

Poison Pills on the Decline:

The Performance & Wealth Effects of Poison Pill Removals

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## Abstract

The purpose of this paper is to examine the effect of poison pill removals on (1) shareholder wealth and (2) operating performance using cases of U.S. firms that removed poison pills between January 2003 and December 2005. We find that poison pill removals do not show a statistically significant effect on shareholder wealth or operating performance. We also investigate the impact of pill removals for firms with and without staggered board provisions. We find that firms who remove their poison pill and were never protected by a staggered board have greater volatility in their ROA and share price than firms who continue to maintain a staggered board. However, we once again find insufficient evidence to reject the null hypothesis and find that firms without either takeover defense do not show a statistically significant improvement in performance. Hence, results are inconsistent with the management entrenchment hypothesis, and instead, indicate that poison pills are not inherently harmful to shareholders or firms.

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## INTRODUCTION

During the 1980's, Wall Street was a place gripped by takeover mania. Corporate raiders ran rampant, markets soared, and thanks to the introduction of junk-bonds, unfriendly takeovers became commonplace. Yet amidst this era of frenzied-takeovers and hostile acquisitions came what many Wall Street insiders consider to be the most important event of the decade -the introduction of the shareholder rights plan, more commonly referred to as a poison pill.

Forever revolutionizing corporate governance and hostile takeovers, the poison pill ushered in a new era for firms throughout the world, single-handedly changing the nature of M&A and corporate defense tactics. In fact, nearly 30 years after its original introduction, the pill continues to be one of the most influential innovations in corporate governance -maintaining a critical place in the history of financial markets and corporate governance.

Of course, given the controversial nature and initial popularity of poison pills, it comes as no surprise that pills have been the focus of an extensive array of research and analysis. Study upon study has dissected the effects of poison pills, with each new study adding a layer of complexity to the ongoing debate. Yet despite this vast network of research, there continues to be no clear consensus regarding the ways poison pills affect (1) shareholder wealth and (2) firm performance. Moreover, while the number of studies examining poison pills is overwhelmingly large, most of these studies have focused on analyzing the impact of poison pill adoptions, while far fewer studies have been dedicated to analyzing the effects of poison pill removals. Do poison pill removals improve stock and/or financial performance? What factors contribute to a company's decision to remove poison pills? And, is the recent trend toward removing poison pills

justified?

Thus, it will be these very questions that our study will seek to answer. Using a sample of 72 firms who have removed their poison pills during 2003-2005, we will show that poison pills

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may not be nearly as detrimental to firms as previously believed. Our empirical results show that after pill removal, there is no statistically significant improvement in (1) operating performance, using Return on Assets (“ROA”) as our proxy measure, or (2) stock performance (during both a 20-day and 162-day period). Moreover, we find that the presence of other anti-takeover devices (specifically, staggered board elections) has only a minimal effect on performance after removal, which also shows no statistical significance. We present a variety of potential reasons for such results, but do not attempt to make any arguments for causality. Instead, we view our results consistent with the idea that the presence of a poison pill is not inherently harmful to firm performance or shareholder interests. Therefore, contrary to conventional wisdom, we find that poison pills do not destroy wealth or diminish operating performance.

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## POISON PILLS AS A HOSTILE TAKEOVER DEFENSE TACTIC

First invented by Martin Lipton in 1982, poison pills have long been one of the most

effective and prominent tools in fending off hostile bidders. Developed during the height of junk-bonds and corporate raiders, poison pills were designed to thwart hostile takeovers, thereby preventing would-be acquirers from gaining control of a target on unfriendly terms. Today, they continue to be one of the most effective takeover defenses.

### The Poison Pill Design

In a broad sense, the term poison pill can refer to any takeover defense that makes a firm less desirable to would-be acquirers. While this can involve firms selling off assets (“the crown jewels defense”) or high-ranking management threatening to leave (“the people pill”), the most common type of poison pill is the shareholder rights plan, which will be the focus of our research.

This variant on the pill is quite typical in firms, and it is generally presented as a provision in a corporation’s bylaws that permits current shareholders to purchase more stock at large

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discounts in the event of an unsolicited takeover. Once the provision is enacted, it often remains dormant and untested. However, as soon as an unsolicited bidder begins to accumulate large amounts of shares in a target firm (typically 10 to 30 percent), the pill is “triggered”, thus enabling current shareholders (excluding the hostile bidder) to increase their ownership stake at a large discount. Theoretically, once the redemption provision is activated, shareholders will exercise their rights. Thus, the domino effect of these events should result in a significant ownership dilution for the bidder, making it prohibitively expensive to acquire the firm.

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Of course, this is but a simple overview of poison pills, as they tend to come in a variety of shapes and forms. In fact, over the years, poison pills have continued to evolve in light of both legal and economic challenges. For example, in their first incarnation, poison pills were originally presented as preferred stock plans. These plans called for a distribution of nonvoting, convertible preferred securities following a triggering event.

Yet due to certain legal restrictions, Lipton eventually redesigned the pill, this time making use of what came to be known as “flip-over provisions”. These “second generation” poison pills, as they are sometimes called, allowed target shareholders to purchase shares of the acquiring firm at a discount. Thus, if a target was acquired, its preferred stock would become convertible into

common stock of the acquirer at well-below market prices. Nonetheless, despite the apparent potency of these new and improved flip-over pills, they too proved to be vulnerable in James Goldsmith's hostile takeover of Crown Zellerbach Corporation in 1986.

As a result, Martin Lipton set about perfecting the poison pill one final time, ultimately coming up with the form of the pill we see today. Better known as the flip-in poison pill, these perfected pills enable rights' holders to purchase additional shares of the target firm at a bargain price when a hostile bidder acquires a threshold ownership stake (or, in some instances, when the announcement of a tender offer is made). Resembling a standard warrant, this new version of the

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pill was designed to cause dilution in the target shares held by an acquirer, thus making a hostile takeover less profitable. takeover less profitable.

Nevertheless, despite this seemingly new and improved version of the pill, controversy continued to surround poison pills and their use in corporate America. Their perceived discriminatory features as well as their apparent attempt at entrenching management raised many concerns, and over the years, the pill found itself continually challenged in courts. Although a variety of rulings helped uphold the pill's validity as a takeover defense, it was four key rulings in Delaware Supreme Court that truly cemented the pill's legality. These key rulings and their impact on corporate takeovers are discussed in the table below.

#### Case Decision

Smith v. Van

Gorkom<sup>1</sup>

Some scholars argued that hostile takeovers were an efficient market's way of properly assigning ownership and as such, takeover defenses would inevitably thwart shareholder gains. The court disagreed with that position in this case. It ruled that directors could better value their company's true worth than the stock market. As such, it held that a poison pill could be an effective device in empowering directors to make takeover decisions based on their view of the company's true value.

Unocal Corp. v.

Mesa Petroleum Co.<sup>2</sup>

In this instance, the court found that a firm's board of directors should be able to adopt and make use of takeover defenses. However, the board would be held

accountable to meet standards that were higher than the typical business judgment rule when advising shareholders and determining how to react in takeover situations. This new standard is today referred to as the Unocal standard  
Revlon, Inc v.

MacAndrews &

Forbes Holdings<sup>3</sup>

In this case, the court held that favoritism for a white knight to the total exclusion of a hostile bidder might be justifiable when the latter's offer adversely affects shareholder interests. However, when bidders make similar offers or the dissolution of the company becomes inevitable, the directors should not play favorites. In the second instance, the market should be allowed to operate efficiently and thus allow shareholders to earn the best price possible.

Moran v. Household

International, Inc.<sup>4</sup>

Perhaps the defining case regarding poison pills, the court found that boards may adopt poison pills as a defense to takeover bids. The court felt that the board should be allowed to thwart hostile takeovers and that if shareholders disagreed with this position, they could replace the board when incumbent directors came up for reelection. However, the board was again held to higher standards of the business judgment rule in such situations.

<sup>1</sup> Smith v. Van Gorkom. Del. Supr., 488 A.2d 858 (1985).

<sup>2</sup> Unocal v. Mesa Petroleum, 493 A.2d 946 (Del. 1985).

<sup>3</sup> Revlon, Inc. v. MacAndrews and Forbes Holdings, Inc., 506 A.2d 173, 182 (Del. 1986).

Moran v. Household International, Inc., 500 A.2d 1346 (Del. 1985)

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Largely a result of these rulings, poison pills continue to be one of the most potent defenses in hostile takeover situations. Walsh and Seward (1990) help explain this potency in their classification of anti-takeover measures. As they explain, poison pills have two key features that make them more powerful than any other defense. First, a shareholder vote is not required in order to adopt a poison pill. In fact, once installed, the pill can be removed only by the vote of a majority of a board's directors, making the board's power with respect to poison pills virtually unchallenged. Secondly, poison pills are considered operating measures in that they result in a change in the firm's financial structure. Such measures are regarded as more potent than nondefenses in hostile takeover situations. Walsh and Seward (1990) help explain this potency in their classification of anti-takeover measures. As they explain, poison pills have two key features that make them more powerful than any other defense. First, a shareholder vote is not required in order to adopt a poison pill. In fact, once installed, the pill can be removed only by the vote of a majority of a board's directors, making the board's power with respect to poison pills virtually unchallenged. Secondly, poison pills are considered operating measures in that they result in a change in the firm's financial structure. Such measures are regarded as more potent than nonoperating measures, which do not involve a change in the firm's financial operations. As such, poison pills are commonly seen as both the most powerful and controversial anti-takeover measures available.

