) that show investors were not surprised by differences in operating performance between good and bad governance firms, during the 1990 to 1999 time period. By controlling for differences in overall takeover activity, I am able to generate results that can partly reconcile the mixed evidence presented to date.

As a robustness measure, I also run a selection model to address potential endogeneity concerns arising from selection and omitted variable bias. The results are presented in Table 20 below. The outcome and selection equations, for off-wave takeovers, are presented in models one and two, respectively. Interestingly, high E index firms are more likely to engage in acquisitions when takeover activity is low (see model 2). Again, there is no relationship between announcement period returns and shareholder right-limiting provisions. During periods of elevated takeover activity, The E index is again negatively related to announcement period returns and statistically significant (see model 4).

Table 19 Acquirer Announcement Period Cumulative Abnormal Returns

The announcement period cumulative abnormal returns, based on a value weighted market model over an event window (-1, +1) days relative to the announcement date, is used as the dependent variable. *GIM* is the Gompers et al. (2003) corporate governance index that consists of 24 provisions tracked by RiskMetrics. *E*, the alternative measure, is the Bebchuk et al. (2009) governance index consisting of six provisions that are regarded as the most important. The *Dual class* variable is binary and set to one if true, and zero otherwise. *Firm size* is calculated as the natural log of total assets, *Tobin's Q* is determined by dividing the market value of assets over the book value of assets, *free cash flow* is defined as the sum of net income before extraordinary items and depreciation minus capital expenditure divided by total assets, *leverage* is the ratio of interest bearing debt to total assets and *Relative Size* is determined by dividing the deal value, as reported by SDC, by the acquirer's market capitalisation 42 days prior to the initial bid announcement date. The following variables are also all binary and set to one if true and zero otherwise – *High Tech*, *Tender*, *Diversifying Acquisition*, *Public x Cash, Public x Stock, Public x Cash, Private x Cash, Private x Stock,* and *Subsidiary x Cash*. T-statistics are presented in parenthesis. *, **, and *** denote significance at the 10, 5, and 1 percent level of significance, respectively. Equations (1) and (2) also include year fixed effects.

	Whole Period		**Off-wave**		**On-wave**	
	(1)	(2)	(3)	(4)	(5)	(6)
GIM	-0.0466		-0.00598		-0.141**	
	(-1.05)		(-0.11)		(-2.05)	
E		-0.147		-0.0166		-0.491***
		(-1.57)		(-0.15)		(-3.12)
Dual Class	-0.128	-0.170	-0.618	-0.622	1.009	0.899
	(-0.30)	(-0.40)	(-1.24)	(-1.27)	(1.23)	(1.09)
Firm Size	-0.278***	-0.298***	-0.324***	-0.326***	-0.219	-0.280
	(-3.33)	(-3.55)	(-3.47)	(-3.47)	(-1.26)	(-1.65)
Tobin's Q	0.0908	0.0811	-0.618	-0.623	-0.0262	0.0761
	(0.11)	(0.09)	(-0.71)	(-0.71)	(-0.02)	(0.05)
Free Cash Flow	0.821	0.664	0.108	0.0804	2.247	2.314
	(0.39)	(0.31)	(0.04)	(0.03)	(0.72)	(0.73)
Leverage	1.597	1.672	2.995**	3.004**	-0.183	0.0705
	(1.43)	(1.49)	(2.18)	(2.18)	(-0.10)	(0.04)
Relative Size	-1.280**	-1.287**	-1.548*	-1.549*	-1.065*	-1.080*
	(-2.19)	(-2.20)	(-1.77)	(-1.78)	(-1.70)	(-1.74)
High Tech Dummy	-0.362	-0.366	-1.208**	-1.209***	2.432***	2.425***
	(-0.95)	(-0.97)	(-2.58)	(-2.61)	(3.14)	(3.16)
Relative Size x High Tech	-0.551	-0.537	0.230	0.232	-10.76**	-10.52**
	(-0.45)	(-0.44)	(0.20)	(0.20)	(-2.30)	(-2.24)
Tender Dummy	-0.568	-0.552	-0.557	-0.556	-0.462	-0.385
	(-1.32)	(-1.28)	(-1.07)	(-1.06)	(-0.66)	(-0.55)
Diversifying Acquisition	-0.403*	-0.402*	-0.521*	-0.521*	-0.341	-0.316
	(-1.69)	(-1.69)	(-1.80)	(-1.80)	(-0.85)	(-0.79)
Public Target x Cash	0.202	0.202	0.0569	0.0581	1.162*	1.083
	(0.59)	(0.59)	(0.14)	(0.14)	(1.74)	(1.62)
Public Target x Stock	-2.670***	-2.667***	-3.913***	-3.915***	-1.398**	-1.349*
	(-5.73)	(-5.74)	(-5.77)	(-5.77)	(-1.98)	(-1.91)
Private Target x Cash	0.229	0.243	0.0573	0.0591	0.827	0.865
	(0.61)	(0.65)	(0.14)	(0.15)	(0.96)	(1.01)
Private Target x Stock	-0.242	-0.206	-0.695	-0.690	-0.236	-0.173
	(-0.49)	(-0.43)	(-1.11)	(-1.10)	(-0.26)	(-0.20)
Subsidiary x Cash	0.515*	0.530**	0.137	0.138	1.333**	1.397**
	(1.94)	(1.99)	(0.45)	(0.45)	(2.26)	(2.36)
Constant	4.493***	4.457***	5.399***	5.392***	3.242*	3.191*
	(2.68)	(2.73)	(3.05)	(3.12)	(1.76)	(1.85)
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	3416	3416	2384	2384	1032	1032
R-Squared	0.055	0.055	0.077	0.077	0.077	0.083
Adjusted R-Square	0.043	0.043	0.060	0.060	0.045	0.051

As previously alluded to, during periods of elevated takeover activity, the information environment is likely to be impaired. This impairment is a result of information dissemination constraints (Duchin et al. 2013). Accordingly, incumbents may be of the belief that they can "get away" with making value-destroying acquisitions, so to speak. In line with this, studies have actually shown that CEO turnover is less sensitive to poor acquisitions made during merger waves. Consequently, poorly governed firms that announced acquisitions during periods of elevated takeover activity, are not well received by the market.

Table 20 Heckman Selection Model – Acquirer Announcement Period CARs

In the following table, I address possible endogeneity issues arising from selection bias and omitted variable concerns by employing the Heckman Selection Model estimated in STATA 11SE. In the selection equation (identified as select in the table), a probit model is estimated to determine the likelihood of a firm engaging in an acquisition. Taking the likelihood of initiating a bid into account, I estimate the selection adjusted equation. The selection adjusted equations use the announcement period cumulative abnormal return (over a -1, +1 window relative to the announcement date) as the dependent variable. I control for both firm and deal specific characteristics. Standard errors are presented in parenthesis. *, **, and *** denote significance at the 10, 5, and 1 percent level of significance, respectively.

