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Does real-time reporting deter strategic disclosures by management?

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DOES REAL-TIME REPORTING DETER STRATEGIC DISCLOSURES BY MANAGEMENT?

by

Xiaoli Tian

An Abstract

Of a thesis submitted in partial fulfillment of the requirements
for the Doctor of Philosophy degree in Business Administration
in the Graduate College of
The University of Iowa

July 2012

Thesis Supervisors: Professor Daniel Collins
Associate Professor Paul Hribar

ABSTRACT

Over the last decade, the SEC has taken a number of steps to move towards a real-time reporting regime in an effort to deter strategic accumulation of news disclosures by management. However, evidence from theoretical literature suggests managers are still able to engage in strategic bunching of within-firm disclosures under a real-time reporting regime if managers have control over the timing of news-triggering events. To test whether real-time reporting deters strategic disclosures I examine managers' disclosure behavior for both regular poison pill adoptions and in-play pill adoptions because managers can time the regular poison pill adoptions but have limited ability to do so for in-play pill adoptions. My results indicate real-time reporting does not (does) deter disclosure bunching for regular poison pills (in-play pills). To the extent that disclosure bunching occurs for in-play pills under the real-time reporting regime, my findings suggest managers are more likely to time the disclosure of other news to achieve disclosure bunching. Disclosure bunching dampens the negative pricing impact of poison pill adoption disclosures and continues to do so under the real-time reporting regime.

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PH.D. THESIS

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LIST OF ABBREVIATIONS

Abs_Return	The absolute value of size adjusted cumulative abnormal return over the window (-1, 1) centered on the first day of poison pill adoption disclosure
Analyst Coverage	The number of analysts following at the end of quarter t-1
BUNCH	A dummy variable if the disclosure of a poison pill adoption is bunched with other news and zero otherwise
BUNCH_GOOD_NEWS	A dummy variable that equals one for disclosure observations that are bunched with other good news, and zero otherwise.
BUNCH_UNCERTAIN_NEWS	A dummy variable that equals one for disclosure observations that are bunched with other uncertain news, and zero otherwise
CAR	Cumulative size adjusted return over the five day window (-2, 2) centered around the first day of poison pill adoption disclosures
DIS_OTHER	A dummy variable that equals 1 if there is no disclosure from management but there are disclosures about the firm from a third party (e.g. forecast revision) that are issued over the five day window (-2, 2) of the first disclosure of poison pill adoptions, and zero otherwise.
Event_Dummies	Dummy variables for each bunched news event
Firm_Size	The natural logarithm of the market value of equity
Forecast_Dispersion	The standard deviation of analyst forecasts for firm i in quarter t-1
In_Play_ Pills	A dummy variable that equals one for adoption of in-play pills and zero otherwise
Loss_Dummy	A dummy variable that equals one if pre-tax income is negative and zero otherwise
Loss_Dummy	A dummy variable that equals one if pre-tax income is negative
MGMT_CONTR	A dummy variable that equals one if an observation is bunched with at least one event that managers have control over the disclosure or the timing and zero otherwise

MTB	Market to book ratio
Past_Return	The absolute value of sized adjusted cumulative abnormal return over the window (-30, -2)
Positive	A dummy variable that equals one if the size-adjusted cumulative abnormal return over (-1, 1) is positive and zero otherwise
Real Time_Dummy	A dummy variable that equals one for poison pill adoptions that occur after August 23, 2004, the effective date for the new 8-K amendments, and zero otherwise
Return Volatility	The volatility of returns in the past 250 days from event day 0. Firms with less than 100 observations of daily returns are excluded
ROA	Return on assets measured as pre-tax income divided by total assets
S_UNEXP_VOL	Standardized unexpected volume
Trend	The total number of news items for a firm from Factiva over a one-year window centered on the first day of a poison pill adoption disclosure. It is hand collected from Factiva and then scaled by 1000. It is used to control for the total amount of news released over time for the sample firms
$UNEXP\_VOL_i$	Unexpected Volume for firm i
Volatility_Index	The mean value of the Chicago Board Options Exchange's volatility index over the three-day window (-1, 1)

CHAPTER 1 INTRODUCTION

This paper is motivated by the broad research question of whether the SEC's real-time reporting requirements deter strategic disclosure by management.[1] In 2002, following the revelation of a series of financial reporting scandals, real-time disclosure was written into law under Section 409 of the Sarbanes–Oxley Act (SOX). SOX Section 409, "Real Time Issuer Disclosure", requires companies to disclose material information "on a rapid and current basis." In response to SOX Section 409, the SEC issued amendments to its 8-K filing requirement in 2004, which expanded the required reportable items and shortened the filing deadline to be within four business days after a reportable event occurs.[2] Subsequent to this amendment, the SEC has introduced a number of other regulations to push for more real-time disclosure.[3] In part, these regulations are intended to induce managers to provide more timely disclosures rather than let them accumulate and bunch news disclosures.

Prior theoretical literature argues there are two channels through which managers can engage in strategic timing of disclosures. One is by timing the disclosure after an information event occurs (Grossman 1981; Verrecchia 1983; Dye 1985). Another is by timing the occurrence of the underlying information event (Matthews and Postlewaite 1985; Shavell 1994; Verrecchia 2001). Matthews and Postlewaite (1985) predicts the latter can undermine the effectiveness of a mandatory disclosure standard. Building on the same argument, Dye (2010) predicts managers are still able to bunch the disclosure of within-firm news through bunching the occurrence of information events under a real-

[1] Real time disclosure is sometimes referred to as continuous reporting (e.g. Dye 2010).

[2] Form 8-K is used by public companies to report material corporate events.

[3] For instance, the shortening of the filing deadline for periodic reports and the introduction of interactive data based on XBRL (eXtensible Business Reporting Language) are both motivated in part by real-time disclosure initiatives.

time reporting regime. These derivations from theoretical studies indicate managers can achieve strategic disclosure by timing news-triggering events. Real-time reporting does not constrain this aspect of managerial discretion. Thus, whether real-time reporting can achieve its intended purpose or not is an empirical question. This paper examines the bunching of within-firm disclosures and how the SEC's real-time reporting requirements affect this aspect of strategic disclosure.

To test whether real-time reporting reduces strategic disclosure bunching, I use poison pill (shareholder rights plan) adoptions as the underlying information event. The adoption of poison pills provides a useful setting to test the impact of real-time reporting on strategic disclosure for at least three reasons. The primary reason is because managers' ability to control the timing of poison pill adoptions exhibits cross sectional variation. The poison pill sample includes subsamples of regular pills and in-play pills. Poison pills can be adopted without a shareholder vote.[4] Thus, the adoption of a regular poison pill has a discretionary element allowing firms to time the adoption so that its disclosure coincides with the disclosures of other news regardless of disclosure regime. This allows me to examine the impact of real-time reporting on strategic disclosure bunching when managers can control the timing of the underlying news event. On the other hand, in-play pills are adopted in response to specific takeover threats. Managers' ability to time the adoption of these poison pills is limited. This unique feature allows me to examine whether real-time reporting is more effective at reducing strategic disclosure bunching when managers' ability to time the underlying information event is constrained.

Second, poison pill adoption disclosures fall under the SEC's 2004 8-K amendment. Prior to the new 8-K amendment in 2004, poison pill adoptions were required to be disclosed only in periodic financial statements (i.e. 10-Ks, 10-Qs). Under

[4] The adoption of poison pills requires a board approval. In this paper, I assume the board of directors is largely supportive of managers.

the new 8-K requirement, poison pill adoptions are required to be disclosed in 8-Ks within four business days of adoption. This new 8-K amendment shifts the disclosure regime for poison pill adoptions towards a real-time basis. In this paper, I label the disclosure regime prior to the new 8-K amendment as a discrete-time reporting regime, and the disclosure regime after the 8-K amendment as a real-time reporting regime.

Third, managers are likely to engage in disclosure bunching when they disclose poison pill adoptions for at least three reasons: (1) poison pills can entrench managers or benefit shareholders by enhancing managements' ability negotiate higher premiums or to fend off inadequate offers; (2) The entrenchment role of poison pills has led to significant shareholder activism against poison pills in the last two decades and proxy advisers have adopted voting guidelines that are hostile towards poison pill adoptions; (3) press coverage of poison pills is almost always, if not always, in a negative or at best a neutral tone (Akyol and Carroll 2006; Bizjak and Marquette 1998; Gerstein, Faris, Drewry 2009; Sidel 2004; Heron and Lie 2006; Lindstrom 2005; Gillan and Starks 2007; RiskMetrics Group 2009; Galuszka 1999; Barr 2001; Voss 2011;).[5,6] In this paper, I presume managers have incentives to engage in disclosure bunching because poison pill adoptions may be viewed negatively by stakeholders.

To examine the impact of real-time reporting on strategic disclosure bunching, I collect all news disclosures in a five-day window centered on the disclosure of poison pill adoptions in my sample. I compare the bunching of within-firm news disclosure around

[5] For instance, RiskMetrics Group recommends investors to withhold or vote against the entire board of directors if the board adopts a poison pill without shareholder approval. In 2009, RiskMetrics Group revised its guideline to include an examination of existing poison pills every three years.

[6] Prior studies find mixed evidence on market reaction to poison pill adoptions (Malatesta and Walkling 1988; Ryngaert 1988; Brickley, Coles, and Terry 1994; Sikes, Tian and Wilson 2010). However, most prior event studies may not be very informative about investors' perception of poison pill adoptions because of confounding events (other factors that can result in mixed results include expectation of takeover risk and existence of a shadow pill). Sikes, Tian and Wilson (2010) find that market reaction to poison pill adoptions is significantly negative after excluding confounding events.

the disclosure of poison pill adoptions in the discrete-time versus real-time reporting regime to study whether managers engage in less strategic disclosure bunching under the real-time reporting regime. Overall, I do not find a significant reduction of strategic disclosure bunching around the disclosure of poison pill adoptions under the real-time reporting regime. However, for the disclosure of in-play pill adoptions, where managers' discretion to time the adoptions is restricted, I do find a significant reduction of disclosure bunching under the real-time reporting regime. Moreover, to the extent that the disclosure of in-play pills is bunched with other news, the bunched events are more likely to be the ones over which managers have control. This suggests managers are likely to time the disclosure of other news events to achieve disclosure bunching instead of timing the in-play pill adoptions. Overall, these findings suggest real-time reporting is not (is) effective at reducing strategic disclosure when managers have (limited) control over the timing of information events.

I supplement the disclosure tests with a test of market consensus on the implication of poison pill adoption disclosures. The SEC asserts that the 8-K amendments will enhance "the ability of markets to respond to corporate events" as a result of improved transparency. [7] If real-time reporting requirements improve investors' capability to interpret corporate disclosures, then I expect less divergence of investor opinion around corporate disclosures under the real-time reporting regime. I use unexpected volume to proxy for divergence of investor opinion (Garfinkel 2009). I find no significant reduction of unexpected volume for regular poison pills under the real-time reporting regime. On the other hand, for in-play pills where managers' opportunity to time the adoptions is limited, there is a significant reduction of unexpected volume around the adoption announcement under the real-time reporting regime. Consistent with the disclosure bunching tests, these findings also suggest that real-time reporting is

[7] SEC Financial Reporting Release No. 33-8400

effective at deterring strategic disclosure only when managers' ability to time information events is constrained.