SHAREHOLDER INTEREST HYPOTHESIS VS.

MANAGEMENT ENTRENCHMENT HYPOTHESIS

Although the debate on poison pills branches into many disciplines of corporate governance, managerial selection, and financial policy, much of the debate surrounding pill effects truly boils down to two diametrically opposed hypotheses. These hypotheses, (1) shareholder interest hypothesis and (2) management entrenchment hypothesis, truly form the core

analysis of takeover defense research. Applicable to both poison pills and takeover defenses in general, these hypotheses are central components of our study, and as such, a more thorough understanding of both is essential.

#### Management Entrenchment Hypothesis

Throughout the years, the management entrenchment hypothesis has long been a major justification for shareholders seeking the removal of defense tactics. Supported by studies from Malatesta and Walking (1988), Ryngaert (1988), and Datta and Iskander-Datta (1996), the

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hypothesis posits that takeover defenses are adopted by managers to “protect their own self-  
interest and position.” (Carey, 1969). By deliberately raising the costs of a takeover while also

reducing the profitability of a corporate control change, a bidder is far less likely to launch a bid

for a target. As such, poorly performing managers are less likely to be replaced while

underperforming companies are less likely to be taken over and restructured into stronger

performing firms. In the case of a poison pill, it has often been argued that these effects are even

stronger, given that a poison pill is virtually untouchable by shareholders.

At its core, management entrenchment hypothesis suggests that the conflicts between

management and shareholders are quite large. Managers are most interested in keeping their job

and will do so even to the detriment of shareholders. Therefore, this “agency problem” results in

managers adopting poison pills not to benefit their firms, but to instead shield themselves from

takeovers and potential job losses. Thus, managers may seek to perpetuate their own self-interest

at the expense of shareholders by instituting and maintaining takeover defenses that circumvent

the market for corporate control (Gaughan, 2005).

As such, it has been suggested that takeover defenses reduce shareholder wealth and firm performance due to managerial entrenchment. It is the contention of those who adhere to this hypothesis that poison pills (1) allow poor managers to retain control and (2) diminish the probability of takeovers. Together, these two effects not only harm firm performance, but also limit the potential gains from a beneficial takeover, making poison pills an enemy of shareholders.

#### Shareholder Interest Hypothesis

Although the management entrenchment hypothesis can be quite compelling, individuals who adhere to the shareholder interest hypothesis refute many of its assumptions. The shareholder interest hypothesis assumes that the takeover market is but one of many mechanisms

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that monitors managers and ensures that agency costs are kept to a minimum. As such, the arguments that claim that managers insulate themselves through takeover defenses may be incorrect.

sts are kept to a minimum. As such, the arguments that claim that managers insulate themselves through takeover defenses may be incorrect.

More importantly, takeover defenses can actually benefit a firm. First, takeover defenses provide bargaining power to managers, who can seek higher premiums by delaying acquisitions and encouraging auctions among bidders. At the same time, the adoption of defensive tactics encourages management to take long-term perspectives when it comes to making corporate decisions. Takeover defenses, according to these theorists, provide greater stability, increased capital investments, and continuity in management, which should all benefit shareholders.

In fact, when Lipton invented the pill, he stressed the fact that the pill is a device that allows a company to “just say no” to takeovers, not a device that allows them to “just say never.” In other words, the pill was never intended to prevent any and all takeovers. On the contrary, the pill’s original purposes were to instead allow a board of directors to properly consider all offers and seek the best share price for their stockholders. By creating uncertainty regarding the takeover possibility, the pill was intended to provide a board with the leverage it required to either negotiate the best deal possible or maintain its current owners (Lipton, 1991).

#### POISON PILLS IN CONJUNCTION WITH OTHER TAKEOVER DEFENSES

Because poison pills do not require shareholder approval, they are often considered the

most potent anti-takeover defense available to firms. Yet despite this characterization, a large number of firms choose to adopt poison pills in conjunction with other takeover mechanisms, including golden parachutes, supermajority provisions, and most significantly, a classified board. While all of these defenses can appear together, it is the combination of a classified board and poison pill that is both the most common and the most potent.

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A classified board, also known as a staggered board, is a provision that calls for a firm's board of directors to be split into multiple classes, with each class coming up for election in different years. Most classified boards divide into three separate classes, with each class serving a multiyear term equal to the number of classes. As such, classified boards effectively prevent any acquirer from gaining majority control of a board in any one year. If, for instance, a firm divides its board into three classes, then it will take at least two years for any hostile acquirer to win a majority control of the board. Thus, a hostile bidder would have to win multiple elections in order to gain control of the board of directors – making the takeover more difficult and time consuming (Mahoney and Mahoney, 1993).

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Hence, like a poison pill, a classified board similarly makes it more difficult and costly for a hostile acquirer to take over a firm. Yet despite this, the classified board is not considered nearly as potent by itself as it is when used in conjunction with a poison pill. With the two takeover defenses used in tandem, it becomes increasingly difficult for a hostile bidder to acquire a target firm. Perhaps the best way to understand the power of these two defenses is through an example.

Let us say that Company A is looking to acquire Company B in a hostile takeover. If Company B has a poison pill in place, it makes the takeover difficult (though not impossible) for Company A. To overcome a poison pill, Company A must wait until board elections occur and hope that it can gain a majority control of the board. Yet in this instance, because Company B has no classified board provision, Company A can gain a majority control in one election. If Company A is in fact successful in gaining majority control, it can then proceed to redeem Company B's poison pill, thus clearing the way for a successful takeover.

However, if Company B has both a poison pill and staggered board provisions, it will become much more difficult for Company A to accomplish its hostile takeover of Company B. In this scenario, Company A will now have to go through two or more (depending on the number of

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board classes) elections in order to gain control of the board and redeem the pill.<sup>5</sup> This can take years, and for most corporate raiders, the costs and hassle of such a battle are simply not worth the final outcome.

Most recently, the interaction between poison pills and classified boards were put on a

national stage in 2008 following Microsoft's hostile bid for Yahoo! and Oracle's bid for BEA

Systems. Both Yahoo! and BEA Systems shunned the respective offers, citing bids that

undervalued each company. Yet it is at this point that the stories of our two companies begin to

diverge.

BEA, protected by both a poison pill and classified board, was able to negotiate an

increase in the premium it received from Oracle, thereby turning a once hostile offer into a

negotiated takeover. In this instance, Oracle likely realized that a hostile takeover attempt would

be quite difficult given BEA's dual anti-takeover measures. As such, Oracle recognized that in

order to successfully acquire BEA, it would be forced to raise its offer. As a result, the BEA

board was able to squeeze out a higher share price for its stockholders in the takeover because it

utilized both a poison pill and classified board.

Yahoo!, on the other hand, has had quite a different experience. Although Yahoo! is

protected by a poison pill, it is not protected by a classified board. As such, Microsoft, unlike

Oracle, has refused to raise its bid.<sup>6</sup> Given that Yahoo! has only a poison pill, Microsoft likely

foresees a less difficult path to its takeover, and as such, feels it can gain control of the board and

redeem the pill during Yahoo!'s next proxy vote. In fact, as of April 2008, Microsoft has

maintained its bid price and refused to increase its offer premium.

<sup>5</sup> Bebchuck, Coates IV, & Subramanian, 2002.

<sup>6</sup> As of May 5, 2008, Microsoft withdrew its bid for Yahoo!, much to the chagrin of some of Yahoo!'s largest shareholders. There

is some speculation that "walking away" is a purely a strategic tactic and that Microsoft may in fact still attempt to takeover

Yahoo!.

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## A TREND TOWARD REMOVING POISON PILLREND TOWARD REMOVING POISON PILLS

One of the main reasons poison pills have been so popular is their established connection to a corporation's charter. Once a poison pill makes its way into a company's charter, it can be quite difficult (even following shareholder resolutions) to have these provisions removed. Only the board of directors can choose to "redeem" the pill, making it virtually untouchable by shareholders and other stakeholders. Thus, it is not surprising that over the years, poison pills became a mainstay in corporate charters, constantly being adopted and rarely being removed.

Yet in recent years, this trend has slowly begun to reverse itself. Poison pills are increasingly being removed from corporate charters, and fewer and fewer firms are choosing to adopt them in the first place. For instance, in 2004, only 18% of firms had poison pills in place, a substantial decline from the nearly 60% of firms that had pills in place only one year ago. And, while large-cap companies were the first to begin these removals, companies of all sizes have begun to follow in-kind, dismantling their poison pills at a rapid pace. These trends are clearly evident in the charts below.