	Off-wave Takeover Activity		**On-wave Takeover Activity**	
	(1)	(2)	(3)	(4)
	Outcome	Selection	Outcome	Selection
E	-0.0554	0.0429***	-0.5207***	-0.0067
	(0.1213)	(0.0102)	(0.1858)	(0.0156)
Dual Class	-0.4229	0.0683	0.7158	-0.0319
	(0.4873)	(0.0460)	(0.8962)	(0.0727)
Firm Size	-0.2817	0.2320***	1.1961***	0.2202***
	(0.3411)	(0.0087)	(0.4580)	(0.0135)
Tobin's Q	-0.5882	-0.1544**	1.1623	0.2451**
	(0.7736)	(0.0694)	(1.2838)	(0.0959)
Free Cash Flow	0.0098	0.0108***	0.0453	0.0043*
	(0.0227)	(0.0017)	(0.0324)	(0.0024)
Leverage	0.0303*	-0.0052***	-0.0266	-0.0052***
	(0.0155)	(0.0010)	(0.0257)	(0.0016)
Relative Size	-0.0132***		-0.0112***	
	(0.0039)		(0.0041)	
High Tech Indicator	-1.2266***		2.6370***	
	(0.4642)		(0.7859)	
Relative Size x High Tech Ind.	0.0095		-10.7510***	
	(0.6074)		(2.4440)	
Tender Offer	-0.7054		-0.8378	
	(0.5306)		(0.8029)	
Diversifying Acquisition	-0.3538		-0.4665	
	(0.2936)		(0.4199)	
Public Target x Cash	0.3201		1.3541	
	(0.4480)		(0.8275)	
Public Target x Stock	-3.8849***		-1.2596**	
	(0.5248)		(0.5669)	
Private Target x Cash	0.2111		0.8301	
	(0.4301)		(0.7858)	
Private Target x Stock	-0.6582		-0.2569	
	(0.6978)		(0.7713)	
Subsidiary x Cash	0.3797		1.2309*	
	(0.3904)		(0.6500)	
Inverse Mills Ratio	0.5662		8.8326***	
	(1.7871)		(2.5754)	
Intercept	2.1632	-3.0925***	-22.3197***	-2.7821***
	(5.8156)	(0.0919)	(7.6449)	(0.1465)
Number of Observations	18,236		6,330	

5.7 Long-Run Performance

In this final section, I examine the performance of on and off-wave, long- run buy and hold abnormal returns of takeovers. Much of the earlier literature, regarding long-run, post-merger performance, found evidence of wealth destruction (Agrawal and Jaffe 2001, Agrawal, Jaffe and Mandelker 1992, Asquith 1983, Langetieg 1978). Agrawal et al. (1992), for example, showed that bidding firm shareholders lost, on average, ten percent in wealth over a five year period following a merger. In a more recent review of the literature, Agrawal et al. (2001) suggested that this negative performance was isolated to mergers and not tender offers. Savor et al. (2009), on the other hand, found that overvalued bidders could, and indeed did, create value for long-term shareholders by using equity as an acquisition currency. In their study they found that successful stock bidders significantly outperformed unsuccessful bidders over one, two, and three year time horizons. Contrary to this conclusion, Fu et al. (2013) argue that overvalued acquirers actually overpay for the targets they acquire and that CEO compensation increases, as opposed to wealth creation, is the main motive for such acquisitions.

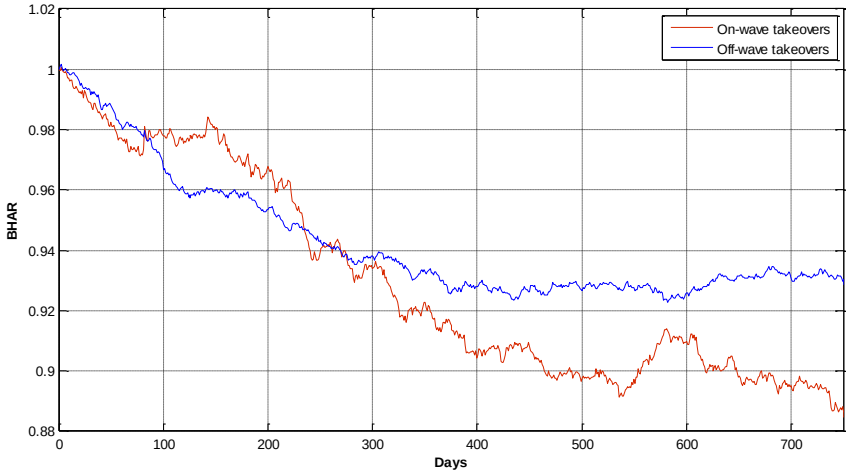
Duchin et al. (2013) examined the long-run performance of in-wave and out-of-wave acquisitions, and found that in-wave bidders significantly underperformed out-of-wave bidders. In Figure 1 - Panel a, I replicate this observation with my sample of firm, and confirm the Duchin et al. (2013) findings. The long-run buy and hold abnormal returns for in-wave acquisitions are clearly lower compared to off-wave takeovers. As previously discussed, the reason for this performance differential could be agency related. Fu et al. (2013) showed that the corporate governance of overvalued bidders, relative to overvalued

non-bidders, was indeed much poorer. Consistent with my findings and that of Fu et al. (2013), Duchin et al. (2013) reported that the corporate governance of on-wave acquirers, a period where stocks are more likely to be overvalued, is generally poorer. When combining these two studies, it is not surprising to find that on-wave takeovers are more likely to underperform, given that the bidders are more likely to be overvalued (Fu et al. 2013, Jensen 2005, Rhodes-Kropf et al. 2005) and have poorer corporate governance (Duchin et al. 2013) in this period.