Last, I examine whether disclosure bunching has pricing consequences. I test the cumulative abnormal return over the five day window centered on the first day of poison pill adoption disclosures. My results suggest disclosure bunching dampens the negative market reaction of poison pill adoption disclosures in both the discrete-time and real-time reporting regime.

To the best of my knowledge, my study is the first to provide empirical evidence on whether moving towards a real-time reporting regime limits strategic disclosures by management and improves disclosure transparency for investors. The finding of this paper will inform standard setters about the underlying limitations and merits of real-time reporting requirements.

CHAPTER 2 LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1 Related literature

Managerial disclosure behavior has been studied in both theoretical and empirical accounting literature. Applying the principle of adverse selection, the unraveling result establishes that managers will engage in full disclosure (i.e. managers will disclose all of their private information) if (1) information acquisition and disclosure is costless, (2) managers are known to posses the information, (3) all investors interpret firms' disclosure in the same manner, (4) there is no uncertainty as to how investors will interpret firms' disclosure, (5) managers can only make truthful disclosure (i.e. cheap talk is not allowed), and (6) managers cannot commit ex-ante to a certain disclosure policy (Milgrom 1981; Grossman 1981). The intuition behind the unraveling result is that investors perceive no disclosure as an unfavorable signal about a firm's future prospects. Thus, firms with private information that exceeds investors' prior expectations will disclose their information. This in turn lowers investors' expectations about non-disclosing firms and induces firms that exceed the lowered expectations to disclose. This process continues until full disclosure results.

The unraveling result provides a theoretical foundation for explaining firms' lack of full disclosure. Specifically, violation of any of the assumptions in the unraveling result can lead to less than full disclosure. For example, costly information, uncertainty in information endowment (i.e. uncertainty in whether managers are informed), cheap talk, or uncertainty in investors' response can all lead to less than full disclosure (e.g. Verrecchia 1983; Darrough and Stoughton 1990; Dye 1985; Jung and Kwon 1988; Crawford and Sobel 1982; Dutta and Trueman 2002; Suijs 2007). A common assumption underlying these studies is that information arrives (i.e. occurrence of news-triggering events) exogenously. That is, managers are assumed to have control over disclosures only

after information is acquired but no control over information acquisition.[8] However, in reality, information acquisition can be endogenous, which means managers can control the timing of news-triggering events.

In another set of theoretical studies, information acquisition/arrival is assumed to be endogenous. Under such an assumption, managers are predicted to use their control over information acquisition (i.e. news-triggering events) to engage in strategic disclosure. For instance, Matthews and Postlewaite (1985) examine managerial disclosure under an effective mandatory disclosure regime. They predict managers will not test, and therefore will not disclose product quality, when they prefer customers to be uninformed. Shavell (1994) extends Matthews and Postlewaite (1985) and also find that managers manipulate disclosures by exercising control over information acquisition. Building on the idea that information acquisition can be endogenous, Dye (2010) models managers' disclosure choices in a real-time reporting regime. Theoretically, he demonstrates that managers will strategically time information events to achieve disclosure bunching under the real-time reporting regime.[9] He concludes real-time reporting will not achieve the desired impact on strategic disclosure as the SEC expects if managers are still able to time news-triggering events. Overall, these theoretical studies

[8] Studies on uncertainty in information endowment assume managers are informed with probability P. In these studies, information arrives exogenously. Managers do not exercise control over the arrival of information.

[9] Dye (2010) does not deal with information concealment. The research question examined in this paper is partially motivated by Dye (2010). However managers' objective for engaging in disclosure bunching in my setting is different. In Dye (2010), managers are uncertain about investors' response to information that the firm has yet to acquire and disclose. Managers' disclosure decision is driven by a trade-off of risk premium demanded by investors versus managers' own risk aversion. Information events are grouped into events that managers have discretion versus events that managers do not have discretion over the timing of occurrence. In the beginning, risk premium demanded by investors is high. Thus, the benefit of disclosure is high. However, managers are less willing to disclose due to their own risk aversion. As time pass by, managers become more risk neutral as they unwind their stakes in the firm. At the same time, risk premium demanded by investors decreases as investors learn more about the company through disclosure of news events that managers do not have control over. These two opposing forces meet at the equilibrium and managers bunch all of the events that they have discretion over and disclose them at once.

demonstrate that managers can use their control over the timing of news-triggering events to engage in strategic timing of disclosure. However, there is limited empirical evidence on this issue.

In the empirical literature, strategic disclosure studies can be grouped into three distinct categories: (1) strategic disclosure in which managers manipulate the *content* of the disclosure (e.g. Baginski, Hassell and Hillison 2000; Schrand and Walther 2000; Wasley and Wu 2006), (2) strategic disclosure in which managers manipulate the *timing* of the disclosure (e.g. Aboody and Kasznik 2000; Cheng and Lo 2006), (3) strategic disclosure in which managers manipulate the *characteristics* (i.e. duration/horizon, format, frequency) of the disclosure (e.g. Miller 2002; Files, Swanson, and Tse 2009).[10] The bunching of within-firm news disclosure examined in this study is most closely related to the second type of strategic disclosure – manipulation of disclosure timing. Areas of strategic timing of disclosure examined in prior literature include timeliness of news disclosure conditional on whether the news is good or bad (e.g. Skinner 1994, Kothari et al 2009), timing of disclosure to maximize managers' personal payoff (e.g. Cheng and Lo 2006), timing of bad news disclosure to occur soon after other firms' bad news disclosure (e.g. Tse and Tucker 2010), and coordinating the disclosure of within-firm news (e.g. Soffer, Thiagarajan and Walther 2000, Lansford 2006, Sharp 2007). Essentially, disclosure bunching is a special type of disclosure coordination. However, unlike prior studies of disclosure coordination which examines the packaging of one type of news with another type of news (e.g. management forecast and earnings announcement), this study examines the bunching of all types of firm-level news around the disclosure of an underlying news event -- poison pill adoptions.

[10] The list is not exclusive. For instance, studies on earnings management and pro forma disclosure can also be regarded as research in strategic content disclosure in large (e.g. Jones 1991; Burgstahler and Dichev 1997; Kasznik 1999; Roychowdhury 2006; Cohen, Dye and Lys 2007; Lougee and Marquardt 2004; Bhattacharya, Black, Christensen and Mergenthaler 2007).

Evidence from prior literature suggests managers can engage in different types of strategic disclosure bunching to mitigate the negative impact of a bad news disclosure. Limited attention theory suggests managers can bunch the disclosure of poison pill adoptions with other disclosures that contain multiple information signals (i.e. 10K/10Q) to obfuscate information and to reduce the negative impact of the bad news disclosures (e.g. Kahneman 1973; Hirshleifer and Teoh 2003; Files, Swanson, and Tse 2009; Dellavigna and Pollet 2009). Evidence from archival research and survey indicate managers have incentives to package the disclosure of a bad news with other good news to soften the blow of the bad news disclosure (e.g. Rogers and Van Buskirk 2009; Lansford 2006; Graham, Harvey, and Rajgopal 2005). Lastly, findings from archival and experimental research suggest managers can also engage in disclosure big bath (i.e. bunch the disclosures of multiple pieces of bad news) to reduce the total negative market reaction and mitigate the negative impact of individual bad news (e.g. Kasznik and Lev 1995; Libby and Tan 1999; Richardson, Teoh and Wysocki 2004). There is no prior evidence suggesting which type of disclosure bunching is more prevalent. More importantly, there is no reason to believe real-time reporting has a differential impact on these different types of disclosure bunching. Thus, I do not develop separate hypotheses for each type of disclosure bunching.

Finally, studies on disclosure frequency are also related to the present study. One direct consequence of real-time reporting is an increase in disclosure frequency. Bhojraj and Libby (2005) use experiments to examine the impact of disclosure frequency on managerial myopia. They conclude that in general disclosure frequency increases managerial myopia. Butler, Kraft, and Weiss (2007) examine the impact of disclosure frequency on timeliness of earnings. They argue an increase in disclosure frequency may not increase timeliness of earnings because an increase in disclosure frequency can affect intermediaries' incentives to gather information and managers' incentives to issue

voluntary disclosures. They find timeliness of earnings improves only for firms that voluntarily switched to interim reporting. For mandatory adopters, timeliness of earnings did not increase. Fu, Kraft, and Zhang (2011) examine the impact of disclosure frequency on information asymmetry and cost of equity. They find that interim reporting reduces information asymmetry and cost of equity. Van Buskirk (2011) uses monthly sales disclosures from the retail industry to examine whether disclosure frequency reduces information asymmetry. He finds no evidence that disclosure frequency reduces information asymmetry. Overall, these studies provide inconsistent evidence on the benefits of an increase in disclosure frequency.

2.2 Background and hypothesis development

The SEC's support for real-time disclosure can be traced back to the 1990s. In his speech at the 1996 AICPA National Conference, former SEC Commissioner Steven M.H. Wallman suggested that "over time we will need to develop a system that fills the need for timely --and ultimately real-time -- financial information." In the last decade, speeches made by numerous SEC commissioners continue to support real-time disclosure. For instance, commissioner Troy A. Paredes stated that real-time reporting "should lead to more transparency and thus provide the opportunity for better decision making by investors." Cynthia A. Glassman, former SEC commissioner, asserted that real-time disclosure can enhance "financial transparency on both the regulatory and enforcement fronts."

In 2002, SOX Section 409 formally established a requirement for real-time disclosure. Specifically, it requires companies to disclose any "material changes in the financial condition or operations" of the companies "on a rapid and current basis." In response to this requirement, the SEC amended the disclosure requirement for Form 8-K in 2004. Form 8-K, also called "current report," was created in 1936 by the SEC in

response to criticisms that the SEC's disclosure system did not provide timely disclosure of material events that occur between quarterly financial statements. As initially adopted, the filing deadline for Form 8-K was within 10 days of the end of any month during which a reportable event occurs. That means if a reportable event occurs on the first day of a month, the company does not have to file a Form 8-K until 40 days later. Recognizing that such a long time lag may delay the disclosure of material events, in 1977 the SEC shortened the filing deadline for Form 8-Ks to 5 or 15 days for *required 8-K disclosures*.[11] The amendments in 1977 created the general structure of Form 8-K that existed before the amendments in 2004.[12] On August 23, 2004, the new 8-K amendments became effective. The new 8-K amendments expanded the list of required reportable items and shortened the filing deadline to be within 4 business days after a triggering event. Text C1 provides a list of the required reportable news events. In this list, reportable events that were added under the 2004 amendment are italicized.

According to the SEC, the new amendments "are responsive to the "Real Time Issuer Disclosure" mandated in Section 409 of the Sarbanes-Oxley Act of 2002." In its report *Toward Greater Transparency*, the SEC asserts that real-time reporting "would improve transparency for all users." In the proposed 8-K amendments, the SEC asserts "more prompt disclosure by companies of significant events should reduce the opportunities for deception and manipulation."[13] In the final 8-K amendments, the SEC claims real-time reporting would reassure investors "that they are making investment

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[11] Specifically, auditor changes must be filed within 5 business days. All other *required disclosures* must be filed within 15 calendars days. If an event is not required to be filed under 8-K, but firms deem it to be material, then firms can file an 8-K under the voluntary item (i.e. item 5 before the amendment, item 8 after the amendment). There is no filing deadline for *voluntary disclosures* but prompt disclosure is encouraged. [SEC Financial Reporting Release No. 33-8106 and 33-8400]

[12] Following 1977, the SEC amended Form 8-K at various times to add or delete reportable items, but no significant changes were implemented.