In fact, at the end of 2007, nearly 221 companies had removed their poison pills, while the few remaining companies with pills in place tended to be smaller in size. Additionally, new pill

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adoptions have also begun to fall, with only 42 first time pill adoptions occurring in 2007. As is evident in the chart to the above, the number of poison pill removals and terminations has increased substantially over the last few years.

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evident in the chart to the above, the number of poison pill removals and terminations has increased substantially over the last few years.<sup>7</sup>

### The Reasons Behind Poison Pills' Increasing Unpopularity

This trend has certainly attracted a fair share of research, most of which has focused on understanding why firms are increasingly removing poison pills from their artillery of takeover defenses. Bizjak and Marquette (1998) were one of the first to conduct such research, showing that increased shareholder activism has been a major reason for the increased dismantling of poison pills. Their research shows that the Sarbanes-Oxley era has given rise to a growing number of activist shareholders, and many of these activists have been successful in negotiating a pill removal or forcing a proxy statement vote on a firm's shareholder rights plan. Del Guercio and Hawkins (1999) and Gillan and Starks (2000) corroborate this finding, also concluding that increased shareholder activism (particularly amongst hedge funds) has led to proxy fights and negotiations that have resulted in the removal of a substantial share of poison pills.

At the same time, the recent credit crunch and market turmoil has significantly diminished the number of initial public offerings entering the market. Since most companies adopt a poison pill upon their IPO, this lack of recent IPO's has helped contribute to a smaller number of poison pills making their way into corporate charters. Hence, it is the argument of some that today's deteriorating market environment has led to a decrease in the number of total pill adoptions.

Finally, it has been suggested that in light of corporate scandals like WorldCom and Enron, more and more companies have sought to revamp their corporate image by removing poison pills. Many boards believe that removing a poison pill will earn them goodwill with shareholders and

7 Data courtesy of True Course Data's SharkRepellent.net

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create the image of “clean” corporate governance. This too has led to a pronounced decrease in poison pill adoptions and renewal rates. poison pill adoptions and renewal rates.

Regardless of the reasons, it is clear that poison pill renewals have declined steadily over the years, indicating a pronounced increase in the number of poison pill removals. Renewal rates were as low as 35% in 2005 and fell to 31% in 2006.<sup>8</sup> Thus, given the poison pills’ recent unpopularity, continued research dedicated to understanding the effects of poison pill adoptions may be increasingly inconsequential. Instead, a new focus may be needed on understanding what effects poison pill removals have on wealth creation. Thus, the purpose of our research will be to uncover these effects and the insights into poison pills they provide us with.

#### PRIOR RESEARCH

The controversial nature of poison pills as well as anti-takeover devices in general has created a diverse array of research that is at times, contradictory, inconsistent, and controversial. Results over time have continued to change, and a clear consensus regarding many features of poison pills has yet to be reached. In any case, the research on understanding the wealth effects of both takeover defenses and poison pills is nothing if not voluminous.

#### Takeover Defense Research

Most research in the area of poison pills began with the broader goal of understanding takeover defenses in general. Jarrell and Poulsen (1983) were one of the first to study the returns around anti-takeover amendments. Their groundbreaking research found a negative effect on

shareholder wealth following the adoption of poison pills. Hence, it was their contention that poison pills “obstruct the market for corporate control” and ultimately harm shareholders.

Bhagat and Jefferies (1991) confirmed these results, even after controlling for the fact that some shareholders may anticipate the anti-takeover devices before they are announced. Gompers,

8 TrueCourse Data as of 1/1/2007.

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Ishii, and Metrick (2001) undertook similar research, examining a variety of takeover defenses (including poison pills). They too found that a firm's stock returns were negatively correlated to the number of takeover defenses the firm possessed, further supporting the management entrenchment hypothesis.

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Years later, Bebchuk, Coates IV, and Subramanian (2002) also found evidence consistent with management entrenchment hypothesis. Based on their empirical study of over 100 firms, they argued that anti-takeover defenses (1) protect management from takeovers, (2) lower the probability of a takeover, and ultimately, (3) reduce shareholder wealth. In addition, their study went on to argue that boards who allow their firms to adopt both a staggered board provision and poison pill do not meet the Unocal test set in Delaware courts. As such, the combination of a poison pill and staggered board, in their opinion, destroys wealth and makes beneficial takeovers much less likely.

Yet not all research on anti-takeover devices supports the management entrenchment hypothesis. On the contrary, there is quite a bit of research suggesting that the shareholder interest hypothesis may in fact be a more accurate view of takeover defenses. For instance, DeAngelo and Rice (1980) conducted some of the earliest research suggesting that anti-takeover devices may not be as harmful as originally thought. Looking at firms from 1974-1979, they found that anti-takeover tactics had a negative, yet insignificant effect on share prices. Berkovitch, Bradley, and Khanna (1989) and Baysinger and Butler (1985) corroborated these results in additional studies. And, adding further support to this argument was Bizjak and Marquette (1999), who concluded

from their research that anti-takeover devices help “bond managers to their firm and reduce myopic investment decisions.”

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## Poison Pill Research

In addition to research dedicated to a broad range of takeover defenses, a large portion of analysis has also been dedicated to solely uncovering the effects of poison pills on shareholder wealth and operating performance. Most academics agree that one of the first studies to thoroughly examine poison pills came from Gregg Jarrell and Michael Ryngaert, who in 1986, conducted an event study of 245 poison pills. Although their research relied heavily on a variety of questionable assumptions, they nonetheless found a significant negative abnormal return associated with the adoption of pills. As such, it was their contention that poison pills did, in fact, destroy shareholder wealth.

Later research by Malatesta and Walking (1988) echoed this sentiment, as did work by Ryngaert (1988); John, Lang, and Shih (1992); and Mahoney, Sundaramurthy and Mahoney (1996). Based on their empirical results, it was the theoretical contention of these scholars that poison pills entrenched management, lowered the probability of beneficial takeovers, and destroyed wealth.

Moreover, proponents of the management entrenchment hypothesis have also pointed to trends amongst activist investors in order to further support their arguments. Some research (for example, Agrawal and Mandelker in 1992 and Jones, Lee, and Tompkins in 1997) has argued that institutional investors and hedge funds are the most informed investors, and as such, they will vote in a manner that maximizes shareholder wealth (DeAngelo and Rice 1983). Thus, the recent trend of institutional investors seeking poison pill redemptions may be an indication that poison pills are indeed harmful to shareholder wealth. If institutional investors are (1) the most informed and (2) they are actively attempting to rescind poison pills, then the argument can be made that poison

pills must be harmful to shareholder wealth.

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Yet despite the large amount of evidence supporting the management entrenchment hypothesis, a variety of divergent research has emerged that challenges the conventional wisdom regarding the harmful effects of poison pills. Lipton and Rosenblum (1991) and Wohlstetter (1993) were early dissenters, arguing that takeover defenses allow managers to manage their firms free from the pressures of a hostile takeover. It was their belief that firms without some sort of takeover protection are managed less efficiently due to the metaphorical “for sale sign” hanging over their heads. In fact, based on these results, it has often been argued that the pill, rather than entrenching managers, instead ensures that managers will focus on long-term success and stability. Later research by Downen, Johnson, and Jensen (1994) came to a similar conclusion, arguing that poison pills adoptions were “rational responses by management” in order to lower transactions costs and improve long-term focus. Heron and Lie (2000) argued similarly, suggesting that the presence of a poison pill does not automatically reduce takeover probabilities or premiums.

hypothesis, a variety of divergent research has emerged that challenges the conventional wisdom regarding the harmful effects of poison pills. Lipton and Rosenblum (1991) and Wohlstetter (1993) were early dissenters, arguing that takeover defenses allow managers to manage their firms free from the pressures of a hostile takeover. It was their belief that firms without some sort of takeover protection are managed less efficiently due to the metaphorical “for sale sign” hanging over their heads. In fact, based on these results, it has often been argued that the pill, rather than entrenching managers, instead ensures that managers will focus on long-term success and stability. Later research by Downen, Johnson, and Jensen (1994) came to a similar conclusion, arguing that poison pills adoptions were “rational responses by management” in order to lower transactions costs and improve long-term focus. Heron and Lie (2000) argued similarly, suggesting that the presence of a poison pill does not automatically reduce takeover probabilities or premiums.

In contrast to prior research condemning pills, this new research argued that pills actually

benefited shareholders by encouraging managers to manage their firms for long-term success without the threat of a takeover hanging over their heads. Moreover, evidence slowly emerged that seemed to indicate that the presence of a pill actually increased the takeover premium firms could fetch in the event of an acquisition. Comment and Schwert (1995), for instance, argued that a poison pill often increases a takeover premium without necessarily lowering the probability that an acquisition will occur in the first place. Their study, including over 1400 firms, showed no statistically significant effect on firm performance following the adoption of a poison pill. Adding further credence to this argument was Coates (2000) and Daines (2001), who proposed that all firms have latent poison pills, given the ability of firms to adopt poison pills at any time with or without shareholder approval. Thus, the actual presence of a poison pill at any given time should not affect the firm or its performance.