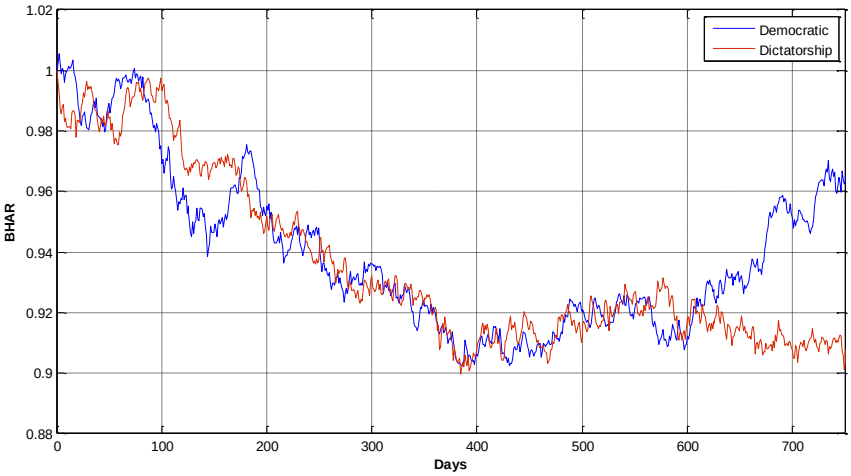
Figure 1 Buy and Hold Abnormal Returns: Post Acquisition Performance

Daily buy and hold abnormal returns (BHARs) for bidding firm shareholders, following the successful completion of a bid, over a holding period of 36 months are presented below. On-wave and off-wave classification is based on the methodology discussed in Harford (2005). The benchmark portfolio is a weighted average of the acquirer and target firm industries. To qualify for inclusion in the benchmark portfolio, the benchmark firms must not have been involved in any acquisitions over a three year window surrounding the merger date. The weights assigned to these two portfolios are based on the relative size of the target and bidder in the combined firm. This is based on the market capitalisation 42 days prior to the bid. The distinction between democratic and dictatorship firms is determined by the number of shareholder right limiting provisions that a firm employs. To be specific, bidding firms with GIM index values less than or equal to five are regarded as democratic. Dictatorship firms have GIM scores greater than or equal to 14.

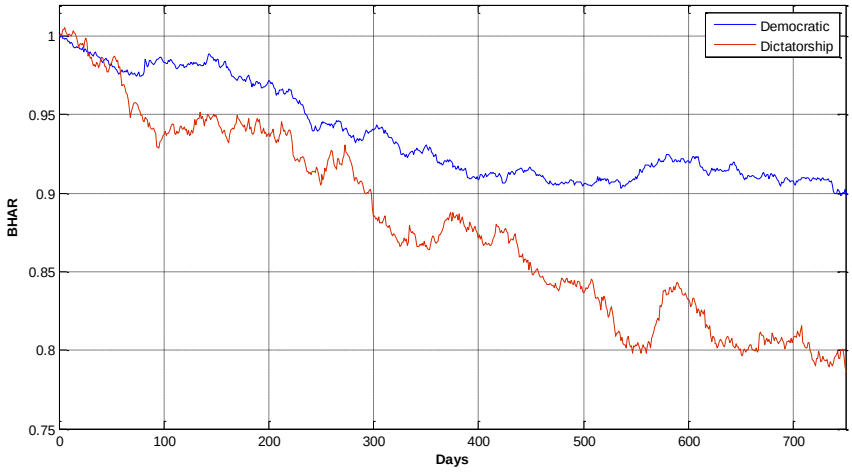
Panel A. On-wave and Off-wave Takeovers



Panel B. Off-wave Takeovers



Panel C. On-wave Takeovers



Neither the Duchin et al. (2013) nor the Fu et al. (2013) studies, however, consider the impact of differences in corporate governance during different levels of takeover activity. In Panels b and c. of Figure 1, I further split the acquisitions made on and off the wave into those done by democratic (GIM less than 5) and dictatorship firms (GIM greater than 14). Two novel results emerge from this level of segregation. Firstly, as illustrated in Panel b, the long-run, buy and hold abnormal returns is comparable between democratic and dictatorship firms. In both instances, the acquisitions used to construct this sample destroy value in the subsequent 36 month period, following the acquisition. Interestingly, however, after approximately 600 days, the performance of firms classified as democratic (i.e. strong governance firms) show improvements in performance that is not observed for the dictatorship firms.

In Panel C. of Figure 1, the post 36 month performance of bidding firms that were active during periods of elevated takeover activity is evaluated. In contrast to off-wave performance where I do not observe much difference in performance between high and low GIM firms, the difference is now very noticeable. Regardless of whether the firms are classified as a dictatorship or democratic regime, acquisitions, on average, appear to underperform. The level of underperformance, however, appears to be partly contingent on the firms' governance regime. Democratic firms, as expected, perform substantially better than dictatorship firms. Over the 36 month investment horizon, democratic firms (GIM<=5) lose on average 10 cents in the dollar. Dictatorship firms (GIM>=14) lose approximately 20 cents for every dollar invested in the company following the completion of the acquisition. This performance differential is likely due to dictatorship firms being overvalued, perhaps because of investors underestimating the significance of strong corporate governance during merger waves. This overvalued equity then causes agency problems, as articulated by Jensen (2005),

when the corporate governance of a firm is incapable of constraining non-value maximising behaviour of incumbents.

6 Conclusion

Research into corporate governance has received a considerable amount of attention in recent decades. In this study, the relationship between the availability of shareholder right limiting provisions, otherwise known as anti-takeover provisions (ATPs), and their impact on the market for corporate control was examined. Unlike previous studies which have examined the two, I also explicitly controlled for the level of takeover activity. This was done to control for differences in the corporate information environment and potential escalation in agency costs that is presumed to occur during merger waves. The key findings of this research will be able to assist policy makers, investors and industry professionals alike, in assessing the significance of shareholder right limiting provisions.

Both the benefits and costs involved with permitting incumbents to use shareholder right limiting provisions have been, and still are being, vigorously debated. Much of the extant literature has shown that firm value is negatively related to the number of shareholder right limiting provisions. To be specific, studies have shown that ATPs facilitate managerial entrenchment by impairing the disciplining function of the market for corporate control. Accordingly, it is important to understand the ramifications of ATPs given that the Australian evidence would favour a market where shareholder right limiting provisions are largely invalidated (Humphery-Jenner et al. 2011). The findings in the literature, however, are not unanimous. In the absence of ATPs, incumbents may be subject to takeover pressures which may prompt them to engage in myopic behaviour. Stein (1988), for example, argued that undue takeover pressure may induce managers to forgo profitable projects to enhance short-term earnings, which in turn results in sub-optimal long-run performance. Accordingly, by

permitting incumbents to utilize shareholder right limiting provisions in order to prevent opportunistic bidding or shareholder myopia, firm value may actually be enhanced.

The key findings of this research project suggest that the benefits and costs of shareholder right limiting provisions are time-varying. During merger waves, the evidence would suggest that incumbents use anti-takeover provisions to facilitate managerial entrenchment. When takeover activity is normal, however, these same provisions do not appear to impede the effectiveness of the market for corporate control. Bid premiums, under friendly negotiations, are not impacted by the presence of shareholder right limiting provisions. This contrasts with the long-standing proposition, in favour of ATP use, which argues that incumbents are in a better position to negotiate higher premiums when they have access to ATPs. Turning to the acquirer, bidding firm announcement period returns are negatively related to ATPs but only so on-the-wave. Consistent with this finding, the long-run post acquisition performance of bidding firms is negatively related to corporate governance. This finding, however, again only holds for on-wave acquisitions. Corporate governance does not appear to be a determinant of long-run post-acquisition performance off the wave. These key findings are discussed in more detail below.