[13] SEC Financial Reporting Release No. 33-8106.

decisions in a more transparent market."[14] These assertions indicate the SEC expects real-time reporting will induce firms to disclose value relevant information in a more timely manner and reduce clustering of disclosures. However, theoretical studies suggest that managers can manipulate firms' disclosure timing as long as they have control over the timing of news-triggering events (Matthews and Postlewaite 1985, Shavell 1994, Dye 2010). Dye also comments on real-time reporting as follows: "Too often, regulators predict that people will react in naively predictable ways in response to change in financial reporting and disclosure regulations……the adoption of innovative regulations can have surprisingly different consequences from those anticipated."[15]

To test whether real-time reporting reduces strategic disclosure bunching, I examine firms' disclosure behavior around the disclosure of poison pill adoptions in a discrete-time versus real-time reporting regime. Figure B1 Panel A depicts how managers can achieve disclosure bunching for regular poison pills and in-play pills under both regimes. In the discrete-time reporting regime (i.e. before the new 8-K amendment), firms were not required to report poison pill adoptions on 8-Ks. Instead, the disclosure of poison pill adoptions was required to be reported in periodic reports (i.e. 10-Ks, 10-Qs).[16] Although firms often voluntarily disclosed poison pill adoptions in 8-Ks or in press releases, there was no filing deadline for voluntary disclosures. Therefore, managers had

[14] SEC Financial Reporting Release No. 33-8400.

[15] http://insight.kellogg.northwestern.edu/index.php/m/article/the_financial_reporting_fast_lane/

[16] Firms that adopt poison pills are also required to file Form 8-A to register the share purchase rights. There are two forms under Form 8-A. They are 8-A 12(b) and 8-A 12(g). For Form 8-A 12(g), if a disclosure is voluntary then there is no filing deadline. If a disclosure is required, then firms have to file the form within 120 days of the next fiscal year. For instance, if a firm adopts a poison pill in fiscal year 2001, then the firm does not have to file Form 8-A 12 (g) until the end of the 4th month in fiscal year 2002. For Form 8-A 12(b), there is no specific filing deadline. In addition, firms are only required to file Form 8-A 12 (b) when a security is required to be listed separately on the exchanges (i.e. NYSE, NASDAQ). Rights attached to poison pill adoptions are not required to be listed separately unless the poison pill has been triggered. Overall, the restrictions applied to Form 8-A filing deadline are very loose when firms adopt poison pills. Thus, I choose not to discuss the filing of Form 8-A in detail.

some discretion over when to disclose poison pill adoptions in the discrete-time reporting regime. In addition, poison pills can be adopted without a shareholder vote. Managers can time poison pill adoptions so that their disclosures coincide with other news.[17] Thus, in the discrete-time reporting regime if managers wanted to engage in disclosure bunching around the disclosure of poison pill adoptions they had three options: (1) time the adoption of poison pills, (2) time the disclosure of poison pills after their adoptions, (3) time the disclosure of other news events. In this paper, I label the other news events that are bunched with the disclosure of poison pill adoptions as the "bunched events".

Under the real-time reporting regime (i.e. after the 2004 8-K amendment), firms have to report poison pills in 8-Ks within four business days after the adoptions. Thus, under the real-time reporting regime, if managers want to engage in disclosure bunching around the disclosure of poison pill adoptions they can: (1) time the adoption of poison pills, or (2) time the disclosure of other news events (i.e. bunched events). Under the real-time reporting regime, observing a reduction of disclosure bunching around poison pill adoptions would be consistent with the SEC's assertion that real-time reporting requirements improve disclosure transparency. Nevertheless, managers can time the adoption of poison pills to achieve disclosure bunching in both regimes. If the timing of information events represents a key channel through which managers can engage in disclosure bunching, then I do not expect to observe a reduction in disclosure bunching under the real-time reporting regime. The above discussion leads to the first hypothesis stated in the null form:

[17] The general adoption procedure is: (1) managers decide to adopt a poison pill, (2) managers call for a board meeting to adopt the poison pill. The board meeting can be executed through a conference call. (3) a Rights Agent (a financial institution) signs the agreement. No SEC filings are required until the poison pill is formally adopted by the board.

H1: There is no reduction in disclosure bunching associated with poison pill adoptions under a real-time reporting regime compared to a discrete-time reporting regime.

In-play pills are poison pills that are adopted to fend off specific takeover attempts. Managers have relatively little discretion over the timing of their adoptions because target managers have little control over the takeover attempts. This limited discretion reduces managers' ability to strategically time the adoption of in-play pills. Under a discrete-time reporting regime, if managers wanted to engage in disclosure bunching around the disclosure of in-play pill adoptions they could either: (1) time the disclosure of poison pills after their adoptions or (2) time the disclosure of bunched events. Under the real-time reporting regime, managers can only time the disclosure of bunched events to achieve disclosure bunching. Moreover, the availability of other news events is limited under the real-time reporting regime due to the shortened disclosure horizon and the expanded list of reportable news events that are subject to the new 8-K amendment. Consequently, I expect real-time reporting to be more effective at reducing disclosure bunching for in-play pill adoptions.

Prior disclosure theory predicts that the manager of a firm that faces takeover threats is more likely to issue voluntary disclosures to show the firm is worth more than what the potential acquirers are offering (Healy and Palepu 2001).[18] If managers are more likely to disclose voluntary information when they are faced with takeover threats, then I expect to observe a natural increase of news disclosures around the adoption of in-play pills. This may work against my prediction. Collectively, the above discussion leads to the following prediction:

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[18] Using UK data, Brennan (1999) finds that target managers are more likely to issue profit forecasts in a corporate control contest. Currently, there is no study on U.S. data examining whether managers are more likely to issue voluntary disclosures when their firms are faced with takeover threat. Nonetheless, there are studies indicating that managers engage in income increasing earnings management during proxy contests (Collins and DeAngelo 1990; DeAngelo 1988).

H2: The disclosures of in-play pill adoptions are less likely to be bunched with other news under a real-time reporting regime compared to a discrete-time reporting regime.

I also use in-play pills as the underlying news event to examine whether real-time reporting affects the nature of the bunched events (i.e. news events other than poison pill adoptions) in a predictable manner. Under the real-time reporting regime, managers can only time the disclosure of other news events to achieve disclosure bunching for in-play pills. Disclosure of other news events can be timed when: (1) they are not subject to the 8-K reporting requirement or (2) managers can time their occurrence. For events that are not subject to the 8-K reporting, managers have control over the timing of disclosure after their occurrence. For events that managers can time their occurrence, managers have control over the timing their occurrence. Thus, in this paper, I label these events as events over which managers have control. If a news event is subject to the 8-K reporting requirement and managers cannot time its occurrence, then managers' ability to use it to achieve disclosure bunching is very limited. The above discussion leads to the following prediction:

H3: Given that the disclosures of poison pills are bunched with other disclosures, the bunched events around in-play pills are more likely to be events over which managers have control under a real-time reporting regime compared to a discrete-time reporting regime.

The SEC asserts that real-time reporting will enhance investors' ability to assess corporate disclosures as a result of improved disclosure transparency. More transparent disclosure sends a more salient information signal to the market. A more salient information signal will lead to a more common understanding among investors about the implication of the disclosure. Thus, higher disclosure transparency can lead to lower divergence of investor opinion.

If real-time reporting reduces strategic disclosure and improves disclosure transparency, then I expect to observe lower divergence of investor opinion around the disclosure of regular poison pill adoptions under the real-time reporting regime. On the other hand, if managers continue to engage in strategic disclosure under the real-time reporting regime then I expect to observe no reduction in divergence of investor opinion. This leads to the following hypothesis:

H4: Divergence of investor opinion around the disclosure of poison pill adoptions does not decrease under a real-time reporting regime relative to a discrete-time reporting regime.

Hypothesis 2 predicts real-time reporting is more effective at reducing disclosure bunching for in-play pills. If this is true, then real-time reporting is expected to be more effective at reducing divergence of investor opinion around the disclosure of in-play pill adoptions. This leads to the following prediction:

H5: Divergence of investor opinion around the disclosures of in-play pill adoptions decreases under a real-time reporting regime relative to a discrete-time reporting regime.

CHAPTER 3 DATA

3.1 Sample selection

I begin with a sample of poison pill adoptions provided by SharkRepellent (FactSet Research Systems Inc.). The sample covers poison pill adoptions that occurred from January 2000 to September 2009. I limit the sample to observations with available Compustat data to calculate the log of market value of equity.[19] I also exclude poison pills that are adopted to protect firms' deferred tax assets and poison pills that are renewed within a week of the expiration date of a firm's previous poison pill. Inclusion of these poison pills does not change the conclusions of my tests. However, I exclude those poison pills for the following reasons.

First, per Section 382 of the Internal Revenue Code of 1986, net operating loss (NOLs) can be carried back two years and/or carried forward up to twenty years. A firm's ability to utilize NOL carry forwards is limited if it experiences an ownership change under Section 382. As a result, firms may choose to adopt tax poison pills to prevent a technical ownership change to protect unused NOLs. The stated purpose for tax poison pill adoptions is very different from other poison pills. As long as managers believe that the stated purpose of preserving the deferred tax assets is legitimate, they may have less incentive to engage in strategic disclosure bunching.[20] More importantly, 95% of the tax pills in my sample are adopted under the real time reporting regime when preserving NOLs became more relevant during the 2008-2009 market meltdown. This

[19] I made this choice because the log of market value of equity is frequently used as a proxy for size and size is a control variable that appears in almost every empirical disclosure study.

[20] This is not to say that the disclosure of tax poison pill adoptions do not involve strategic disclosure. In fact, if the underlying purpose of a tax poison pill adoption is not to preserve tax assets but to entrench management then stating that the purpose of the adoption is to preserve deferred tax assets is a form of strategic disclosure. However, I have no reason to believe this form of strategic disclosure is related to real time reporting requirements. Thus, such strategic disclosure behavior is not examined in this paper.

disproportional distribution of tax poison pills in the real-time reporting regime could bias my result when examining the impact of real time reporting requirements. Thus, tax pills are excluded from the sample.

Second, investors may expect firms to renew their poison pills when a previous poison pill expires. This expectation can reduce the negative market reaction for renewals and diminish the expected benefits of strategic disclosure bunching. As a result, renewals can change managers' incentive to engage in strategic disclosure. Therefore, I also exclude the renewal of poison pills that occur within a week of the expiration date of the previous poison pill. Table A2 presents the sample selection process in detail. In addition to excluding tax poison pills and renewed poison pills, I also exclude duplicate observations, observations that are not poison pill adoptions, and observations for which I cannot find the poison pill adoption record. After these exclusions, 1097 observations remain in my base sample.

For the observations in my base sample, I search through Factiva, LexisNexis, and EDGAR to determine when each poison pill adoption is first disclosed. If a poison pill adoption is first disclosed in a 10-K/10-Q or if a 10-K/10-Q is filed around a five-day trading window (-2, 2) centered on the first day of the poison pill adoption disclosure, then I code the concurrent events as 10-K or 10-Q. Otherwise, I collect all available public disclosures of significant events from Factiva (i.e. Dow Jones News Service, PR Wire, Business Wire), LexisNexis, and EDGAR around a five trading day window (-2, 2) centered on the first day of a poison pill adoption disclosure. I search through those sources by firm name and ticker symbol. Articles written by a third party are excluded unless they contain previously unreleased information quoted from management. If a disclosure of a poison pill adoption is bunched with multiple news events I record all of the news events. This recording method makes it easier to categorize events for later tests. I also exclude duplicate disclosures of the same event. If a news event is identified

from EDGAR filings, then I also check on Factiva and LexisNexis to ensure the event was not disclosed in a press release at an earlier date, which is outside of the five day window.[21] A poison pill disclosure is coded as a bunched disclosure if there are any other concurrent news events disclosed around the five day window (-2, 2).