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Perhaps the most fervent defender of poison pills (with the exception of Martin Lipton himself) has been John Coates, who following decades of research on poison pills and other takeover defenses, argues that poison pills do not necessarily reduce firm value. Previous studies suffer from a variety of methodological issues and often wrongly assume that pill adoption has an effect on takeover vulnerability. According to Coates, previous studies rarely take into account the ways takeover defenses interact, and based on this prior research, it is unfair to draw any conclusions about the wealth effects of poison pills.

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Yet despite the plethora of information regarding anti-takeover devices and poison pills, the focus of research regarding the wealth effects of defensive tactics has almost always focused on poison pill adoptions as opposed to poison pill removals. One of the few exceptions was research conducted by Linn and McConnell (1983). In the study, a sample was constructed using 61 firms that had removed a defensive measure during a 20-year period. Ultimately, their results showed a marginally negative CAR that proved statistically insignificant. Thus, it was their contention that anti-takeover devices are not inherently harmful to shareholders.

Nonetheless, despite the Linn and McConnell study, there continues to be only a handful of studies solely dedicated to understanding the effects of poison pill removals. Hence,

given the trends discussed above, it is clear that additional research is both necessary and relevant in regards to the effects of poison pill terminations.

#### REASONS FOR OUR RESEARCH

Although poison pill adoption rates soared in the 1980's and 1990's, as of late, the renewal and expiration rates of pills have begun to actually surpass adoption rates. As such, prior research that focused on pill adoptions have become less relevant while studies focusing on poison pill removals have become increasingly important.

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Moreover, in recent years, the number of companies forced to decide whether or not to renew their poison pills has continued to grow (see chart to the right for an illustration). If we couple the fact that a majority of poison pills were adopted from the period of 1996 to 1999 (in that period, 1997 had 455 adoptions while 1998 had a record 620 adoptions) with the fact that poison pill's generally have 10-year terms, it becomes apparent that a large number of firms will be facing renewal decisions in the next few years. For instance, in 2002, only 28 companies faced expiring poison pills while in 2003, that number rose to 39. Yet these numbers pale in comparison to the expirations expected over the next three years, with 183 pills set to expire in 2007 and another 276 expected to expire in 2008.<sup>9</sup>

#### 2007 Poison Pill Expirations

Number of Companies

with Poison Pill

Scheduled to Expire\* Renewal Rate

Health Technology 29 45.5

Finance 28 27.8

Producer Manufacturing 24 40

Electronic Technology 13 33.3

Consumer Services 12 42.9

Distribution Services 10 50

Technology Services 10 16.7

Retail Trade 9 16.7

Commercial Services 7 60

Miscellaneous 7 75

Process Industries 6 25

Consumer Durables 5 33.3

\* Natural expirations only - Excludes poison pills due to expire because the company accelerated the expiration date.

At the same time, institutional investors and activist investors have put forth both time and effort in order to persuade boards to remove poison pills. There is a cost borne by these large investors (albeit a smaller one than would be borne by individual investors) in encouraging, and times, fighting with boards to remove poison pills. Thus, it is valuable for these investors to understand whether or not the costs associated with shareholder proposals to remove poison pills help create value. If poison pill removals result in an increase in shareholder wealth, then perhaps their time and effort is well spent. However, if poison pill removals result in no change in shareholder wealth and/or operating performance, then perhaps their efforts are unfounded and unnecessary.

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SharkRepellant.net

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Additionally, most studies tend to focus on how poison pills affect stock prices. It is often assumed that this is the best measure for evaluating the positive and negative attributes of poison pills. Yet doing so assumes that markets are efficient and correctly price all aspects of corporate governance (among other things). As Porter (1987) explains, shareholder gains are often not adequate measures of takeover benefits, largely because they measure anticipated performance, which is compromised by an “asymmetry of information between managers and corporate outsiders.” In fact, it is very likely that markets do not price poison pills completely accurately, and as such, another measure is necessary to truly evaluate poison pills. Therefore, our study will not only analyze stock price movements following a pill’s removal, but shall also focus on operating performance changes using ROA as our proxy measure.

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At the same time, disagreement amongst scholars regarding poison pills has created the need for continued evaluations of pills and their effects. Our empirical results, although based on pill removals, will shine light on this disagreement, adding further evidence to the ongoing research regarding poison pill effects on performance measures. Although it is tempting to accept

the theoretical arguments behind either the shareholder interest hypothesis or management entrenchment hypothesis, it is crucial to provide empirical results before evaluating these theoretical frameworks.

Hence, based on recent trends in corporate governance and structure, it has become crucial for managers and boards to fully understand the impact of poison pill renewals and removals. Will the removal of a poison pill affect operating performance? Will share prices increase in response to a removal? And is removing a poison pill advantageous to firm performance? It is these questions that must be considered in poison pill removal situations, and as such, it is these questions that will be the centerpiece of our empirical study.

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## EXPECTED FINDINGS AND HYPOTHESES

As previously discussed, our study is primarily interested in contrasting the shareholder interest hypothesis with the managerial entrenchment hypothesis. Thus, it is with these theories in mind that we have developed a set of concrete hypotheses.

### Shareholder Wealth

The first of our hypotheses relates to the effects poison pill removals have on shareholder wealth (during both a 20-day and 162-day event window). Ultimately, if we are to accept the management entrenchment hypothesis as correct, then we also must concede that poison pills are harmful to firms. Thus, we would expect firm performance and shareholder wealth to improve following a poison pill's removal. Conversely, if we are to accept the shareholder interest hypothesis as truth, then we must accept poison pills as effective components of corporate governance. In that case, we would expect a poison pill removal to hurt shareholder returns (or at the very least, leave them unchanged). Thus:

Hypothesis 1a: Companies will experience a positive CAR following a poison

pill removal if management entrenchment hypothesis is accurate.

Hypothesis 1b (Null Hypothesis): Companies will experience no change or a

negative change in CAR following a poison pill removal if shareholder interest

hypothesis is accurate.

Underlying these hypotheses is the importance of understanding that the investors who drive the firm's CAR's may have different time-frames when making investment decisions.

Short-term investors tend to be somewhat more speculative, and as such, the 20-day results may be a result of speculative investors who trade with greater frequency. On the other hand, the 162day results are likely driven by long-term investors, who focus more on understanding the long-term consequences of corporate actions. As such, it can be argued that the 162-day results of our

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analysis are more indicative of the true effects of poison pill removals. Nevertheless, an analysis of both event intervals will provide us with crucial feedback in order to evaluate our hypotheses. true effects of poison pill removals. Nevertheless, an analysis of both event intervals will provide us with crucial feedback in order to evaluate our hypotheses.

## Operating Performance

As mentioned before, in addition to measuring stock price reactions, our research is also interested in understanding how poison pill removals affect operating performance. Event studies which track share prices in response to announcements only paint a partial picture of an occurrence's true effect, and as such, it is key to also measure accounting results in response to poison pill removals. In doing so, we are once again contrasting shareholder interest hypothesis with the managerial entrenchment hypothesis, and can formulate a similar hypotheses with regard to ROA. Thus, with regard to operating performance, we believe that:

Hypothesis 2a: Companies will see an increase in ROA following a poison pill removal if management entrenchment hypothesis is accurate.

Hypothesis 2b (Null Hypothesis): Companies will see no change or a decrease

in ROA following a poison pill removal if shareholder interest hypothesis is

accurate.

#### Poison Pills in Conjunction with Classified Boards

One of the key nuances of poison pills is also the way they interact with other defenses.

Although poison pills can be powerful in and of themselves, they are even more potent when

joined with other defenses. According to Bebchuck, Subramanian, and Coates (2002), this

potency is particularly evident when the poison pill is joined with a classified board, for the

various reasons discussed earlier. Yet while this effect is well documented, it is less clear what

occurs when a firm who previously had both defenses suddenly dismantles its poison pill.

Based on theoretical arguments, we would expect that firms who had both a poison pill and

classified board and proceeded to remove the poison pill (leaving the firm with only a classified

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board) would show a smaller stock price movement around the date of pill removal than those firms who never had a classified board (and are thus left with no defenses). We would expect that these firms are still somewhat protected from hostile takeovers (albeit to a lesser extent), and as such, the effect on their share price (regardless of whether it is positive or negative) should be less pronounced. Alternatively, a firm that had a poison pill but no classified board and then proceeded to remove their poison pill (leaving them with neither defense) would likely show a larger stock price movement around the date of pill removal than a firm who still possess a classified board. Ultimately, firms that remove poison pills and have no classified board will be unprotected from hostile takeovers, and as such, the market reaction (again, regardless of whether it is positive or negative) should be stronger.