In regards to the likelihood of a firm being targeted, companies with poor corporate governance, based on both the Gompers et al. (2003) and Bebchuk et al. (2009) entrenchment indices, are actually more likely to be targeted, but only so, when takeover activity is low. This is consistent with existing studies that find that the market for corporate control is an effective mechanism for addressing inefficiencies in the market. Based on the marginal

effects derived from a probit model, a one standard deviation increase in the GIM index is associated with a 2.21% increase in takeover likelihood during non-wave takeovers. This is a statistically and economically significant 60.75% increase in the likelihood of being targeted, relative to the unconditional 5.13% increase. Similarly, the probability of being targeted, based on the E-Index marginal effect, is 88.52% relative to the unconditional likelihood during off-wave periods. Accordingly, I do not find evidence that corroborates the conventional view that ATPs protect incumbents from the market for corporate control. On the contrary, the findings strongly support the argument that high ATP firms are more likely to be targeted during off-wave periods.

These findings, however, are dramatically altered by the presence of a merger wave. When takeover activity is high, it can be argued that agency problems may become more widespread and substantially more harmful to shareholder wealth (Duchin et al. 2013). This increase in agency problems may, in part, arise as a result of an impaired, corporate information environment arising from information processing constraints. Prior studies have indeed shown an inverse relationship between analyst forecast quality and the number of companies/industries an analyst follows (Clement et al. 2005). In this study, I find evidence of decreased analyst quality, when takeover activity is high, relative to non-wave takeover periods. This is not surprising, given the resource constraints that analysts would experience when needing to evaluate a large number of acquisitions over a relatively short period of time. When corporate opacity increases, it becomes inherently more difficult to monitor and evaluate the actions of incumbents (Adams and Ferreira 2007). Managers, aware of this,

reduce monitoring and may therefore choose to engage in behaviour that does not maximize shareholder wealth.

In line with the above discussion, the evidence would suggest that firms do indeed use ATPs to facilitate non-value maximizing behaviour during merger waves. The probability of an average firm being targeted drops off from 12.37% for firms with no anti-takeover provisions to 4.96% for firms having all six provisions that constitute the E-Index. To highlight the significance of shareholder right limiting provisions during merger waves, I find that a one standard deviation increase in the GIM index is associated with a 2.68% decrease in the likelihood of being targeted. Although this may seem small, it is equivalent to a 74.6% decrease in the likelihood of being targeted relative to the unconditional likelihood (10.34%).

The probability of an initial bid succeeding, however, appears to be largely independent of anti-takeover provisions. In one instance, I found that the E-Index decreased the likelihood of an initial bid succeeding. This, of course, does not imply that managers are using these provisions to facilitate entrenchment. It may in fact indicate that these provisions are indeed being used by management to enhance their negotiating capacity and therefore, to attempt to extract a higher premium for the benefits of their existing shareholders. Further research, nevertheless, is required to assess the significance of this finding. Given that targets are selected, not chosen randomly, it is also highly likely that acquirers would have already assessed the significance of target resistance and their inclination to use any available ATPs, before launching a bid. Thus, although ATPs are significant in determining the likelihood of a bid, they appear to have no bearing on the outcome of a bid once announced. The

characteristics of a bid, on the other hand, offer significantly more insight into the likelihood of a bid succeeding. In particular, the presence of a target termination fee, method of payment and decision to acquire a toehold all significantly impact the outcome of an initial bid succeeding far more than the number of shareholder right limiting provisions that a target firm employs.

Initially, I find no difference in either initial or final offer premiums between well and poorly governed firms, regardless of how active the takeover market is and even when controlling for potential endogeneity problems arising from selection bias. When considering the interaction effect between the governance indices (GIM and E-Index) and bidder hostility, a different story emerges. Neither the GIM nor the E indices are determinants of bid premium when the bid is friendly. When the bid is hostile, on the other hand, I find a statistically significant relationship between the GIM and offer premiums. The economic magnitude of this change is also quite substantial.

In the event a firm has no takeover defences in place and is approached by a hostile bidder on the wave, final offer premiums are 15.42% lower when compared to a friendly suitor. Evidently, it would seem that target firm shareholders are better off when the bid is friendly in nature. The difference between friendly and hostile offer premiums, however, decreases as the number of provisions increase. When GIM is arbitrarily set to five, for example, the difference between hostile and friendly bids becomes 7.97%. The point at which hostile bid premiums exceed that of friendly bid premiums is when the target has 11 or more provisions. This is presumably because of the improved negotiating capacity, afforded to management,

given the larger array of anti-takeover provisions incumbents have at their disposal. Strangely, ATPs are negatively related to off-wave offer premiums when the bidder is hostile. These findings, however, are not robust to different model specifications.

Finally, to help further establish if ATPs are being used to facilitate managerial entrenchment, I also examined the relationship between target firm performance, following a failed takeover bid, and the number of shareholder right limiting provisions. If they do facilitate entrenchment, then there should be a negative relationship between the two. Alternatively, the presence of a positive relationship would suggest that incumbents are using shareholder right limiting provisions to stop opportunistic bidding and/or shareholder myopia.

I find no difference in long-run buy and hold abnormal returns, during off-wave periods, between strong and poor corporate governance firms pursuant to failed takeover bids. This would suggest that ATPs are not facilitating value-decreasing endeavours, when takeover activity is not high and is again consistent with the proposition that agency problems are lower when takeover activity is low. In contrast to off-wave failed takeovers, I find a startling difference in long-run, post failed-bid, performance between good and poor corporate governance target firms. When takeover activity is high, the difference in returns between good and poorly governed firms is 66.81% and is statistically significant at the 5% level of significance. On-the-wave, well governed firms actually realise positive returns in the vicinity of 29%, following a failed takeover bid. This compares to a highly significant and negative long-run return of 38% for poorly governed firms. When takeover activity is normal,

both good and poor corporate governance firms appear to underperform subsequent to a failed takeover bid but the difference in performance between the two types of firms is only 1.12% and is not statistically significantly different from zero.