Next, I search through Factiva and LexisNexis to identify in-play pills. In-play pills are poison pills that are adopted in response to one or more takeover threats. To determine which poison pills are in-play pills, I search for indications of any offer, or large stock accumulation with the purpose of an eventual takeover in the three months prior to a poison pill adoption. In addition, if a firm discloses that the adoption of a poison pill is in response to a specific takeover attempt or in preparation of evaluating strategic alternatives (e.g. sale, restructuring, and privatization), then I also consider the poison pill to be an in-play pill. I use the same guidelines to collect disclosures around in-play pills as described above for regular poison pills except I do not collect disclosures of firms' response to specific takeover attempts (e.g. news about evaluating offers, rejecting offers).

To execute my research design I need to classify events into those over which managers have control versus those over which managers do not have control. To reduce subjectivity, a panel of judges formed by nine PhD students at the University of Iowa performed the categorization of the collected news events.[22] A list of the news events and a copy of the instruction are provided to each judge. The judges are asked to perform the categorization independently. The instruction gives two criteria that judges need to use to make the categorization: (1) whether managers have control over the timing of a news event, (2) whether a news event is subject to the 8-K reporting requirement. The judges

[21] For instance, firms sometimes announce management change or board change in press releases before they file 8-Ks for these events.

[22] I thank Ciao-Wei Chen, Byung Hun Chung, Matthew Glendening, Brad Hepfer, Phil Quinn, Zhejia Ling, Mohamad Mazboudi, Steve Savoy, and Michelle Shimek for their help with classifying the news events.

are asked to label a news event that satisfies either of these two criteria as an event over which managers have control. Otherwise, a news event is labeled as an event over which managers do not have control. If one is unsure how to classify the event then he/she is instructed to label the event as "indeterminable". Following this process, each judge groups the collected news events into three categories: (1) those over which managers are deemed to have control, (2) those over which managers are deemed to have no control, (3) indeterminable. I collect the classifications from each judge and code each event based on the majority opinion.

For each observation of a poison pill adoption disclosure, it may be bunched with multiple other news events, which can include a mixture of news events over which managers have or do not have control. In these cases, as long as one of the bunched events is an event that managers are deemed to have control, then the poison pill adoption disclosure is considered to be bunched with events over which managers have control.

Finally, to explore what type of disclosure bunching is more prevalent, the panel of judges is also asked to categorize each bunched event into good news, bad news, or uncertain news. The categorization is based on the judges' knowledge about prior event studies of the average market reaction or their intuition about the implication of an event on firm value. I also code each event following the majority opinion. Table A1 Panel A provides a complete description of the classification for each type of individual news event in my sample.

A poison pill adoption disclosure may be bunched with multiple other disclosures, which can include a mixture of good, bad and uncertain news. To determine whether each poison pill adoption disclosure is bunched with good, bad or uncertain news, I first collect the categorization from the judges. Next, I categorize the disclosure of a poison pill adoption as bunched with good/bad/uncertain news if it is only bunched with good/bad/uncertain news respectively. I code the disclosure of a poison pill adoption as

bunched with good news if it is bunched with a mixture of both good news and uncertain news. A disclosure is coded as bunched with uncertain news if it is bunched with a mixture of both good and bad news. See Table A1 Panel B for further details.

3.2 Descriptive statistics

Panel A of Table A3 provides descriptive statistics for the hand collected variables. For regular poison pills, the mean (median) number of calendar days between the adoption of a poison pill and the first disclosure of the poison pill (thereafter, disclosure time lag) under the discrete-time reporting regime is 5.11 (1) days. Under the real-time reporting regime the mean (median) is 1.64 (1) days. For in-play pills, the mean (median) disclosure time lag under the discrete-time is 1.77 (1). The mean (median) under the real-time reporting regime is 1.17 (1). These results indicate that requiring firms to file under 8-K within 4 business days of adoption did in fact reduce the mean disclosure time lag for poison pill adoption. Nevertheless, the sample median is the same in the discrete-time versus real-time reporting regime. In addition, Panel A of Table A3 shows 75% of the sample has disclosure time lag less than 4 days even in the discrete-time reporting regime.

On the surface, these descriptive statistics seem to suggest real-time reporting does not speed up the disclosure of poison pill adoptions, and thus, does not deter strategic disclosure. However, these descriptive statistics by themselves cannot reveal whether real-time reporting is effective at deterring strategic disclosure bunching or not. After all, real-time reporting does not affect managers' ability to time information events. If having control over the timing of information events is a critical determinant of strategic disclosure then this aspect of managerial discretion will affect the effectiveness of real-time reporting. In the context of this paper, if managers' ability to time poison pill adoption is critical in achieving disclosure bunching then real-time reporting should (not)

be effective at deterring strategic disclosure bunching for in-play (regular) poison pills. In addition, real-time reporting reduces the availability of other news events because of the shortened filing deadline and the expanded list of reportable events. This reduction can also constrain managers' ability to engage in disclosure bunching regardless of what impact real-time reporting may have on the disclosure of the poison pill adoptions. For example, even if poison pills are reported within one day of their adoptions under either regime, there might still be significantly less disclosure bunching under the real-time reporting regime because of the constraints placed on the other reportable events.

CHAPTER 4 RESULTS

4.1 Research design and empirical results for disclosure tests

To test Hypothesis 1, I first plot the distribution of disclosure bunching for both regular poison pills and in-play pills under the discrete-time reporting regime vs. the real-time reporting regime. Figure B2 presents a plot of the bunching frequency under both regimes. There is no noticeable change in the frequency of disclosure bunching for regular poison pills across the two regimes. In contrast, the frequency of disclosure bunching for in-play pills shows a visible decrease under the real-time reporting regime. Next, I use Chi-square tests to examine whether the bunching frequency is different in those two regimes. The P-value from a Chi-Square test of equality for the bunching frequency in the discrete versus real-time reporting regime for regular poison pills is 0.9232, which indicates there is no significant reduction of disclosure bunching under the real time reporting regime. In contrast, the P-value from a Chi-Square test of equality for the bunching frequency in the discrete versus real-time reporting regime for in-play pills is 0.0076, which indicates there is a significant reduction of disclosure bunching for in-play pills under the real time reporting regime.

The Chi-square test is univariate. It does not control for factors that may influence disclosure frequency which can give rise to disclosure bunching. Next, I use the following multivariate logit regression to test Hypothesis 1 and 2:

$$BUNCH=\beta_0 + \beta_1 (Real\_Time\_Dummy) + \beta_2 (In\_Play\_Pills) + \beta_3 (Real\_Time\_Dummy * In\_Play\_Pills) + \beta_4 (Firm\_Size) + \beta_5 (ROA) + \beta_6 (Loss\_Dummy) + \beta_7 (MTB) + \beta_8 (Analyst\_Coverage) + \beta_9 (Forecast\_Dispersion) + \beta_{10} (Return\_Volatility) + \beta_{11} (Trend) + \varepsilon \quad (1)$$

BUNCH is a dummy variable that equals one if the disclosure of a poison pill adoption is bunched with other news. *Real_Time_Dummy* is the primary variable of

interest. It is a dummy variable that equals one for poison pill adoptions that occur after August 23, 2004, the effective date for the new 8-K amendments, and zero otherwise. If real-time reporting deters strategic disclosures by management, then I expect to observe less strategic disclosure bunching around the disclosure of poison pill adoptions under the real-time reporting regime. Consequently, β_1 will be negative and significant. If real-time reporting does not reduce strategic disclosure bunching, then β_1 will be insignificantly different from zero. *In_Play_Pills* is a dummy variable that equals one for in-play pills, and zero otherwise. The coefficient for the interaction of *Real_Time_Dummy* and *In_Play_Pills* (β_3) captures the incremental impact of the real-time reporting regime on disclosure bunching around the disclosures of in-play pill adoptions (H2). I expect β_3 to be negative because managers' discretion to time the in-play pill adoptions, the disclosure of the adoptions and the disclosure of other news is more restricted under the real-time reporting regime.

The remaining variables are controls that proxy for the demand or supply of firms' disclosures. Disclosure bunching can arise naturally when a firm discloses more frequently. If higher demand or supply of a firm's disclosure can lead to higher disclosure frequency then this may also lead to higher frequency of disclosure bunching. I use *Firm_Size* to control for the availability of other news about a firm. It is measured as the natural logarithm of the market value of equity (e.g. Lev and Penman 1990, Schrand and Walther 2000, Wasley and Wu 2006). I expect larger firms will have higher frequencies of news disclosures. Thus, the predicted sign for *Firm_Size* is positive. *ROA* is return on assets measured as pre-tax income divided by total assets. *Loss_Dummy* equals one if pre-tax income is negative and zero otherwise. *ROA* and *Loss_Dummy* control for the impact of performance on disclosure frequencies. Findings from prior research suggest firms are likely to increase disclosures when they incur losses (e.g. Kasznik and Lev 1995, Chen, DeFond and Park 2002). Thus, the predicted sign for *Loss_Dummy* is

positive. There is no consistent evidence on whether ROA has a positive or negative association with disclosure frequency. Thus, I do not have a directional prediction for ROA. *MTB* is included to capture growth prospects. *Analyst_ Coverage* and *Forecast_Dispersion* capture the quantity and quality of firms' information supplied by analysts. Prior literature offers two perspectives on the association between analyst coverage and firms' disclosures. One perspective is that firms' voluntary disclosure decreases the need for analysts. Under this perspective, analyst coverage is predicted to have a negative relation with disclosure frequency. Another perspective is firms that provide more voluntary disclosure can attract higher analyst following. If this is true, analyst coverage should be positively associated with disclosure frequency. Extant literature provides mixed evidence on these two perspectives. Thus, I do not have a directional prediction for the coefficient on *Analyst_ Coverage*. Furthermore, high analyst forecast dispersion may reflect a high demand for firms' disclosures. This can lead to a positive relation between analyst forecast dispersion and disclosure frequency. However, analyst forecast dispersion is also endogenously affected by analyst following. Thus, I also do not have a directional prediction for the coefficient on *Forecast_Dispersion* (Bhushan1989; Arya and Mittendorf 2007; Cheng, DeFond, Park 2002, Beyer, Cohen, Lys and Walther 2010). *Return_Volatility* is included to capture uncertainty about expected future cash flows. Following Cheng et al. 2002, it is measured as the volatility of returns in the past 250 days from event day 0.[23] Evidence from prior literature suggests that return volatility and disclosure frequency are positively related because greater uncertainty about future cash flows can lead to greater demand for information (e.g. Cheng et al. 2002). Thus, the coefficient for *Return_Volatility* (β_{10}) is predicted to be positive. *Trend* is the total number of news items for a firm from Factiva over a one-year window centered on the first day of a poison pill adoption disclosure. It is used to control

[23] Firms with less than 100 observations of daily returns are excluded.

for the total amount of news released over time for the sample firms. The coefficient is predicted to be positive.