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Moreover, our comparisons here also grant us the opportunity to test certain assumptions underlying both the shareholder interest and management entrenchment hypothesis. If management entrenchment hypothesis is accurate, then in our scenarios, firms who remove their poison pill and never had a classified board are likely to see their returns soar higher than those

who still maintain a classified board after the pill's removal. Without the two most potent takeover defenses, unprotected firms should see their returns rise higher than those firms whose managers are still somewhat entrenched.

On the other hand, market participants who believe in the shareholder interest hypothesis are likely to force somewhat protected firms returns lower than those who no longer maintain any takeover defenses. These investors likely believe that the removal of both a poison pill and classified board lowers potential takeover premiums, diminishes stability, and removes focus from long-term gains. Stated simply:

Hypothesis 3: Firms who remove their poison pill and do not have a classified board should produce an effect on the stock price that is of greater magnitude

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(in either a positive or negative direction) than a firm who removes their poison pill yet maintains their classified board. If investors adhere to the shareholder interests hypothesis, the movement will be negative. If investors adhere to the management entrenchment hypothesis, the movement will be positive.

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At the same time, a similar line of reasoning should also apply to our ROA analysis. Thus:

Hypothesis 4: Firms who remove their poison pill and do not have a classified board should see a greater magnitude change in their ROA (in either a positive or negative direction) than a firm who removes their pill yet maintains their classified board. If shareholder interest hypothesis is true, the movement will be negative. If the management entrenchment hypothesis is true, the movement will be positive.

Finally, although the purpose of this study is not to provide causality, we will nonetheless

discuss some of the factors that may have led to our results. Additional research beyond the

scope of this paper should be conducted in order to better shed light on these factors.

## METHODOLOGY

### Sample Construction

Data used to construct our sample come from FactSet Research Systems Inc.'s SharkRepellent.net (SR.net) database. SharkReppellent.net is an online collection of takeover defenses that tracks and reports on various takeover defense trends and issues. Information for takeover defenses are collected by firm's bylaws, articles of incorporation, and shareholder rights plans to build a database of each firm's key takeover defenses. For most firms, the starting year for which data began to be collected is 1990 and the database is updated on a continuous basis.

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Data regarding staggered boards come from Professor Lucian Bebchuck's website.<sup>10</sup> The

data is based on Bebchuck and Cohen's 2005 research entitled, "The Costs of Entrenched Boards". The data set contains information for firms from 1990 to 2002.

Our sample period is from January 2003 to January 2006. During this time period, 89 firms removed their poison pill. However, to be included in the final sample, we required that the firm: (1) have COMPUSTAT and CRSP data available for the year of removal and for a one-year period before and after removal, (2) have the poison pill in place for at least two years, (3) survived at least one year after the poison pill was removed, (4) did not readopt the pill within one year following the initial rescission, and (5) proactively redeemed the poison pill.<sup>12</sup>

After accounting for these requirements, we are left with a final sample of 72 firms, all of which are listed on the NYSE, NASDAQ, or AMEX. These companies include both firms that terminated the pill via an accelerated expiration date and firms

that made a redemption payment. The type of redemption is shown above.

#### Stock Price Data Collection

In compiling our data, our first step was to determine the pill removal dates that would

serve as our  $t = 0$ . In each case, we obtained pill removal dates from SharkRepellant.net, which reflects the date the pill was effectively removed and not the day the announcement was made regarding the pill's removal. As such, our results regarding stock price reaction may have some

10 Accessible at <http://www.law.harvard.edu/faculty/bebchuk/data.shtml>

11 This implies that a firm did not remove the poison pill in response to an event such a merger or bankruptcy proceeding

12 This includes all poison pills that expired or were otherwise terminated in advance of their originally planned terms. It

eliminates firms whose pills were terminated as a result of the company being acquired, going bankrupt, or undergoing some type

of reorganization.

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anticipation already built into them if the market reacted to the pill's removal on the announcement date as opposed to the effective date. In order to control for this effect when calculating stock price changes, we have used a 20-trading-day event interval. As such, for each firm, the date of adoption is  $t=0$ . The first event interval is therefore,  $t - 20$  and  $t + 20$ , or  $[-20,20]$ .

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We then proceeded to calculate the compounded abnormal returns ("CAR") during: (1) the 20-trading-day interval before and after the poison pill removal and (2) 162-trading days before and after the interval. Therefore, we calculated returns for the following periods:

$t = 0$

Pill Removal

Date

$t = 20$   $t = 162$   $t = -162$   $t = -20$

CAR 1b CAR 1a

CAR 2b

CAR 2a

In order to calculate the interval CAR's, we obtained the daily stock prices of each company during the year before, the year of, and the year after the poison pill removal. However, in order to appropriately measure the poison pill's effects, we needed to calculate the "abnormal returns",

which are returns in excess of regular market returns. Therefore, in CRSP, we obtained “beta excess returns”, which are returns that are adjusted for an individual firm’s risk (based on its beta) and are in excess of the S&P 500. From there, we were then able to calculate the change in stock

price using the following formula:

Pr

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With these numbers, we were then able to calculate the CAR during our set intervals of [-20, 20] and [-162, 162]. We later proceeded to analyze the statistical differences between CAR1a and

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CAR 1b as well as CAR 2a and CAR 2b, which reflected the [-20,20] and [-162,162] intervals, respectively (the results of this analysis are discussed later under “Empirical Results”).

2b, which reflected the [-20,20] and [-162,162] intervals, respectively (the results of this analysis are discussed later under “Empirical Results”).

#### ROA Data Collection

A similar, though slightly altered method was used to obtain our ROA data. Unlike stock returns, which can be obtained daily, ROA is primarily relevant on a yearly basis. Therefore, for this portion of our research, our base year was the year the pill was removed. We then proceeded to calculate ROA for the year before and the year after the pill was removed. Thus, our relevant intervals were  $t + 1$  and  $t - 1$ , as shown below:

$t = 0$

Pill Removal

Date

$t = +1$   $t = -1$

ROA 1a ROA 1a

In order to calculate ROA, we used the simple accounting function of:

EBIT

ROA

=

## Assets

Using COMPUSTAT, we were able to obtain the annual EBIT and assets reported for each company on their 10-K filings. We obtained these figures for the year before, the year of, and the year after the pill was removed. However, we once again needed ROA figures that were in excess of the market.

In order to calculate the excess ROA numbers ("ROAE"), we made use of Standard Industrial Classification Codes ("SIC" Codes), which categorize companies based on their

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industry.<sup>13</sup> The SIC Codes allowed us to match our 72 sample firms with their closest competitor based on the appropriate industry categorization. The ROA match for each poison pill firm consisted of a firm with the same 4-digit SIC, and in the few cases where no 4-digit match could be found, the match was made at the 3-digit level. We then calculated ROA in the same way for each competitor and subtracted this ROA calculation from our sample firm's calculations. Thus, our excess ROA calculation is as follows:

SampleFirm

EBIT

EBIT

Excess

ROA

=

Assets

Assets

Industry

Competitor

In most instances, the matched firms' ROA closely resembles the ROA of the pill-removing firms in the year prior to pill removal. Thus, the excess ROA measure in our results is well controlled for events other than the poison pill removal. Finally, once we obtained the appropriate excess ROA figures, we proceeded to compare ROA 1a to ROA 1b.

#### EMPIRICAL TESTS

In conducting our data analysis, we have conducted three statistical tests in order to determine the effect and statistical significance of poison pill removals.

#### The Student's t-test

The primary test we used was the student's t-test, and in calculating our t-statistics, we used two primary variations on this test. The first version of the t-test was devised to allow us to determine if the means of our two samples (in most cases, the returns before and returns after) were significantly different. Once computed, the t-statistic of this test was compared to a critical value in order to determine the level of significance in our test. If the t-statistic was in fact

13 These codes are four digits, and the first digit provides a broad industry categorization and each additional digit provides a more

specific categorization. For example, 2600 is the code for Paper Products, while 2611 is the more specific code for Pulp Mills and

2621 is the specific code for Paper Mills.

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significant, then we could conclude that the returns after the removal were significantly different from the returns before removal, which could in turn be attributed to the pill's removal.

e removal were significantly different

from the returns before removal, which could in turn be attributed to the pill's removal.

Our second variation of the student's t-test analyzed the entire return over the given period, which is also referred to as the Cumulative Average Abnormal Return ("CAAR"). Theoretically, we would expect that because our returns are benchmarked to the market, our CAAR should be equal to approximately 0. However, the pill removal may create a cumulative return that is significantly positive or negative, which this test will help us analyze. The formulas used to calculate all of these t-statistics are provided in the discussion of our results.

## Regression

In order to further probe our results, we also ran a regression in order to reassess the significance of our results. In conducting our regression, our dependent variable was either daily stock price or yearly ROA, depending on which variable we were analyzing. Our independent variables consisted of two dummy variables, which indicated the presence (or lack of) a categorical trait. The regression equation looked as follows:

= .

+ #Dum1+ .