Turning to the acquirer, I find a significantly negative relationship between abnormal announcement period returns (for bidding firms) and the number of ATPs during on-wave takeover bids but not so off the wave. These results are also robust to endogeneity concerns pertaining to selection and omitted variable biases. If management does not use ATPs to facilitate entrenchment when takeover activity is low, it may explain why markets do not react adversely to acquisition announcements made by these high GIM and E firms off the wave. On the contrary, when takeover activity is high, markets respond increasingly more negatively to the announcement of a takeover bid by poorly governed firms. Granted, the announcement period returns may simply reflect an adjustment for bidder overvaluation which is more likely during a wave. However, even when controlling for this possibility, the inverse relationship continues to hold. Furthermore, this shareholder non-value maximizing behaviour may in part explain why high GIM and E firms are more likely to be targeted when agency problems subside (i.e. outside the merger wave).

To conclude this study, I also examined the long run performance of on-wave and off-wave acquisitions, controlling for differences in corporate governance. Again, no previous study to the best of my knowledge has explicitly examined this. Consistent with Duchin et al. (2013), the long run performance of in-wave corporate acquisitions is much lower in comparison to off-wave takeovers. Duchin et al. (2013) argued that the poor long-run performance of in-

wave acquirers was, in part, due to the poor corporate governance of these firms. In other words, on-wave acquirers had poorer corporate governance compared to off-wave acquirers. When I discriminated between good and poor corporate governance acquirers, on the wave, I found that good corporate governance firms substantially outperformed the poor governance firms. In fact, the deleterious long-run performance of on-wave acquirers that Duchin et al. (2013) identified is very much confined to the poor governance firms. The performance of good corporate governance firms, on the wave, is very much in line with the performance of off-wave acquisitions. Furthermore, although poor corporate governance firms make acquisitions that underperform the acquisitions of good corporate governance firms on the wave, this is not so for off-wave acquisitions. When takeover activity is normal, the long-run, post-acquisition performance of good and bad governance firms is very much in line with each other.

Future researchers may wish to consider evaluating which shareholder right limiting provisions are responsible for driving the time-varying relationships documented in this thesis. In doing so, this may better assist investors and policy makers alike in formulating and implementing future investment and policy decisions, respectively. In addition to this, future studies could also consider the interaction between shareholder right limiting provisions and other governance mechanisms. The market for corporate control, which may be impacted by shareholder right limiting provisions, is albeit one tool that can be used to discipline non-value maximising behaviour. Accordingly, studying the interaction between shareholder right limiting provisions and other governance mechanisms, in the light of different market conditions, may further enhance our understanding of what constitutes good corporate

governance. This research opportunity, however, was not an option in the present study due to data availability limitations.

7 Reference List

Adams, Renee B, and Daniel Ferreira, 2007, A theory of friendly boards, *The Journal of Finance* 62, 217-250.

Agrawal, A, and JF Jaffe, 2003, Do takeover targets underperform? Evidence from operating and stock returns, *Journal of Financial and Quantitative Analysis* 38, 721-746.

Agrawal, A, and RA Walkling, 1994, Executive careers and compensation surrounding takeover bids, *Journal of Finance* 49, 985-1014.

Agrawal, Anup, and Jeffrey F Jaffe, 2001, The post-merger performance puzzle, *Advances in Mergers & Acquisitions* 1, 7-41.

Agrawal, Anup, Jeffrey F Jaffe, and Gershon N Mandelker, 1992, The post-merger performance of acquiring firms: A re-examination of an anomaly, *The Journal of Finance* 47, 1605-1621.

Ahn, Seoungpil, and Keshab Shrestha, 2013, The differential effects of classified boards on firm value, *Journal of Banking & Finance* 37, 3993-4013.

Alexandridis, George, Christos F Mavrovitis, and Nickolaos G Travlos, 2012, How have M&As changed? Evidence from the sixth merger wave, *The European Journal of Finance* 18, 663-688.

Ambrose, Brent W., and William L. Megginson, 1992, The role of asset structure, ownership structure, and takeover defences in determining acquisition likelihood, *Journal of Financial and Quantitative Analysis* 27, 575-589.

Andrade, Gregor, Mark Mitchell, and Erik Stafford, 2001, New evidence and perspectives on mergers, *The Journal of Economic Perspectives* 15, 103-120.

Asquith, Paul, 1983, Merger bids, uncertainty, and stockholder returns, *Journal of Financial Economics* 11, 81-83.

Banerjee, Ajeyo, and E Woodrow Eckard, 1998, Are mega-mergers anticompetitive? Evidence from the first great merger wave, *The Rand Journal of Economics* 803-827.

Barnes, Paul, 1999, Predicting UK takeover targets: some methodological issues and an empirical study, *Review of Quantitative Finance & Accounting* 12, 283-301.

Bates, T.W., D.A. Becher, and M.L. Lemmon, 2008, Board classification and managerial entrenchment: Evidence from the market for corporate control, *Journal of Financial Economics* 87, 656-677.

Bates, Thomas W, and Michael L Lemmon, 2003, Breaking up is hard to do? An analysis of termination fee provisions and merger outcomes, *Journal of Financial Economics* 69, 469-504.

Bauguess, Scott, and Mike Stegemoller, 2008, Protective governance choices and the value of acquisition activity, *Journal of Corporate Finance* 14, 550-566.

Bebchuk, L., A. Cohen, and A. Ferrell, 2009, What matters in corporate governance?, *Review of Financial Studies* 22, 783-827.

Bebchuk, L.A., and A. Cohen, 2005, The costs of entrenched boards, *Journal of Financial Economics* 78, 409-433.

Bebchuk, Lucian, Alma Cohen, and Charles Wang, 2013, Golden parachutes and the wealth of shareholders, *Harvard Law and Economics Discussion Paper*.

Bebchuk, Lucian, Alma Cohen, and Charles Wang, 2013, Learning and the disappearing association between governance and returns, *Journal of Financial Economics* 323-348.

Berkovitch, Elazar, and Naveen Khanna, 1991, A theory of acquisition markets: Mergers versus tender offers, and golden parachutes, *Review of Financial Studies* 4, 149-174.

Betton, S., B.E. Eckbo, and K.S. Thorburn, 2008, Corporate Takeovers, *Handbook of Corporate Finance: Empirical Corporate Finance* 2, 291-430.

Betton, Sandra, and B Espen Eckbo, 2000, Toeholds, bid jumps, and expected payoffs in takeovers, *Review of Financial Studies* 13, 841-882.

Bhide, Amar, 1990, Reversing corporate diversification, *Journal of Applied Corporate Finance* 3, 70-81.

Bond, S, and C Meghir, 1994, Dynamic investment models and the firm's financial policy, *The Review of Economic Studies* 197-222.

Bouwman, C.H.S., K. Fuller, and A.S. Nain, 2009, Market valuation and acquisition quality: Empirical evidence, *Review of Financial Studies* 22, 633-679.

Bradley, Michael, Anand Desai, and E Han Kim, 1988, Synergistic gains from corporate acquisitions and their division between the stockholders of target and acquiring firms, *Journal of Financial Economics* 21, 3-40.