Table A3 Panel B presents descriptive statistics for control variables used in the logit tests. The mean value for *Loss_Dummy* is 0.45 indicating quarterly pre-tax income is negative for almost half of the sample. Mean (median) of *Firm_Size* is 5.90 (5.85) indicating my sample is not biased towards small nor big firms. Mean (median) of *MTB* is 3.12 (1.98). This indicates the distribution for *MTB* is right skewed in my sample.

Table A4 reports the results for the multivariate tests of Hypothesis 1 and Hypothesis 2. The coefficient for *Real_Time_Dummy* is insignificant indicating there is no significant reduction of disclosure bunching around the disclosure of poison pill adoptions under the real-time reporting regime. In contrast, the coefficient for *Real_Time_Dummy * In_Play_Pills* is negative and significant as expected. This indicates real-time reporting regime is more effective in reducing disclosure bunching where managers' discretion to time the adoption of poison pills is more constrained. The coefficients for control variables *Firm_Size* and *Return_Volatility* are positive and significant as expected. This implies that larger firms and firms with more volatile returns have higher frequency of disclosures, which can lead to a higher frequency of disclosure clustering (i.e. disclosure bunching). Overall, the results from Table A4 suggest real-time reporting will not deter strategic disclosure bunching if managers can time the underlying information events (e.g. poison pill adoptions in this setting). However, real-time reporting is more effective at reducing strategic disclosure bunching when managers' control over the timing of information events is restricted (e.g. in-play pill adoptions in this setting).

The descriptive statistics in Panel A of Table A3 show that among the observations with bunched disclosures, observations that are bunched with good news occur most frequently followed by uncertain news. Given the high frequency of good

news and uncertain news bunching, Table A5 replicates the tests in Table A4 with different dependent variables: *BUNCH_GOOD_NEWS* and *BUNCH_UNCERTAIN_NEWS. BUNCH_GOOD_NEWS (BUNCH_ UNCERTAIN_NEWS)* is a dummy variable that equals one for observations that are bunched with other good (uncertain) news, and zero otherwise. Table A5 Panel A (B) reports the results when *BUNCH_ GOOD_NEWS (BUNCH_ UNCERTAIN_NEWS*) is the dependent variable. In Panel B, the coefficient for *Real_Time_Dummy*In_Play_Pills* is negative but not significant at the 10% level. All of the other coefficients for the testing variables are in the predicted direction and significant. Thus, I conclude that the results from Table A5 generally confirm the results from Table A4. My findings are robust to separate examination of good news bunching and uncertain news bunching.

To test whether managers are more likely to use other news events over which they have control to achieve disclosure bunching for in-play pills under the real-time reporting regime (H3), I use only observations with bunched disclosures. I change the dependent variable in equation (2) to a dummy variable (*MGMT_CONTR)* that equals one if an observation is bunched with at least one event over which managers have control, and zero otherwise:

$$MGMT\_CONTR=\beta_0 + \beta_1 (Real\_Time\_Dummy) + \beta_2 (In\_play\_pills) + \beta_3 (Real\_Time\_ Dummy * In\_play\_pills) + \beta_4 (Firm\_Size) + \beta_5 (ROA) + \beta_6 (Loss\_Dummy) + \beta_7 (MTB) + \beta_8 (Analyst\_Coverage) + \beta_9 (Forecast\_Dispersion) + \beta_{10} (Return\_Volatility) + \beta_{11} (Trend) + \varepsilon \quad (2)$$

Table A6 presents the logit test of Hypothesis 3. The coefficient for *Real_Time_Dummy* is insignificant indicating real time reporting requirements do not have a significant impact on the type of bunched events. As expected, the coefficient for *Real_Time_Dummy * In_Play_Pills* is positive and significant. This indicates the bunched events for in-play pills are more likely to be events over which managers have

control. This result suggests that disclosure bunching still occurs under a real time reporting regime when managers have limited discretion over the timing of the underlying news-triggering event, but managers are likely to time the disclosures of other news events to achieve disclosure bunching instead.

In equation (1) and (2) I use interactions to test whether managerial discretion over the timing of information events affects the likelihood of disclosure bunching and the characteristics of bunched events. In comparison to running a separate regression for in-play pills, the interaction approach has two potential limitations. First, it forces the coefficients for the control variables to be the same for both groups. If the controls have different effects on regular poison pills versus in-play pills the estimated coefficients for the interaction terms may be biased. Second, the dummy variable approach constraints the estimated variance to be the same in both groups. Given these limitations, I examine the impact of real time reporting on the likelihood of disclosure bunching and on the type of bunched news for in-play pills in a separate regression. Untabulated results confirm my findings for H2 and H3 are robust to running a separate regression for in-play pills. Specifically, the likelihood of disclosure bunching decreases significantly for in-play pills under the real-time reporting regime (P-value is 0.02). The bunched news for in-play pills under the real time reporting regime are more likely to be events over which managers have control (P-value is 0.03).

4.2 Research design and empirical results for market consensus tests

Hypothesis 4 examines whether real time reporting requirements lead to lower divergence of investor opinion. The market consensus test serves as an alternative to the disclosure test. If real-time reporting results in a more transparent disclosure of poison pill adoptions, then I expect to observe a corresponding reduction in divergence of investor opinion. The advantage of the market consensus tests is that it involves more

objective measurements than the disclosure bunching test. Thus, the market consensus tests are not affected by any potential subjectivity in the data coding process.

Garfinkel (2009) uses a proprietary data set to evaluate commonly used measures for divergence of investor opinion (unexplained volume, bid-ask spread, stock return volatility, and analyst forecast dispersion) from prior literature. He finds that unexplained volume is the best proxy for measuring divergence of investor opinion. Thus, I use two unexplained volume measures to proxy for the divergence of investor opinion. The rationale underlying the volume proxies is that investors' trading behavior reflects their private valuations of a security. An increase in divergence of investors' opinion generates greater trading volume. As a result, trading volume can exist even if prices are efficient or if there is no price change (Kim and Verrecchia 1997, Bailey, Li, Mao and Zhong 2003, Burks 2011).

However, trading volume captures market-wide as well as firm-level liquidity. To adjust for market-wide and firm-level normal volume, I follow a method similar to Garfinkel and Sokobin (2006) and Garfinkel (2009) to calculate my first measure of unexpected volume:

$$\text{UNEXP\_VOL}_i = \left\{\sum_{t=-1}^{1}\left[\left(\frac{Vol_{i,t}}{Shs_{i,t}}\right)_{firm} - \left(\frac{Vol_t}{Shs_t}\right)_{mkt}\right]\right\}/3 - \left\{\sum_{t=-30}^{-60}\left[\left(\frac{Vol_{i,t}}{Shs_{i,t}}\right)_{firm} - \left(\frac{Vol_t}{Shs_t}\right)_{mkt}\right]\right\}/31 \quad (3)$$

Where event date t=0 equals the day when a poison pill adoption is first disclosed. $Vol_{i,t}$ is firm i's volume on day t. $Shs_{i,t}$ is firm i's shares outstanding on day t. The first component adjusts for the normal level of market turnover. The second component adjusts for the firm's normal level of turnover.

The second measure is standardized unexpected volume (*S_UNEXP_VOL*). Similar to Garfinkel and Sokobin (2006) and Garfinkel (2009), I first run the following model over the window (-180, -30):

$$Vol=\beta_0+\beta_1|RET|^{Pos}+\beta_2|RET|^{Neg} \quad (4)$$

$|RET|^{Pos}$ is the absolute value of return when return is positive. $|RET|^{Neg}$ is the absolute value of return when return is negative. Unexpected volume over (-1, 1) is calculated as follows:

$$UNEXP\_VOL_{i,t} = Vol_{i,t} - E[Vol_{i,t}] \quad (5)$$

Where $E[Vol_{i,t}]$ is expected volume approximated by taking the estimated coefficients from regression (4). $UNEXP\_VOL_{i,t}$ is realized volume ($Vol_{i,t}$) minus expected volume ($E[Vol_{i,t}]$). The standardized unexpected volume (*S_UNEXP_VOL*) is the unexpected volume calculated above divide by the standard deviation of residuals from regression (4).

To test H4 and H5, I use the unexpected volume measures calculated above as the dependent variable in the following model to test the effect of the real time reporting requirements:

$$UNEXP\_VOL \text{ (or } S\_UNEXP\_VOL) = \beta_0 + \beta_1 (Real\_Time\_Dummy) + \beta_2 (BUNCH) + \beta_3 (In\_Play\_Pills) + \beta_4 (Real\_Time\_Dummy * In\_Play\_Pills) + B_5 (Abs\_Return) + \beta_6 (Positive) + \beta_7 (Abs\_Return * Positive) + \beta_8 (Abs\_Return * Real\_Time\_Dummy) + \beta_9 (Past\_Return) + \beta_{10} (Firm\_Size) + \beta_{11} (Volatility\_Index) \quad (6)$$

Where *Abs_Return* is the absolute value of size-adjusted cumulative abnormal return over the window (-1, 1) centered on the first day of poison pill adoption disclosures. Unexpected trading volume around an event can be caused by two factors: the information conveyed by the underlying event and a lack of market consensus about the impact of the event on the firm's valuation. *Abs_Return* controls for abnormal trading volumes generated from the market reacting to the information conveyed by the underlying event.[24] It is the main control variable in this regression. *Positive* is a dummy

[24] Similar designs are also used in other studies to infer divergence of investors' opinion after controlling for abnormal returns (e.g. Burks 2011, Bailey, Li, Mao, and Zhong 2003).

variable that equals one if the size-adjusted cumulative abnormal return over (-1, 1) is positive and zero otherwise. It is interacted with *Abs_Return* to allow differential volume reaction to good news versus bad news. I also interact *Abs_Return* with *Real_Time_Dummy* to allow for differential association of these variables in the discrete-time versus real-time reporting regime (Burks 2011, Karpoff 1987, Bailey, Li, Mao, and Zhong 2003). *Past_Return* is the absolute value of sized-adjusted cumulative abnormal return over the window (-30, -2). It is added to capture any leakage of information about the underlying events prior to its disclosure. *Firm_Size* is added because prior literature finds that it may affect trading volume. *Volatility_Index* is the mean value of the Chicago Board Options Exchange's volatility index over the three-day window (-1, 1). Burks (2011) finds that it is significantly related to trading volume. Thus, I include it as a control variable.

Table A7 reports the estimated coefficients and P-values for regression (6). If disclosure bunching around poison pill adoption disclosures makes the disclosure more opaque, it will increase the imprecision of the underlying information. As a result, it can impair investors' ability to assess the implication of a poison pill adoption on a firm's value. Thus, I expect the divergence of investor opinion to increase for bunched disclosures of poison pill adoptions. As expected, I find a significant and positive association between *BUNCH* and the unexpected volume measures, which suggests the divergence of investors' opinion is much higher for the bunched disclosures. In addition, the findings from the disclosure tests demonstrate that real time reporting requirements do not reduce strategic disclosure bunching for regular poison pills. No reduction in strategic disclosure bunching should also lead to no reduction in the divergence of investor opinion. The coefficient for *Real_Time_Dummy* captures the impact of the real-time reporting regime on the divergence of investor opinion for disclosure of regular poison pill adoptions. I expect the coefficient for *Real_Time_Dummy* to be insignificant.

The results in Table A7 show that the coefficient for *Real_Time_Dummy* is insignificant. This is consistent with my expectation that real time reporting requirements do not reduce divergence of investor opinion for disclosures of regular poison pill adoptions.