Dum2

Riti

t

In this equation, the first dummy variable (Dum1) related to whether the stock or ROA occurred in the event interval before or after the pill removal. If the price or ROA occurred prior to the pill removal, dummy1=0. Alternatively, if the price or ROA occurred after the pill removal, dummy1=1. The second dummy (Dum2) variable related to whether the firm in question maintained a classified board. If the firm did not maintain a classified board, dummy2=0. Alternatively, if the firm did maintain a classified board, dummy2=1. After running a linear regression, we were then able to calculate an additional t-statistic that we could compare to an

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appropriate critical value. This t-statistic gave us further insight into the statistical significance of our data.

ate critical value. This t-statistic gave us further insight into the statistical significance of our data.

### Binomial Test Approximated by a Normal Distribution

The final statistical test conducted involved a normal approximation to the binomial test.

This test helps analyze the likelihood of a certain event occurring if there are only two possible outcomes. In this instance, our outcomes are either a positive return or negative return. Thus, based on the law of large numbers and a normal distribution, we would expect a fairly even split between the two possible outcomes. This test helps analyze whether or not the outcomes are due to mere chance or are statistically significant using the following equation.

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## EMPIRICAL RESULTS

### Shareholder Wealth

As mentioned earlier, one of the most common ways to quantify poison pill effects is to analyze their impact on a firm's share price before and after a pill adoption and/or removal. In our case, we have done this during both a 20-day and 162-day event period. Doing so provides us with some interesting insight into the impact poison pills have on shareholders. The table on the following page summarizes our results, and in order to calculate the t-statistics in this output (for both of the respective CAR's), the two following formulas were used:

CAR<sub>after</sub>

.

CAR

before

t

.

statistic

=

(1) T-statistic comparing CAR before and after removal:

#12

.

22

+

nn

12

(2) T-statistic testing if CAR around removal is

CAAR(  
n)

t

.

statistic

=

significantly different from 0: .

of

n

firms

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STOCK RETURNS

20-DAY CAR

BEFORE

REMOVAL

AFTER

REMOVAL

MEAN -0.0024 0.0033

ST. DEV 0.0650 0.0612

T STATISTIC -0.3152 0.4495

MEDIAN 0.0054 -0.0025

% of Firms With

Positive Return

55% 48%

Mean Change in CAR 0.0057

CAAR [-20,20] 0.0008

STOCK RETURNS

162-CAR

BEFORE

REMOVAL

AFTER

REMOVAL

MEAN 0.0417 -0.0119

ST. DEV 0.2880 0.2225

T STATISTIC 1.2296 -0.4539

MEDIAN 0.0680 0.0090

% of Firms With

Positive Return

69% 51%

Mean Change in CAR -0.0536

CAAR [-162,162] 0.0298

[-20,20] T Statistic (comparing CAR after removal CAR before removal) -0.54510

[-162,162] T Statistic (comparing CAR after removal to CAR before removal) 1.24170

[40-day CAAR] T Statistic (testing if CAR around the removal is significantly different from 0) 0.08827

[364-day CAAR] T Statistic (testing if CAR around the removal is significantly different from 0) 0.61793

In the charts above are the summary measures of both the 20-day and 162-day CAR's for firms before and after the pill removal. Again, although the 162-day interval is a somewhat more reliable measure for long-term wealth effects, the 20-day interval may nonetheless provides us with a degree of insight into the market's original reaction to the pill's removal. Thus, it is important to carefully analyze both of these event windows.

In analyzing these results, we begin with examining the effects on 20-day CAR. A quick glance reveals that the 20-day returns show no clear trend, with stock returns remaining fairly steady 20-days before and 20-days after the pill's removal (the change between the two periods is less than 1%). Although there is some increase in returns during this period, the percent change is minimal, at best. If management entrenchment hypothesis were in fact true, we would have expected to see a more pronounced increase in our 20-day CAR following the pill removal. However, we see no such trend. In fact, our calculated t-statistics of -.545 and .088 confirms

that there is in fact no marked change in stock performance during the  $[-20,20]$  interval. Thus, we cannot reject the null hypothesis in this instance, and as such, our 20-day results suggest that

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poison pill removals have little effect on shareholder wealth during the period immediately following the pill's removal. Our regression output and binomial tests reiterate this result, with statistically insignificant t-statistics of .589 and .830, respectively.

ffect on shareholder wealth during the period immediately following the pill's removal. Our regression output and binomial tests reiterate this result, with statistically insignificant t-statistics of .589 and .830, respectively.

A quick glance at the 162-day returns, on the other hand, does show a more visible change in CAR following pill removal. In this interval we see a pronounced decrease in returns following a pill removal, with both the mean and median 162-day CAR falling by nearly 5%. Thus, the results of our analysis seem to undermine the management entrenchment hypothesis, as shareholders appear to be slightly worse off following the removal of the poison pill. Although we make no claims of causality, it is possible that the market views poison pill removals as actions that lower future takeover premiums, and as such, long-term stock prices be suffering as a result. It is quite possible that investors have attitudes consistent with shareholder interest hypothesis, and as such, they may view poison pills as effective (and perhaps beneficial) devices in maintaining stability and long-term focus from managers. Thus, the removal of the pill may actually harm, rather than help, shareholders.

Regardless of the cause, we nonetheless find that based on the student's t-test, the statistical significance of the 162-day interval is also insignificant at the 5%, 10%, and 15% level. Moreover, our regression results also indicate a statistical insignificance, with a t-statistic of 1.23. Interestingly enough, the binomial test in this case produces a t-statistic of 1.73, which is significant at the 10% level. However, because a majority of our measures resulted in statistically insignificant results, it is difficult to reject the null hypothesis in this instance, as

there is no clearly significant effect on the 162-day CAR following the pill's removal. As such, it appears that poison pill removals do not have a significantly positive impact on shareholders (and on the contrary, the impact may in fact be negative). Simply stated, our study indicates that

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the effects of pill removals on shareholder wealth are not consistent with the management entrenchment hypothesis.

not consistent with the management entrenchment hypothesis.

One additional key point to note in analyzing our results is that any change in performance may be greatly affected by the market's anticipation of a pill removal. It is often the case that the market anticipates an event (which in this case, would be the pill's removal) due to some kind of information leak. Thus, our CAR measure before pill removal may be inflated as a result of the market already anticipating the pill's removal. Thus, when the pill is later removed, the effect on stock performance is minimal, as most of the market has already built the removal into the stock price. Thus, the CAR after removal may not be suffering and instead, the CAR prior to removal may in fact be inflated due to "joy before effects" that accompany the market's anticipation of a positive event. In any case, we simply cannot reject the null hypothesis when it comes to poison pill effects on shareholder wealth.

#### Operating Effects

Although there appears to be no statistically significant effect of pill removal on stock performance, additional analysis is needed to prod deeper into the effects of pill removals. Thus, our analysis of poison pill removals affect on accounting performance should provide us with greater insight into how poison pills truly affect a firm's operational capabilities. Our results analyzing Excess ROA (ROAE) before and after pill removal are summarized below.

ROAE

BEFORE

REMOVAL

AFTER

REMOVAL

MEAN -0.0041 -0.0332

ST. DEV 0.1311 0.2023

T STATISTIC -0.2653 -1.3905

MEDIAN -0.0076 -0.0120

% of Firms With Positive

Return

37% 38%

Mean change in ROAE -0.0291

T Statistic comparing ROAE after removal to

ROAE before removal 1.0010

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There are a few items to note in this output. First and foremost, the following formula was used to calculate our t-statistic: was used to calculate our t-statistic:

ROAE.

ROAE

after

before

t

.

statistic

=

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This t-statistic tells us whether or not the ROAE after removal is significantly different than the ROAE before removal. Nonetheless, before we analyze this t-statistic and its meaning, we first note a number of trends in our data.

First and foremost, we find that ROAE appears to show a marginal decrease following a pill's removal compared to ROAE before a pill's removal. Prior to removal, our sample firms are somewhat underperforming, with an ROAE of  $-.4\%$ . However, after pill removal, the firms underperformed to a greater extent, with an average fall in ROAE that is nearly  $3\%$ . Hence, what we see is that firms who remove their poison pill see a decline in their ROAE, suggesting that the pill removal may actually be damaging firm performance. Again, this lends some credibility to the shareholder interest hypothesis, given that the removal of the poison pill seems to harm rather than improve operating performance. In contrast, if the management entrenchment hypothesis were in fact true, then we would anticipate a marked improvement in ROA following a poison pill removal. However, based on our results, ROA does not improve significantly.

Moreover, in order to further probe our results, we have graphed the year-by-year comparison of ROAE before and after pill removal. This graph is shown on the following page, and based on this graph, we once again find support for the shareholder interest hypothesis.

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In fact, if we examine the graph to the right, we can see that in 2003 and 2004, ROAE showed a slight decrease after the pill's removal. Yet in 2005, this trend was even more pronounced, with a steep decline in ROAE occurring following the pill's removal. Hence, we see regardless of the year, firm performance seems to suffer following a pill's removal.