Chang, Saeyoung, 1998, Takeovers of privately held targets, methods of payment, and bidder returns, *The Journal of Finance* 53, 773-784.

Chemmanur, Thomas, and Xuan Tian, 2013, Do anti-takeover provisions spur corporate innovation?, AFA 2012 Chicago Meetings Paper.

Chidambaran, NK, K John, Z Shangguan, and G Vasudevan, 2010, Hot and cold merger markets, *Review of Quantitative Finance and Accounting* 34, 327-349.

Clement, Michael B, 1999, Analyst forecast accuracy: Do ability, resources, and portfolio complexity matter?, *Journal of Accounting and Economics* 27, 285-303.

Clement, Michael B, and Senyo Y Tse, 2005, Financial analyst characteristics and herding behavior in forecasting, *The Journal of finance* 60, 307-341.

Comment, Robert, and G William Schwert, 1995, Poison or placebo? Evidence on the deterrence and wealth effects of modern antitakeover measures, *Journal of Financial Economics* 39, 3-43.

Core, John E, Wayne R Guay, and Tjomme O Rusticus, 2006, Does weak governance cause weak stock returns? An examination of firm operating performance and investors' expectations, *The Journal of Finance* 61, 655-687.

Core, John E, Robert W Holthausen, and David F Larcker, 1999, Corporate governance, chief executive officer compensation, and firm performance, *Journal of financial economics* 51, 371-406.

Cotter, James F, and Marc Zenner, 1994, How managerial wealth affects the tender offer process, *Journal of Financial Economics* 35, 63-97.

Cremers, KJ, and Allen Ferrell, 2010, Thirty years of shareholder rights and firm valuation, CELS 2009 4th Annual Conference on Empirical Legal Studies Paper.

Daines, Robert, and Michael Klausner, 2001, Do IPO charters maximize firm value? Antitakeover protection in IPOs, *Journal of Law, Economics, and Organization* 17, 83-120.

Denis, David J., and Timothy A. Kruse, 2000, Managerial discipline and corporate restructuring following performance declines, *Journal of Financial Economics* 55, 391-424.

Dickerson, AP, HD Gibson, and E Tsakalotos, 1998, Takeover risk and dividend strategy: A study of UK firms, *The Journal of Industrial Economics* 46, 281-300.

Dietrich, J. Kimball, and Eric Sorensen, 1984, An application of logit analysis to prediction of merger targets, *Journal of Business Research* 12, 393-402.

Dodd, Peter, and Richard Ruback, 1977, Tender offers and stockholder returns : An empirical analysis, *Journal of Financial Economics* 5, 351-373.

Donaldson, Gordon, 1994, The corporate restructuring of the 1980s - and its Import for the 1990s, *Journal of Applied Corporate Finance* 6, 55-69.

Dong, M., D. Hirshleifer, S. Richardson, and S.H. Teoh, 2006, Does investor misvaluation drive the takeover market?, *The Journal of Finance* 61, 725-762.

Duchin, Ran, and Breno Schmidt, 2013, Riding the merger wave: Uncertainty, reduced monitoring, and bad acquisitions, *Journal of Financial Economics* 69-88.

Duru, Augustine, Dechun Wang, and Yijiang Zhao, 2013, Staggered boards, corporate opacity and firm value, *Journal of Banking & Finance*.

Eckbo, B Espen, 2009, Bidding strategies and takeover premiums: A review, *Journal of Corporate Finance* 15, 149-178.

Eddey, Peter H., 1991, Corporate raiders and takeover targets, *Journal of Business Finance & Accounting* 18, 151-171.

Faleye, Olubunmi, 2007, Classified boards, firm value, and managerial entrenchment, *Journal of Financial Economics* 83, 501-529.

Fallon, Ivan, and James Srodes, 1988. *Takeovers* (Pan Books, London).

Fama, Eugene F, 1980, Agency problems and the theory of the firm, *The Journal of Political Economy* 88, 288-307.

Fama, Eugene F, and Kenneth R French, 1997, Industry costs of equity, *Journal of Financial Economics* 43, 153-193.

Feng, Gu, and Baruch Lev, 2011, Overpriced shares, ill-advised acquisitions, and goodwill impairment, *Accounting Review* 86, 1995-2022.

Field, Laura Casares, and Jonathan M. Karpoff, 2002, Takeover defenses of IPO firms, *The Journal of Finance* 57, 1857-1889.

Franks, Julian, and Colin Mayer, 1996, Hostile takeovers and the correction of managerial failure, *Journal of Financial Economics* 40, 163-181.

Fu, Fangjian, Leming Lin, and Micah S. Officer, 2013, Acquisitions driven by stock overvaluation: Are they good deals?, *Journal of Financial Economics* 109, 24-39.

Fuller, Kathleen, Jeffry Netter, and Mike Stegemoller, 2002, What do returns to acquiring firms tell us? Evidence from firms that make many acquisitions, *The Journal of Finance* 57, 1763-1793.

Garvey, G.T., and G. Hanka, 1999, Capital structure and corporate control: The effect of antitakeover statutes on firm leverage, *The Journal of Finance* 54, 519-546.

Giroud, Xavier, and Holger M Mueller, 2011, Corporate governance, product market competition, and equity prices, *The Journal of Finance* 66, 563-600.

Goel, A.M., and A.V. Thakor, 2010, Do envious CEOs cause merger waves?, *Review of Financial Studies* 23, 487-517.

Goergen, Marc, and Luc Renneboog, 2004, Shareholder wealth effects of European domestic and cross-border takeover bids, *European Financial Management* 10, 9-45.

Golbe, Devra L, and Lawrence J White, 1993, Catch a wave: The time series behavior of mergers, *The review of Economics and Statistics* 493-499.

Gompers, P., J. Ishii, and A. Metrick, 2003, Corporate governance and equity prices, *The Quarterly Journal of Economics* 118, 107.

Gompers, Paul A, Joy Ishii, and Andrew Metrick, 2010, Extreme governance: An analysis of dual-class firms in the United States, *Review of Financial Studies* 23, 1051-1088.

Gugler, Klaus, Dennis Mueller, and Burcin Yurtoglu, 2006, The determinants of merger waves *Working Paper*.

Harford, J., 2005, What drives merger waves?, *Journal of Financial Economics* 77, 529-560.

Harford, Jarrad, 1999, Corporate cash reserves and acquisitions, *The Journal of Finance* 54, 1969-1997.

Harford, Jarrad, Mark Humphery-Jenner, and Ronan Powell, 2012, The sources of value destruction in acquisitions by entrenched managers, *Journal of Financial Economics* 106, 247-261.