Finally, the coefficient for *Real_Time_Dummy * In_Play_Pills* captures the impact of the real-time reporting regime on the divergence of investor opinion for disclosures of in-play pill adoptions. The results from the disclosure tests indicate the likelihood of disclosure bunching decreases for in-play pills under the real-time reporting regime. If less disclosure bunching leads to higher market consensus, then I expect to observe less divergence of investor opinion around disclosures of in-play pill adoptions under the real-time reporting regime. As expected, results from Table A7 show the coefficient for *Real_Time_Dummy * In_play_pills* is negative and significant indicating the real-time reporting regime is more effective at reducing divergence of investor opinion for disclosures of in-play pill adoptions.[25]

[25] The result here is robust to running a separate regression for in-play pills.

CHAPTER 5 PRICING CONSEUQUENCE OF STRAEGIC DISCLOSURE BUNCHING

In the disclosure tests, I assume managers are likely to have incentives to engage in disclosure bunching for fear that disclosure of poison pill adoptions may lead to negative investor reactions. Under this assumption, if disclosure bunching is effective, then one would expect the market to react less negatively to the poison pill adoptions that are disclosed concurrently with other news. In addition, real-time reporting is intended to reduce strategic disclosure by management and improve disclosure transparency. If real-time reporting achieves this intended purpose, then disclosure bunching may become less effective in mitigating the negative pricing impacts of poison pill adoptions. Thus, in this section, I investigate whether disclosure bunching is effective at mitigating the negative market consequence of poison pill adoptions and whether real-time reporting dampens these effects.

To investigate the research question, I conduct a market reaction test using the following model:

$$CAR=\beta_0 + \beta_1 (BUNCH) + \beta_2 (DIS\_OTHER) + \beta_3 (Real\_Time\_Dummy) + \beta_1 (Real\_Time\_Dummy * BUNCH) + (Event\_Dummies) + \varepsilon \quad (7)$$

CAR is cumulative size-adjusted return over the five day window (-2, 2) centered on the first day of poison pill adoption disclosures. *DIS_OTHER* is a dummy variable that equals 1 if there is no disclosure from management but there are disclosures about the firm from a third party (e.g. forecast revision) that are issued over the five day window (-2, 2) of the first disclosure of poison pill adoptions, and zero otherwise. In-play pills are excluded because the five-day window around the disclosures of in-play pill adoptions is typically overwhelmed by disclosures from potential acquirers or other third parties.[26]

[26] Alternatively, I can add in-play pills and also add a dummy for in-play pills in the regression. The results remain very similar if I use this alternative specification.

Event_Dummies are dummy variables for each bunched news event. These variables are added to control for the impact of bunched events on market reaction.

The intercept (β_0) captures the market reaction to poison pill adoptions without disclosure bunching and without significant disclosures from a third party. Prior literature finds that the market reacts negatively to poison pill adoptions when a clean sample is examined (e.g. Ryngaert 1988; Sikes, Tian and Wilson 2010). Thus, I expect β_0 to be significantly negative. The coefficient for *BUNCH* captures the incremental market reaction to the disclosure of poison pill adoptions that are bunched with other news disclosures after controlling for the impact of the bunched news. If managers are successful in mitigating investors' negative perception of poison pill adoptions by bunching their disclosures with other news, then I expect β_1 to be positive and significant.

Table A8 reports the results for the market reaction test. Consistent with prior literature, the intercept (β_0) is negative and significant indicating the market reaction to poison pill adoptions is negative when the disclosure of adoptions is not bunched with other news. As expected, the coefficients for *BUNCH* is positive and significant, which indicates the incremental market reaction to the disclosure of poison pill adoptions that are bunched with other news is positive and significant. This suggests disclosure bunching with other news is effective in mitigating the negative market impact of poison pill adoption disclosures. The intercept plus the coefficient estimate for *BUNCH* is not significantly different from zero (P-value=.25). The intercept plus the coefficient estimates for *BUNCH* and *Real_Time_Dummy* BUNCH* is also not significantly different from zero (P-value=.15). This indicates the overall market reaction to the disclosure of poison pill adoptions that are bunched with other news is insignificant after controlling for the market reaction to the other news disclosures. The coefficients for *Real_Time_Dummy* and the interaction term are insignificant, which indicates disclosure

bunching is still effective at dampening the negative market impact of poison pill adoption disclosures under the real-time reporting regime.

CHAPTER 6 ROBUSTNESS TESTS

I assess the sensitivity of the main results in a number of ways. First, the adoption of a poison pill requires board approval. If the board of directors approves a poison pill in a regular board meeting along with other corporate events then it can induce a clustering of news disclosures. This can confound my test of the impact of real-time reporting on disclosure bunching. The best way to address this concern is to identify the regular board meeting time and to exclude those observations with bunched disclosure due to board approval. However, firms are not required to disclose board meeting time and meeting minutes publicly. There is no systematic way to identify regular board meeting times for the observations in my sample. Thus, I searched Google and Factiva to identify potential events that require board approval.[27] In addition, I also randomly selected 20 companies and read their proxy statement to identify potential events that may require board approval. Through this process I identified the following events: dividend initiation or increase, dividend termination, management buyout, share repurchase, stock split, reverse stock split, merger, new manager, manager retirement, and spinoff. My results for H1 and H2 are robust to exclusion of observations bunched with these events. In addition to these events, audit committees also review firms' financial statements. It is unclear whether the audit committees perform their reviews on the same days when the board of directors holds its regular meetings. Nonetheless, I test H1 and H2 by excluding observations that have 10K/10Q as the bunched events. The results are very similar after the exclusion.

Second, I define disclosure bunching as clustering of news in a short window. There is no evidence in prior literature on the best window to use in examining disclosure bunching. To empirically test the likelihood of disclosure bunching, I collect all news disclosures around (-2, 2) centered on the first disclosure of a poison pill adoption. To

[27] I search by using each event and one of the search terms: board, board of director, board approval, board approve, board of directors approve.

ascertain that my main results are not driven by the window choice I also test H1 and H2 by using (-1, 1) and 0 as my window choices. My results are robust. It is possible that managers are strategic at choosing clustering window when they engage in disclosure bunching. It is also possible that the benefit of clustering is different by using different clustering window. Moreover, the nature of the underlying events and the nature of the bunched events may also affect the benefits of clustering. These are interesting questions, but are beyond the scope of the current study. Future research can shed more light on these issues and advance our understanding of disclosure bunching.

Third, managerial disclosure can be affected by both opportunities and incentives. Real-time reporting is intended to reduce the opportunities of strategic disclosures. If there were factors that increased managers' incentives to engage in disclosure bunching after the 8-K amendment then it can work in favor of my result for H1. The existence of poison pills peaked in 2002 and experienced a sharp decrease in 2006 (Gerstein, Faris and Drewry 2011). One of the factors led to the reduction of poison pills can also affect firms' incentive to engage in disclosure bunching: increase in shareholder activism[28]. Thus, I re-run the regression for H1 by using poison pills adopted within a four, eight or twelve months period before and after the 8-K amendment. My result for H1 is robust in each of these sample periods.

Fourth, the control variables reflect the demand and supply of firms' disclosures. To ensure that the coefficient for real-time dummy and the interaction term do not capture the changes in control variables I interact the real-time dummy with each of the control variables. The results are very similar after including these interaction terms.

Finally, interpretation of interaction terms in probit and logit models can be problematic. The coefficient of the interaction terms may not represent marginal effect and the coefficient could be in the wrong direction (Ai and Norton 2003). Furthermore, in

[28] Gerstein, Faris and Drewry 2011 identified three factors for the reduction of poison pills: increase in shareholder activism, buoyant equity market, increased use of "on the shelf" strategy.

comparison to running a separate regression for in-play pills, the interaction approach has two additional potential limitations. First, it forces the coefficients for the control variables to be the same for both groups. If the controls have different effects on regular poison pills versus in-play pills the estimated coefficients for the interaction terms may be biased. Second, the dummy variable approach constraints the estimated variance to be the same in both groups. Given these limitations, I examine the impact of real time reporting on the likelihood of disclosure bunching and on the type of bunched news for regular poison pills and in-play pills in separate regressions. Untabulated results confirm my findings for H1, H2, H3 are robust to running a separate regression for regular poison pills and in-play pills.

CHAPTER 7 CONCLUSION

The objective of real-time reporting, according to the SEC, is to "reduce the opportunities for deception and manipulation" and to "provide for faster and more effective disclosure." However, this objective may not be achieved when managers can time information events. In this paper, I test whether real-time reporting reduces strategic bunching of within-firm news disclosure. I use regular poison pill (in-play pill) adoptions as the underlying information event because managers have (limited) control over the timing of regular poison pill (in-play pill) adoptions. The empirical results indicate real-time reporting has no significant impact on disclosure bunching around the disclosure of regular poison pill adoptions. Real-time reporting, however, is more effective at reducing disclosure bunching around the disclosure of in-play pill adoptions for which managers' ability to time the adoptions is restricted. In addition, disclosure bunching still occurs for in-play pills under the real-time reporting regime, but managers are more likely to time the disclosures of the other news to achieve disclosure bunching.

I also examine whether real-time reporting reduces divergence of investor opinion as a result of improved disclosure transparency. My results indicate real-time reporting has no significant impact on unexpected trading volume around the disclosure of regular poison pill adoptions. I do find a significant reduction of unexpected trading volume for disclosure of in-play pill adoptions under the real-time reporting regime. These findings suggest that real-time reporting does not (does) improve investors' capability to evaluate corporate disclosures when managers can (cannot) time the underlying news-triggering events.

Finally, I examine whether disclosure bunching is effective in mitigating the negative impact of poison pill adoption disclosures. My results show the market responds negatively to disclosure of poison pill adoptions that are not bunched with other news.

The incremental market reaction to poison pill adoption disclosures that are bunched with other news is positive and significant. These incremental market reactions do not change significantly under the real time reporting regime. These findings suggest that disclosure bunching dampens the market reaction to poison pill adoptions in both the discrete and real-time reporting regime.

My study assumes managers have incentives to engage in strategic disclosure bunching when they are required to disclose news that may be perceived negatively by investors or proxy advisers. Predictions from prior theoretical research, however, suggest managers also have incentives to engage in strategic disclosure when they are uncertain about investors' response. In addition, prediction from prior theoretical research also indicates that the level of managers' risk aversion can affect the timing of disclosure bunching (Dutta and Trueman 2002; Suijs 2007; Dye2010). Future studies can provide insightful evidence on whether managers' risk aversion (e.g. managerial ownership) affects the timing of disclosure bunching and whether disclosure bunching occurs around disclosure of neutral news events.