Nevertheless, despite this trend in ROA, we once again we find that our results show only marginal statistical significance, with our student's t-test producing a t-statistic of 1.001. Our regression confirms these results as does our binomial test, which produce insignificant t-statistics of 1.08 and .92, respectively.

Thus, we once again find a lack of support for the management entrenchment hypothesis. If poison pills are truly harmful to a firm, then we would anticipate an increase in the ROAE of firms that remove the supposedly harmful poison pills. However, our results show that there is no statistically significant reaction to a poison pill removal. As such, our t-tests and regression fail to reject the null hypothesis, and therefore, we cannot claim that poison pills harm operating performance. Similar to our results regarding shareholder wealth, our study indicates that the effects of pill removals on operating performance are not consistent with the management entrenchment hypothesis

## The Interaction of Poison Pills and Classified Boards

Our final tests involve understanding the increased potency a poison pill and classified

board provide by further segregating our pill-removing firms into those that maintain classified

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boards and those that do not. As discussed earlier, we anticipated that firms who remove their poison pill and do not have a classified board should see a greater magnitude change in their ROA and/or CAR (in either a positive or negative direction) than a firm who removes their pill yet maintains their classified board. Moreover, if management entrenchment hypothesis is in fact true, then we would expect any movement in ROA or CAR for firms who no longer have either takeover defense to increase by a significant amount more than the change in ROA or CAR for firms who still maintain a classified board. Hence, it is with these hypotheses in mind that we begin an interpretation of our results.

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#### 20-day CAR Before & After Pill Removal For Firms With & Without Staggered Boards

We began our analysis by comparing the 20-day CAR's of firms that remove a poison pill and maintain a staggered board with firms that remove a pill and do not maintain a staggered board. The formulas used to calculate the t-statistics in this instance are shown in Exhibit 1, at the end of the paper. The results of this analysis are summarized below.

20 DAY CAR

WITH STAGGERED BOARD

BEFORE

REMOVAL

AFTER

REMOVAL

MEAN -0.0043 -0.0028

ST. DEV 0.0573 0.0698

T STATISTIC -0.4769 -0.2565

MEDIAN 0.0062 -0.0035

% of Firms With Positive Return 60% 45%

CAAR [-20,20] -0.0072

Mean difference in CAR's 0.0015

T-statistic testing performance

change for firms with staggered

board

0.1144

20 DAY CAR

WITHOUT STAGGERED BOARD

BEFORE

REMOVAL

AFTER

REMOVAL

MEAN 0.0000 0.0111

ST. DEV 0.0746 0.0480

T STATISTIC -0.0010 1.3059

MEDIAN -0.0011 0.0097

% of Firms With Positive Return 52% 55%

CAAR [-20,20] 0.0111

Mean difference in CAR's 0.0111

T-statistic testing performance

change for firms without

staggered board

0.6074

40-day CAAR T-Statistic testing if CAR difference for firms with staggered board is significantly different from

CAR difference for firms without staggered board around removal

0.8223

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There are a few things worth noting in this summary. First and foremost, both sets of firms see their CAR's improve after the pill's removal. However, what is of interest to us is that this result is true to a greater extent for firms without staggered boards. Firms who remove their pill and maintain a staggered board see a mean CAR increase of about .15%, while firms who remove their pill but do not maintain a staggered board see a CAR increase of about 1.1%, a difference of over .9%. This trend is clearly visible in the graph below.

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Based on this

graph, we can see that our 20-day results do in fact provide some evidence for management entrenchment hypothesis.

The trend in our data seems to indicate that firms without either of

these two defenses are

rewarded, while firms who remove a poison pill but still maintain classified boards are rewarded to a lesser extent. Hence, it appears as though firms who no longer possess either of these two potent takeover defenses will perform better than those who still possess a classified board.

In any case, despite this apparent support for management entrenchment hypothesis based on the trend of our data, we nonetheless find that our 20-day CAR are not statistically significant in any of the three tests we conducted. Our student's t-test showed no statistical significance, producing a t-statistic of .822. At the same time, our regression and binomial distribution tests similarly found no statistical significance, providing t-statistics of .280 and

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.590, respectively. As such, we once again are unable to reject the null hypothesis and cannot definitively accept the management entrenchment hypothesis as truth. definitively accept the management entrenchment hypothesis as truth.

#### 162-day CAR Before & After Pill Removal For Firms With & Without Staggered Boards

Given this result, we proceeded to analyze the 162-day CAR for our sample of firms.

The formulas used to calculate the t-statistic are the same as those discussed in Exhibit 1 (although in this scenario, they reflect the 162-day CAR). The output from this analysis is shown below.

162 DAY CAR

WITH STAGGERED BOARD

BEFORE

REMOVAL

AFTER

REMOVAL

MEAN 0.0612 -0.0079

ST. DEV 0.0680 0.0296

T STATISTIC 1.6861 -1.6975

MEDIAN 0.0773 0.0296

% of Firms With

Positive Return

68% 58%

CAAR [-162,162] 0.0532

T-statistic testing

performance change

for firms with

staggered board

-1.5804

162 DAY CAR

WITHOUT STAGGERED BOARD

BEFORE

REMOVAL

AFTER

REMOVAL

MEAN 0.0286 -0.0830

ST. DEV 0.2752 0.1776

T STATISTIC 0.5883 -1.6472

MEDIAN 0.0222 -0.0470

% of Firms With

Positive Return

59% 31%

CAR [-162,162] -0.0544

T-statistic testing

performance change

for firms without

staggered board

-1.5282

364-day CAAR T-Statistic testing if CAR difference for firms with staggered board is significantly different from CAR difference for firms without staggered board around removal 1.1359

In this instance we see a marked decline in the CAR of all firms after their pill has been removed (this is in contrast to the 20-day CAR, which increased for firms after the pill removal). However, as we predicted, the decline is far greater for firms without a staggered board. This is clearly evident on the graph on the following page.

This result, in contrast to the results of our 20-day CAR, lends credence to the shareholder interest hypothesis, given that the CAR for unprotected firms suffers to a greater extent. Firms that remove their pill but maintain a staggered board see their 162-day CAR fall

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by about 7%, while firms that remove their pill but do not maintain a staggered board see their CAR fall by about 11% in the same period.

that remove their pill but do not maintain a staggered board see their CAR fall by about 11% in the same period.

In other words, firms without either of these two takeover

defenses suffer more than firms that at least maintain a staggered board. Therefore, in the long-run, it appears that investors believe that the removal of all takeover defenses may actually hurt firm returns, perhaps because it lowers future takeover premiums or forces managers to constantly operate under the pressure of a potential takeover. Hence, we see that firms that

retain a classified board, despite the removal of their poison pill, tend to see a less significant fall in CAR in the long-run than firms who retain neither takeover defense.

In testing for statistical significance, we once again find that our results produce t-statistics that are statistically insignificant. Hence, we cannot reject the null hypothesis and cannot confirm that management entrenchment hypothesis is in fact true. We do note, however, that our t-statistics after segregating our firms into those with and without staggered boards are higher than our previous 162-day CAR t-statistics. As such, there is at least some value in segregating our firms this way. Nonetheless, our results are still statistically insignificant, and as such, it is not clear that presence of a staggered board and poison pill affects a firm's stock returns in any clearly significant way.

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## ROAE 1-Year Before & After Pill Removal For Firms With and Without Staggered

Boards

-Year Before & After Pill Removal For Firms With and Without Staggered

Boards

In our earlier results, we found that ROAE appears to show a marginal decrease following a pill's removal, yet this decrease was not statistically significant. In order to further probe these results, we have further segregated our firms into those that maintain a classified board and those that do not. The results are shown below and the formulas used to calculate our

ROAE

WITH STAGGERED BOARD

BEFORE

REMOVAL

AFTER

REMOVAL

MEAN 0.0165 0.0026

ST. DEV 0.1505 0.0957

T STATISTIC 0.6211 0.1549

MEDIAN -0.0075 -0.0105

% of Firms With Positive Return 43% 43%

Mean Change in ROAE -0.0139

T-statistic testing performance

change for firms with staggered

board

-0.3180

ROAE

WITHOUT STAGGERED BOARD

BEFORE

REMOVAL

AFTER

REMOVAL

MEAN -0.0266 -0.0722

ST. DEV 0.1036 0.2719

T STATISTIC -1.5401 -1.5928

MEDIAN -0.0102 -0.0167

% of Firms With Positive Return 37% 41%

Mean Change in ROAE -0.0456

T-statistic testing performance

change for firms without

staggered board

-1.0856

T- statistic testing whether the ROAE(after)-ROAE(before) for firms with staggered board is statistically different from ROAE(after)-ROAE(before) for firms without staggered board -1.5017

various t-statistics are shown in Exhibit 2.

Once again, there are a variety of trends to note in these results. First and foremost, we

see that both sets of firms see a decline in their ROAE following a pill removal. However, what is particularly noticeable in our results is that firms who remove their poison pill and have no staggered board see their ROAE fall by substantially more than firms who remove their poison pill but maintain a staggered board. Firms with a staggered board see their ROAE fall by about 1.3%, while firms without a staggered board see their ROAE fall by nearly 5%. This is consistent with our original hypothesis regarding the magnitude of change in performance measures, as we see that totally unprotected firms do in fact see a change that is of greater

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magnitude than our “somewhat” protected firms (e.g., those firms that still possess a staggered board). board).