Harris, Ellie G, 1990, Antitakeover measures, golden parachutes, and target firm shareholder welfare, *The Rand Journal of Economics* 614-625.

Harris, Robert S., John F. Stewart, David K. Guilkey, and Willard T. Carleton, 1982, Characteristics of acquired firms: fixed and random coefficients probit analyses, *Southern Economic Journal* 49, 164-184.

Hasbrouck, Joel, 1985, The characteristics of takeover targets and other measures, *Journal of Banking & Finance* 9, 351-362.

Heckman, James J, 1979, Sample selection bias as a specification error, *Econometrica: Journal of the econometric society* 153-161.

Holmstrom, B, and SN Kaplan, 2001, Corporate governance and merger activity in the United States: making sense of the 1980s and 1990s, *Journal of Economic Perspectives* 15, 121-144.

Holmstrom, Bengt, and Steven N Kaplan, 2003, The state of US corporate governance: what's right and what's wrong?, *Journal of Applied Corporate Finance* 15, 8-20.

Hughes, A, 1989, The impact of merger: a survey of empirical evidence for the UK, *Mergers and Merger Policy, Oxford* 30–98.

Humphery-Jenner, Mark L., and Ronan G. Powell, 2011, Firm size, takeover profitability, and the effectiveness of the market for corporate control: Does the absence of anti-takeover provisions make a difference?, *Journal of Corporate Finance* 17, 418-437.

Humphery, Mark L, and Ronan G Powell, 2008, Anti-takeover provisions and takeover returns, *Working Paper*.

Jensen, M, 1993, Modern industrial revolution, exit, and the failure of internal control systems, *Journal of Finance* 831-880.

Jensen, M., 2005, Agency costs of overvalued equity, *Financial Management* 34, 5-19.

Jensen, M. C., and R. S. Ruback, 1983, The market for corporate control: The scientific evidence, *Journal of Financial Economics* 11, 5-50.

Jensen, M.C., 1986, Agency costs of free cash flow, corporate finance, and takeovers, *The American Economic Review* 76, 323-329.

Jensen, M.C., and W.H. Meckling, 1976, Theory of the firm: Managerial behavior, agency costs and ownership structure, *Journal of Financial Economics* 3, 305-360.

Jensen, Michael C, 1988, Takeovers: Their causes and consequences, *The Journal of Economic Perspectives* 2, 21-48.

Jovanovic, B, and PL Rousseau, 2002, The Q-theory of mergers, *American Economic Review* 92, 198-204.

Kadyrzhanova, Dalida, and Matthew Rhodes-Kropf, 2011, Concentrating on governance, *The Journal of Finance* 66, 1649-1685.

Kini, O, W Kracaw, and S Mian, 1995, Corporate takeovers, firm performance, and board composition, *Journal of Corporate Finance* 1, 383-412.

Knoeber, Charles R, 1986, Golden parchutes, shark repellents, and hostile tender offers, *The American Economic Review* 76, 155-167.

Koppes, Richard H, Lyle G Ganske, and Charles T Haag, 1999, Corporate governance out of focus: The debate over classified boards, *The Business Lawyer* 1023-1055.

Lamoreaux, Naomi R, 1988. *The great merger movement in American business, 1895-1904* (Cambridge University Press).

Langetieg, TC, 1978, An application of a three-factor performance index to measure stockholder gains from merger, *Journal of Financial Economics* 6, 365-383.

Lefanowicz, Craig E, John R Robinson, and Reed Smith, 2000, Golden parachutes and managerial incentives in corporate acquisitions: Evidence from the 1980s and 1990s, *Journal of Corporate Finance* 6, 215-239.

Lehn, Kenneth M, and Mengxin Zhao, 2006, CEO turnover after acquisitions: Are bad bidders fired?, *The Journal of Finance* 61, 1759-1811.

Lewellen, Wilbur G., 1971, A pure financial rationale for the conglomerate merger, *The Journal of Finance* 26, 521-537.

Loughran, Tim, and Jay Ritter, 2004, Why has IPO underpricing changed over time?, *Financial management* 5-37.

Machlin, Judith C, Hyuk Choe, and James A Miles, 1993, The effects of golden parachutes on takeover activity, *Journal of Law and Economics* 36, 861-876.

MacKinlay, A Craig, 1997, Event studies in economics and finance, *Journal of economic literature* 35, 13-39.

Manne, H.G., 1965, Mergers and the market for corporate control, *The Journal of Political Economy* 73, 110-120.

Martin, KJ, and JJ McConnell, 1991, Corporate performance, corporate takeovers, and management turnover, *Journal of Finance* 46, 671-687.

Martynova, Marina, and Luc Renneboog, 2008, A century of corporate takeovers: What have we learned and where do we stand?, *Journal of Banking & Finance* 32, 2148-2177.

Martynova, Marina Vladimirovna, and Luc Renneboog, 2005. *Takeover waves: triggers, performance and motives* (Tilburg University).

Masulis, R.W., C. Wang, and F. Xie, 2007, Corporate governance and acquirer returns, *The Journal of Finance* 62, 1851-1889.

Mitchell, M.L., and K. Lehn, 1990, Do bad bidders become good targets?, *Journal of Political Economy* 372-398.

Mitchell, M.L., and J.H. Mulherin, 1996, The impact of industry shocks on takeover and restructuring activity, *Journal of Financial Economics* 41, 193-229.

Moeller, S.B., F.P. Schlingemann, and R.M. Stulz, 2004, Firm size and the gains from acquisitions, *Journal of Financial Economics* 73, 201-228.

Moeller, S.B., F.P. Schlingemann, and R.M. Stulz, 2005, Wealth destruction on a massive scale? A study of acquiring firm returns in the recent merger wave, *The Journal of Finance* 60, 757-782.

Morck, Randall, Andrei Shleifer, and Robert W Vishny, 1988, Characteristics of targets of hostile and friendly takeovers, in *Corporate takeovers: Causes and consequences* (University of Chicago Press).

Myers, Stewart C., and Nicholas S. Majluf, 1984, Corporate financing and investment decisions when firms have information that investors do not have, *Journal of Financial Economics* 13, 187-221.

Netter, Jeffry, Annette Poulsen, and Mike Stegemoller, 2009, The rise of corporate governance in corporate control research, *Journal of Corporate Finance* 15, 1-9.

Owen, S, 2006, The history and mystery of merger waves: A UK and US perspective, *Working Paper*.

Palepu, Krishna G., 1986, Predicting takeover targets, *Journal of Accounting & Economics* 8, 3-35.

Pinkowitz, Lee, 2000, The market for corporate control and corporate cash holdings, *Available at SSRN 215191*.

Powell, Ronan G., 2001, Takeover prediction and portfolio performance: A note, *Journal of Business Finance & Accounting* 28, 993-1011.