APPENDIX A

TABLES

Table A1. Categorization for Each Type of News and for Each Observation

Panel A: Categorization for each type of news

News Categories	Events for which managers have control over the disclosure / the timing of occurrence	Events for which managers have little or no control	Indeterminate whether managers have control over or not
Good	• Business expansion • Discover new natural resource reserve • Dividend initiation or increase • Announce large donation • Forecast an increase in future earnings • Insider purchase • Management buyout • New patent • New product • Share repurchase • Stock split	• Earnings release announcements where earnings of quarter t is higher than earnings from the same quarter in prior year • Receive a new license	• Satisfy exchange listing requirements and was able to continue its listing • Emerging from Chapter 11 • Being added into NASDAQ tech index • Receive a large purchase contract • Obtain large debt financing • Present at a large tech conference • Announce increase in sales • Forming a strategic alliance with a third party • Winning a law suit
Bad	• Appeal to exchange to not delist • Dividend termination or decrease • Delay 10K/10Q • Insider sale • Issue earnings warnings • Lay off employees • Reserve split • Report lower production	• Being sued • Earnings release announcements where earnings of quarter t is lower than earnings from the same quarter in prior year • Receive penalty from a litigation or environmental issues • Restatement • Work accident • SEC inquiry	• Partnership termination initiated by the business partner • FDA disapproval • Announce decrease in sales

Table A1. Panel A Continued

Uncertain	• Acquire other business • Change annual meeting time • Convert staggered board to one class • Management forecast is the same as analyst forecast • Top management retire • New director • Hiring a new top manager (e.g. CEO, CFO) • Purchase large amount of security of another company • Recapitalization • Reincorporation in Delaware • Reorganization • Repositioning • Sell PPE • Sell intangible assets • SEO • Spinoff • Adopt a staggered board • Sue others	• Filing of 10K/10Q • Director resign	• Conference call • Litigation settlement • Top management resign • Director resign • Merger of two equal companies • Reach an agreement with the union

Table A1. Continued

Panel B: Categorization for each observation				
	No bunching	**Bunched with good news**	**Bunched with bad news**	**Bunched with uncertain news**
No bunching	Not bunched with any news	-	-	-
Bunched with good news	-	Good	Uncertain	Good
Bunched with bad news	-	Uncertain	Bad	Bad
Bunched with uncertain news	-	Good	Bad	Uncertain

Panel A categorizes each news event into news events that managers have control over or not. If an event is required to be disclosed in 8-K filings but managers have discretion over the timing of its occurrence or if an event is not required to be disclosed in 8-K filings then the event is considered as an event that mangers have control over. Otherwise, the event is considered as an event that managers do not have control over. If the event cannot be put into either of the two categories (i.e. if one is unsure whether managers have control or not) then the event is coded as indeterminable. Panel A also categorize each type of news events into good, bad or uncertain. The categorization is based on prior studies of market reaction to the events and one's intuition. The categorization is done by nine accounting PhD students at the University of Iowa. I compile the categorization following the opinion of the majority.

A disclosure of a poison pill adoption may be bunched with multiple other news events. I code the observation as bunched with events managers have control over as long as one of the bunched events is an event that managers have control over.

For observations that are bunched with multiple news which include a mixture of good, bad, and uncertain news events the coding is more complicated. Panel B illustrates the coding rule in detail. For instance, if the disclosure of a poison pill adoption is bunched with only good/bad/uncertain news then the observation is coded as bunched with good/bad/uncertain news respectively. If the disclosure of a poison pill adoption is bunched with good (bad) and uncertain news then the observation is coded as bunched with good (bad) news. If the disclosure is bunched with both good and bad news then the observation is coded as bunched with uncertain news.

Table A2. Sample Selection

Poison pill adoptions provided by Shark Repellent covers 2000 to September 2009	1332
1. Missing basic Compustat data needed to calculate the log of market value of equity in the quarter prior to the poison pill adoption	-147
2. Duplicate record	-2
3. Wrong classification (not a poison pill adoption)	-2
4. Cannot find the poison pill adoption record	-22
Poison pill adoptions for which disclosures over the window (-2, 2) are collected	1159
5. Tax poison pills	-42
6. Renewed poison pills	-20
Base sample	1097
7. Missing addition Compustat, CRSP and IBES data for the logit test	-246
Number of observations for testing H1 and H2	851

Observations may vary by table depending on data availability. I exclude tax poison pills because 40 out of the 42 tax pills are adopted in the post new 8-K era. This biased distribution in the pre- versus post new 8-K amendment makes this type of poison pills not useful in assessing the impact of the new 8-K requirements.

Table A3. Descriptive Statistics

Panel A: Descriptive statistics for hand collected variables

	Pre 8-K amendment	Post 8-K amendment	Total
Number of calendar days between a poison pill adoption and the first disclosure of the adoption			
Mean	5.11	1.64	-
Median	1	1	-
Q1	0	0	-
Q3	4	2	-
Max	116	18	-
Min	0	0	-
For in-play pills			
Mean	1.77	1.17	-
Median	1	1	-
Q1	1	0	-
Q3	3	2	-
Max	10	6	-
Min	0	0	-
Number of observations that are bunched with good news, bad news or uncertain news			
Good news	150	88	238
Bad news	38	16	54
Uncertain news	140	74	214

Panel B: Descriptive statistics for control variables

Variable	N	Mean	Median	Std Dev	Q1	Q3
Firm_Size	851	5.90	5.85	1.67	4.73	6.91
ROA	851	-0.03	0.00	0.11	-0.05	0.02
Loss_Dummy	851	0.45	0.00	0.50	0.00	1.00
MTB	851	3.12	1.98	4.20	1.22	3.39
Analyst_Coverage	851	6.08	4.00	5.66	2.00	8.00
Forecast_Dispersion	851	0.03	0.01	0.06	0.01	0.03
Return_Volatility	851	0.05	0.04	0.02	0.03	0.06

Panel A reports descriptive statistics for the hand collected variables. Panel B reports descriptive statistics for control variables used in the logit test. *Firm_Size* is the natural logarithm of the market value of equity. *ROA* is return on assets. It is pre-tax income divided by total assets. *Loss_Dummy* equals one if pre-tax income is negative. *MTB* is

Table A3. Panel B Continued

market to book ratio. All of the compustat control variables are taken from quarter t-1, the quarter prior to the adoption of the poison pill. *Analyst_Coverage* is the number of analysts following at the end of quarter t-1. *Forecast_Dispersion* is the standard deviation of analyst forecasts for firm i in quarter t-1. *Return Volatility* is the volatility of returns in the past 250 days from event day 0. Firms with less than 100 observations of daily returns are excluded.

Table A4. Impact of the New 8-k Amendments on Disclosure Bunching Around the Disclosure of Poison Pill Adoptions (H1 and H2)

Dependent Variable: BUNCH							
Variable	Predicted sign	Coefficient estimate	P-value	Coefficient estimate	P-value	Coefficient estimate	P-value
Intercept		-0.26	0.35	-0.15	0.62	-1.08	0.02
Real_Time_Dummy	?	-0.07	0.62	0.04	0.79	0.07	0.67
In_Play_Pills	?			-0.74	0.05	-0.74	0.06
*Real_Time_Dummy * In_Play_Pills*	-			-1.22	0.02	-1.20	0.02
Firm_Size	+	0.09	0.03	0.07	0.08	0.23	0.00
ROA	?					-0.48	0.58
Loss_Dummy	+					0.18	0.18
MTB	?					-0.02	0.26
Analyst_Coverage	?					-0.04	0.04
Forecast_Dispersion	+					0.38	0.43
Return_Volatility	+					4.60	0.06
Trend	+	0.66	0.02	0.99	0.00	0.97	0.01
N		851		851		851	
Pseudo R-Square		2.90%		6.70%		8.01%	
Chi-Square Test		7.67		2.79		4.36	

This table reports the results for various specification of logit regression of equation (1). *BUNCH* is a dummy variable if the disclosure of a poison pill adoption is bunched with other news and zero otherwise. *Real_Time_Dummy* is the testing variable. It is a dummy variable that equals one for poison pill adoptions that occur after August 23, 2004, the effective date for the new 8-K amendments, and zero otherwise. *In_Play_Pills* is a dummy variable that equals one for adoption of in-play pills and zero otherwise. *Firm_Size* is the natural logarithm of the market value of equity. *ROA* is return on assets. It is pre-tax income divided by total assets. *Loss_Dummy* equals one if pre-tax income is negative. *MTB* is market to book ratio. All of the compustat control variables are taken from quarter t-1, the quarter prior to the adoption of the poison pill. *Analyst_Coverage* is the number of analysts following at the end of quarter t-1. *Forecast_Dispersion* is the standard deviation of analyst forecasts for firm i in quarter t-1. *Return_Volatility* is the volatility of returns in the past 250 days from event day 0. Firms with less than 100 observations of daily returns are excluded. *Trend* is the total number of news items for a firm from Factiva over a one-year window centered on the first day of a poison pill adoption disclosure. It is hand collected from Factiva and then scaled by 1000.

Table A5. Impact of the New 8-k Amendments on Good News Disclosure Bunching Around the Disclosure of Poison Pill Adoptions

Panel A: Dependent variable: BUNCH_GOOD_NEWS

Variable	Predicted sign	Coefficient estimate	P-value	Coefficient estimate	P-value	Coefficient estimate	P-value
Intercept		-0.77	0.01	-0.70	0.02	-1.06	0.03
Real_Time_Dummy	?	0.06	0.72	0.13	0.44	0.26	0.14
In_Play_Pills	?			-0.54	0.24	-0.50	0.27
*Real_Time_Dummy * In_Play_Pills*	-			-0.91	0.11	-1.00	0.09
Firm_Size	+	-0.05	0.37	-0.05	0.29	-0.08	0.30
ROA	?					-0.21	0.81
Loss_Dummy	+					0.05	0.40
MTB	?					0.02	0.18
Analyst_Coverage	?					0.03	0.10
Forecast_Dispersion	+					-2.58	0.26
Return_Volatility	+					5.01	0.10
Trend	+	0.28	0.04	0.35	0.02	0.26	0.06
N		851		851		851	
Pseudo R-Square		1.00%		2.40%		4.07%	
Chi-Square Test		6.12		13.78		6.32	

Table A5. Continued

Panel B: Dependent variable: *BUNCH_UNCERTAIN_NEWS*

Variable	Predicted sign	Coefficient estimate	P-value	Coefficient estimate	P-value	Coefficient estimate	P-value
Intercept		-2.36	0.00	-2.31	0.00	-3.06	0.00
Real_Time_Dummy	?	-0.02	0.90	0.04	0.82	-0.02	0.93
In_Play_Pills	?			-0.52	0.30	-0.54	0.29
*Real_Time_Dummy * In_Play_Pills*	-			-0.67	0.20	-0.58	0.24
Firm_Size	+	0.22	0.00	0.21	0.00	0.39	0.00
ROA	?					-0.46	0.64
Loss_Dummy	+					0.11	0.32
MTB	?					-0.03	0.21
Analyst_Coverage	?					-0.06	0.00
Forecast_Dispersion	+					1.62	0.22
Return_Volatility	+					1.30	0.38
Trend	+	-0.17	0.30	-0.13	0.38	-0.11	0.40
N		851		851		851	
Pseudo R-Square		3.11%		4.09%		6.10%	
Chi-Square Test		12.64		19.23		12.30	

Panel A reports results for a replication of Table A4 with *BUNCH_GOOD_NEWS* as the dependent variable. Panel B reports results of a replication of Table A4 with *BUNCH_UNCERTAIN_NEWS* as the dependent variable. *BUNCH_GOOD_NEWS* is a dummy variable if the disclosure of a poison pill adoption is bunched with good news and zero otherwise. *BUNCH_UNCERTAIN_NEWS* is a dummy variable if the disclosure of a poison pill adoption is bunched with uncertain news and zero otherwise. *Real_Time_Dummy* is a dummy variable that equals one for poison pill adoptions that occur after August 23, 2004, the effective date for the new 8-K amendments, and zero otherwise. *In_Play_Pills* is a dummy variable that equals one for adoption of in-play pills and zero otherwise. *Firm_Size* is the natural logarithm of the market value of equity. *ROA* is return on assets. It is pre-tax income divided by total assets. *Loss_Dummy* equals one if pre-tax income is negative. *MTB* is market to book ratio. All of the compustat control variables are taken from quarter t-1, the quarter prior to the adoption of poison pill. *Analyst_Coverage* is the number of analysts following at the end of quarter t-1. *Forecast_Dispersion* is the standard deviation of analyst forecasts for firm i in quarter t-1. *Return_Volatility* is the volatility of returns in the past 250 days from event day 0. Firms with less than 100 observations of daily returns are excluded. *Trend* is the total number of news items for a firm from Factiva over a one-year window centered on the first day of a poison pill adoption disclosure. It is hand collected from Factiva and then scaled by 1000.