Indeed, much like

the trends noted in our

analysis of 162-day

CAR's, we see once again

that firms without either

takeover defense suffer

more than firms who at

least maintain a staggered

board. Hence, we once

again find support for the shareholder interest hypothesis, as it appears that firms without either takeover defense actually perform worse than firms who remove their poison pill yet still maintain a staggered board. This is clearly visible in the graph above, which further illustrates the changes in ROAE for firms with and without staggered boards.

In any case, , the statistical tests performed in this instance show no clear significance.

The student's t-test (which tests whether the ROAEAFTER-ROAEBEFORE for firms with staggered board is statistically different from ROAEAFTER-ROAEBEFORE for firms without staggered board) produces a t-statistic of -1.501, while the regression and binomial test produced t-statistics of

1.59 and -1.23, respectively. Although these statistics are close to significant, they nevertheless provide insufficient evidence to reject the null hypothesis.

Thus, if we combine these results with those discussed above in regard to shareholder wealth, it appears that poison pill removals do not necessarily improve firm performance or shareholder wealth, even when we account for the possible presence of a classified board. Our

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results show no clear support for the management entrenchment hypothesis, as we fail to reject the null hypothesis in all instances. Thus, we cannot claim with certainty that the presence of both a classified board and poison pill will hurt firm and shareholder performance.

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## SUMMARY OF FINDINGS

The management entrenchment hypothesis, at its core, is an argument against poison pills. Those who adhere to the hypothesis believe the the adoption of poison pills provide shelter for poor management while hindering potentially beneficial takeovers. They therefore contend that poison pill adoptions cause firm returns to suffer, and only when a pill is removed will performance improve. Yet despite this popular argument, our results seem to suggest that poison pills have no statistically significant effect on 20-day CAR, 162-day CAR, or 1-year ROA. If poison pills were truly harmful, we would expect to see a significant improvement in performance following the pill's removal, yet our results show no such improvement.<sup>14</sup>

Moreover, as mentioned numerous times throughout our study, the more accurate measures in our tests are those based on long-term performance measures. The 20-day event interval measures are important, yet they likely capture some irrational market movement and may be tainted by investors who anticipated the pill's removal and acted within that 20-day window. As result, the 162-day CAR and ROA tests provide better insight into the true effects of poison pill removals. What makes this insight important is that in the all-important 162-day

CAR and ROA tests, we see both measures decline following the pill's removal. This result, although not statistically significant, nevertheless contradicts the arguments made by the management entrenchment hypothesis. In fact, a decline following the pill's removal may even

14 It should be noted that our study's results suffer from a few minor flaws that should be accounted for in any future studies. For

instance, our sample consists mostly of large firms, for whom a pill removal may be less significant. Additionally, a larger

sample size and the use of announcement (and not effective) pill removal dates might have improved our overall findings.

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lend credence to the shareholder interest hypothesis, as it seems that firms without a poison pill perform worse in the long run. perform worse in the long run.

With regard to the interaction of poison pills and classified boards, we see that in all three instances examined, firms who remove their poison pill and were never protected by a staggered board are more affected by the pill's removal (albeit in a surprisingly negative direction) than firms who remove a pill but maintain a staggered board. These firms, who are no longer protected by the two most potent takeover defenses, show a more pronounced change in performance measures (as we hypothesized), which leads us to believe that the number of takeover defenses a firm possesses may impact its returns. Although there was no statistically significant difference between our two sets of firms, the trends in our data nevertheless suggested the need for additional research in this area.

In any event, the totality of our research suggests that the wealth loss and performance loss suggested by poison pill opponents may be inaccurate. Our results show no statistically significant gain associated with poison pill removals, which indicates that the presence of a poison pill may not be as harmful to firms as previously thought. Our study is consistent with results by Brickley et al. (1994), Comment and Schwert (1995), Heron and Lie (2000) and Coates (2000). Like those studies, our research shows that poison pills do not have a detrimental effect on firms that is statistically significant. Thus, arguments condemning poison pills for their negative effect on firm performance and shareholder wealth appear unfounded.

Instead, our analysis suggest that poison pills are not inherently harmful to firms and the removal of such devices does not improve firm performance or shareholder wealth to any statistically significant extent. Although we make no claims of causality, there are a variety of

factors that may have shaped our results. We discuss some of these factors below, but note that additional research will be necessary in order to fully confirm these possible causes.

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To begin with, the results of our study seem to support the arguments made by Coates (2000) and Daines (2001). As discussed earlier, it was the contention of these researchers that managers at all firms have latent poison pills that can be immediately enacted, making the actual deployment of a pill of little consequence. The same idea is true with regard to poison pill removals, given that a firm who removes their poison pill can readopt the pill at a later date should it become necessary. Therefore, as long as poison pills are at the sole discretion of the board, the actual presence (or lack thereof) of poison pills seems to be irrelevant with regard to firm and stock performance.

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Additionally, we must also consider how potent poison pills really are in preventing takeovers once they have been initiated. It has been suggested by some that while a poison pill makes a takeover more difficult, it does not make it impossible. In fact, some research suggests that poison pills have no clear effect on the likelihood of a takeover. As such, the actual presence of a poison pill may not be particularly important in the eyes of shareholders and/or managers. Investors may therefore view poison pill removals as only marginally important, and as such, we may see a lack of any significant reaction to their removal. The same can be said for classified boards. They too can be deterrants to takeovers, but it is not clear how much importance investors place on their ability to completely prevent a takeover.

Moreover, we must consider the signalling effects of removing a poison pill. Firms that remove a poison pill may be essentially inviting potential acquirers to make takeover bids for their firms. By removing barriers to a potential takeover, they have essentially put a “for-sale” sign on their firm. This makes a takeover more likely, and should improve returns for the firm and shareholders. However, the removal of the poison pill may have a parallel effect in that it reduces the potential takeover premium a firm will now receive. The poison pill is often seen as a bargaining chip, and without it, takeover premiums are likely to be somewhat lower.

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Therefore, a poison pill removal produces two, offsetting results. We see that the firm is now more likely to be taken over (leading to an increase in performance measures) but the premium is likely to be lower (leading to a decrease in performance measures). The net result is likely to be a wash. This would lead to an insignificant reaction in share price following the removal (which our results show), as the two effects offset one another and lead to an insignificant change.

now more likely to be taken over (leading to an increase in performance measures) but the premium is likely to be lower (leading to a decrease in performance measures). The net result is likely to be a wash. This would lead to an insignificant reaction in share price following the removal (which our results show), as the two effects offset one another and lead to an insignificant change.

Although these offsetting effects do not apply to ROAE measures, we can also identify a variety of factors that might lead to the statistically insignificant change in ROAE following a pill's removal. To begin with, it has been suggested (by those who support the management entrenchment hypothesis) that managers who operate without the protection of poison pills will manage their firms more efficiently given their lack of takeover protection. This should improve ROAE. Alternatively, it can also be argued that poison pill removals will encourage managers to focus more on short-term gains and less on long-term stability.<sup>15</sup> This will often lead to a decrease in ROAE, thus offsetting the previous gain. The net result is likely to be a wash once again, as the firm experiences no significant change in ROAE after the pill is removed.

Hence, it is very likely that sweeping generalizations about poison pills are simply impossible to make. To definitively narrow down the effects of poison pills into two hypotheses is virtually impossible, and it is in fact very likely that parts of both management entrenchment

and shareholder interest hypothesis are true to some extent. Our study supports this idea, as it appears that the effects of poison pills can vary greatly, depending on factors including board size, firm size, industry categorization, prior performance, and a myriad of other factors. Further research may be necessary to truly categorize the effects of poison pills and to find a causality behind their effects.

15 It should be noted that we attempted to test this hypothesis by analyzing changes in research and development expenditures after poison pill removals. However, not enough data was available to accurately analyze our results.

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Nevertheless, our study's results suggest that the trend toward removing poison pills may be unjustified and unnecessary. Activist investors who call for their removal may bear unnecessary costs in doing so, and the results of the removal seem to provide few (if any) gains. Our results make it clear that poison pill removals do not show statistically significant increases in shareholder wealth or firm performance, and as such, poison pills do not appear to be hurting firms to the extent that is often suggested. Simply stated, poison pills may not be as poisonous as their name suggests.

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EXHIBIT XHIBIT 1

T statistic testing performance change for firms with  
staggered board

T statistic testing performance change for firms  
without staggered board

T statistic testing if CAR for firms with staggered  
board is significantly different from CAR for firms  
without staggered board

EXHIBIT 2

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T statistic testing performance change for firms with  
a staggered board

T statistic testing performance change for firms  
without a staggered board

T statistic comparing ROA differentials for firms  
with and without a staggered board

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