Rhodes-Kropf, M., D.T. Robinson, and S. Viswanathan, 2005, Valuation waves and merger activity: The empirical evidence, *Journal of Financial Economics* 77, 561-603.

Rhodes-Kropf, Matthew, and S. Viswanathan, 2004, Market valuation and merger waves, *The Journal of Finance* 59, 2685-2718.

Rozeff, MS, 1982, Growth, beta and agency costs as determinants of dividend payout ratios, *Journal of Financial Research* 5, 249-259.

Safieddine, Assem, and Sheridan Titman, 1999, Leverage and corporate performance: Evidence from unsuccessful takeovers, *The Journal of Finance* 54, 547-580.

Sauvagnat, Julien, 2013, Takeover discipline and asset tangibility, Working Paper.

Savor, Pavel G, and Qi Lu, 2009, Do stock mergers create value for acquirers?, *The Journal of Finance* 64, 1061-1097.

Schiantarelli, F, 1996, Financial constraints and investment: methodological issues and international evidence, *Oxford Review of Economic Policy* 12, 70.

Shleifer, Andrei, and Lawrence H Summers, 1988, Breach of trust in hostile takeovers, in *Corporate takeovers: Causes and consequences* (University of Chicago Press).

Shleifer, Andrei, and Robert W Vishny, 1991, Takeovers in the'60s and the'80s: Evidence and implications, *Strategic management journal* 12, 51-59.

Shleifer, Andrei, and Robert W. Vishny, 2003, Stock market driven acquisitions, *Journal of Financial Economics* 70, 295.

Singh, Harbir, and Farid Harianto, 1989, Management-board relationships, takeover risk, and the adoption of golden parachutes, *Academy of Management Journal* 32, 7-24.

Smiley, R, 1976, Tender offers, transactions costs and the theory of the firm, *The Review of Economics and Statistics* 22-32.

Sokolyk, Tatyana, 2011, The effects of antitakeover provisions on acquisition targets, *Journal of Corporate Finance* 17, 612-627.

Stein, Jeremy C, 1988, Takeover threats and managerial myopia, *The Journal of Political Economy* 61-80.

Stigler, George J, 1950, Monopoly and oligopoly by merger, *The American Economic Review* 40, 23-34.

Stiglitz, JE, and A Weiss, 1981, Credit rationing in markets with imperfect information, *The American Economic Review* 71, 393-410.

Subramaniam, Chandra, and Lane A Daley, 2000, Free cash flow, golden parachutes, and the discipline of takeover activity, *Journal of Business Finance & Accounting* 27, 1-36.

Subramanian, Guhan, 2005, Takeover Defenses and Bargaining Power, *Journal of Applied Corporate Finance* 17, 85-96.

Thompson, Rex, 1985, Conditioning the return-generating process on firm-specific events: A discussion of event study methods, *Journal of Financial and Quantitative Analysis* 20, 151-168.

Travlos, Nickolaos G, 1987, Corporate takeover bids, methods of payment, and bidding firms' stock returns, *The Journal of Finance* 42, 943-963.

Wade, James, Charles A O'Reilly III, and Ike Chandratat, 1990, Golden parachutes: CEOs and the exercise of social influence, *Administrative Science Quarterly* 587-603.

Walter, Richard M., 1994, The usefulness of current cost information for identifying takeover targets and earning above-average stock returns, *Journal of Accounting, Auditing & Finance* 9, 349-377.

White, Halbert, 1980, A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity, *Econometrica: Journal of the Econometric Society* 817-838.

Wilcox, John C, 2002, Two cheers for staggered boards, *Corporate Governance Advisor* 10, 1-5.

Yan, J, 2006, Merger waves: Theory and evidence, *Working Paper*.

8 Appendix

Table 21 Takeover Likelihood: Robustness Test

The following table is based on the probit model specified in *section 4.3.1*. The dependent variable is set to one if the firm is targeted (regardless of the bid outcome), and zero otherwise. On-wave and off wave classification is based on the Harford (2005) methodology. *GIM* is the Gompers et al. (2003) corporate governance index that consists of 24 provisions tracked by RiskMetrics. *E*, the alternative measure, is the Bebchuk et al. (2009) governance index consisting of six provisions that are regarded as the most important. The *Dual class* and *Delaware Incorporation* variables are binary. *Firm size* is calculated as the natural log of total assets, *Tobin's Q* is determined by dividing the market value of assets over the book value of assets, *Leverage* is the ratio of interest bearing debt to total assets, *Free Cash Flow* is defined as the sum of net income before extraordinary items and depreciation minus capital expenditure divided by total assets, *Tangible Firm Dummy* is a binary variable that equals one if the percentage of tangible assets exceed the median ratio of the other firms trading in its industry, and zero otherwise. Year and industry fixed effects are included in all regressions. Standard errors are reported in parenthesis. *, **, and *** denote significance at the 10, 5, and 1 percent level of significance, respectively. All regressions include 2-digit SIC code dummies.

	Off-wave		On-wave	
	(1)	(2)	(3)	(4)
GIM	0.0195*		-0.0170	
	(0.0107)		(0.0121)	
E		0.1472***		-0.0600**
		(0.0231)		(0.0240)
Dual Class	-0.1357	-0.0624	-0.4377***	-0.4591***
	(0.1104)	(0.1104)	(0.1107)	(0.1121)
Delaware Incorporation	0.1271**	0.1023*	0.1698***	0.1927***
	(0.0588)	(0.0593)	(0.0601)	(0.0600)
Firm Size	-0.0529***	-0.0537***	-0.2477***	-0.2516***
	(0.0202)	(0.0207)	(0.0243)	(0.0238)
Tobin's Q	-0.4275**	-0.4188***	-0.1324	-0.1460
	(0.1672)	(0.1622)	(0.1185)	(0.1199)
Leverage	0.5032*	0.4340	1.5763***	1.6042***
	(0.2941)	(0.3037)	(0.2933)	(0.2938)
Free Cash Flow	0.3236	0.2973	-0.0717	-0.0843
	(0.2415)	(0.2447)	(0.2419)	(0.2413)
Tangible Firm Dummy	-0.3215***	-0.3324***	0.0390	0.0434
	(0.0963)	(0.0984)	(0.0996)	(0.0995)
Tangible Firm x Leverage	0.3975	0.3693	1.1116***	1.0979***
	(0.4053)	(0.4179)	(0.3920)	(0.3920)
Constant	-0.4547	-0.4995	0.5355**	0.5394**
	(0.4167)	(0.3996)	(0.2577)	(0.2416)
Observations	6638	6638	4462	4462
Pseudo R-Squared	0.0796	0.0939	0.1263	0.1278