Table A6. Impact of the New 8-K Amendment on the Type of Bunched Disclosures (H3)

Dependent variable: MGMT_CONTR					
Variable	Predicted sign	Coefficient estimate	P-value	Coefficient estimate	P-value
Intercept		-0.17	0.62	-0.88	0.14
Real_Time_Dummy	?	0.03	0.86	0.11	0.58
In_Play_Pills	?	-0.51	0.35	-0.55	0.32
*Real_Time_Dummy * In_Play_Pills*	+	2.08	0.04	2.12	0.04
Firm_Size	?	0.06	0.27	0.15	0.09
ROA	?			-0.92	0.35
Loss_Dummy	?			0.19	0.43
MTB	?			0.00	0.91
Analyst_Coverage	?			-0.01	0.58
Forecast_Dispersion	?			-1.66	0.48
Return_Volatility	?			2.79	0.56
Trend	?	-0.08	0.4553	-0.09	0.43
N		506		506	
Pseudo R-Square		1.53%		2.63%	
Chi-Square Test		9.75		9.87	

This table reports results from running logit regression of equation (2). Only observations with bunched disclosures are used. *MGMT_CONTR* is a dummy variable that equals one for bunched events that managers have control over the disclosure or the timing and zero otherwise. *Real_ Time_Dummy* is a dummy variable that equals one for poison pill adoptions that occur after August 23, 2004, the effective date for the new 8-K amendments, and zero otherwise. *In_Play_ Pills* is a dummy variable that equals one for adoption of in-play pills and zero otherwise. *Firm_Size* is the natural logarithm of the market value of equity. *ROA* is return on assets. It is pre-tax income divided by total assets. *Loss_Dummy* equals one if pre-tax income is negative. *MTB* is market to book ratio. All of the compustat control variables are taken from quarter t-1, the quarter prior to the adoption of poison pill. *Analyst_Coverage* is the number of analysts following at the end of quarter t-1. *Forecast_Dispersion* is the standard deviation of analyst forecasts for firm i in quarter t-1. *Return_Volatility* is the volatility of returns in the past 250 days from event day 0. Firms with less than 100 observations of daily returns are excluded. *Trend* is the total number of news items for a firm from Factiva over a one-year window centered on the first day of a poison pill adoption disclosure. It is hand collected from Factiva and then scaled by 1000.

Table A7. Impact of the New 8-K Amendments on Divergence of Investors' Opinion (H4 and H5)

Dependent variable		**Unexpected volume**		**Unexpected volume**	
Variable	Predicted sign	Coefficient estimate	P-value	Coefficient estimate	P-value
Intercept		-3.69	0.07	-4.86	0.02
BUNCH	+	1.04	0.05		
Real_Time_Dummy	?			0.94	0.44
In_Play_Pills	+			7.81	0.00
*Real_Time_Dummy * In_Play_Pills*	-			-5.63	0.04
Abs_Return	+	21.14	0.05	22.32	0.04
Positive	?	0.94	0.42	0.76	0.52
Positive Abs_Return*	?	22.84	0.08	25.01	0.06
*Real_Time_Dummy * Abs_Return*	?	12.28	0.20	8.59	0.46
Past_Return	?	8.43	0.00	8.10	0.00
Firm_Size	+	0.54	0.04	0.70	0.01
Volatility_Index	?	-0.12	0.00	-0.12	0.01
N		1016		1016	
Adjusted R-Square		9.17%		10.34%	

Table A7. Continued

Dependent variable		**Standardized Unexpected volume**		**Standardized Unexpected volume**	
Variable	Predicted sign	Coefficient estimate	P-value	Coefficient estimate	P-value
Intercept		-0.38	0.57	-0.69	0.31
BUNCH	+	0.75	0.01		
Real_Time_Dummy	?			0.13	0.73
In_Play_Pills	+			3.15	0.00
*Real_Time_Dummy * In_Play_Pills*	-			-2.49	0.01
Abs_Return	+	10.17	0.00	10.45	0.00
Positive	?	0.61	0.10	0.60	0.11
Positive Abs_Return*	?	-1.66	0.70	-1.09	0.80
*Real_Time_Dummy * Abs_Return*	?	6.09	0.05	5.87	0.12
Past_Return	?	3.46	0.00	3.40	0.00
Firm_Size	+	0.29	0.00	0.37	0.00
Volatility_Index	?	-0.09	0.00	-0.09	0.00
N		1016		1016	
Adjusted R-Square		10.38%		11.64%	

This table reports results of running equation (6). *BUNCH* is a dummy variable if the disclosure of a poison pill adoption is bunched with other news and zero otherwise. *Real_Time_Dummy* is a dummy variable that equals one for poison pill adoptions that occur after August 23, 2004, the effective date for the new 8-K amendments, and zero otherwise. *In_Play_Pills* is a dummy variable that equals one for adoption of in-play pills and zero otherwise. *Abs_Return* is the absolute value of size adjusted cumulative abnormal return over the window (-1, 1) centered on the first day of poison pill adoption disclosure. *Positive* is a dummy variable that equals one if the size adjusted cumulative abnormal return over (-1, 1) is positive. *Past_Return* is the absolute value of sized adjusted cumulative abnormal return over the window (-30, -2). *Firm_Size* is the natural logarithm of the market value of equity. *Volatility_Index* is the mean value of the Chicago Board Options Exchange's volatility index over the three-day window (-1, 1).

Table A8. Consequence of Disclosure Bunching

Dependent variable : *CAR*			
Variable	Predicted sign	Coefficient estimate	P-value
Intercept	-	-0.02	0.00
BUNCH	+	0.03	0.01
DIS_OTHER	?	0.05	0.01
Real_Time_Dummy	?	-0.00	0.80
*Real_Time_Dummy * BUNCH*	?	0.01	0.42
Dummy variables for each event			Yes
N			949
Adjusted R-Square			16.72%

This table reports results from the market reaction test of equation (7). *CAR* is cumulative size adjusted return over the five day window (-2, 2) centered around the first day of poison pill adoption disclosures. *BUNCH* is a dummy variable if the disclosure of a poison pill adoption is bunched with other news and zero otherwise. *DIS_OTHER* is a dummy variable that equals 1 if there is no disclosure from management but there are disclosures about the firm from a third party (e.g. forecast revision) that are issued over the five day window (-2, 2) of the poison pill adoptions and zero otherwise. *Real_Time_Dummy* is a dummy variable that equals one for poison pill adoptions that occur after August 23, 2004, the effective date for the new 8-K amendments, and zero otherwise. The intercept plus the coefficient estimate for *BUNCH* is not significantly different from zero (P-value=.25). The intercept plus the coefficient estimates for *BUNCH* and *Real_Time_Dummy * BUNCH* is also not significantly different from zero (P-value=.15).

APPENDIX B

FIGURES

Figure B1. Available Channels to Engage in Disclosure Bunching for Regular and In-Play Poison Pills

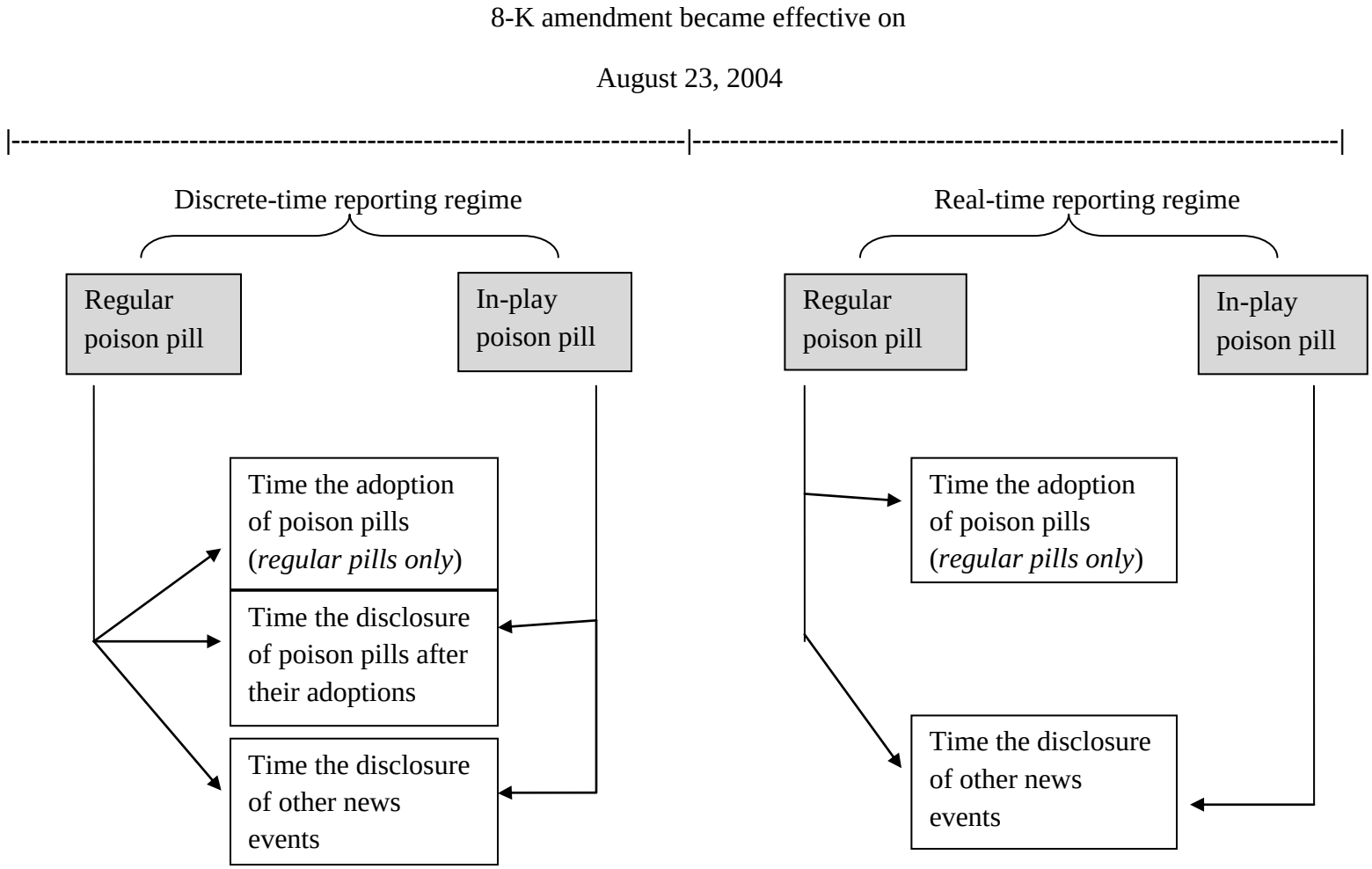
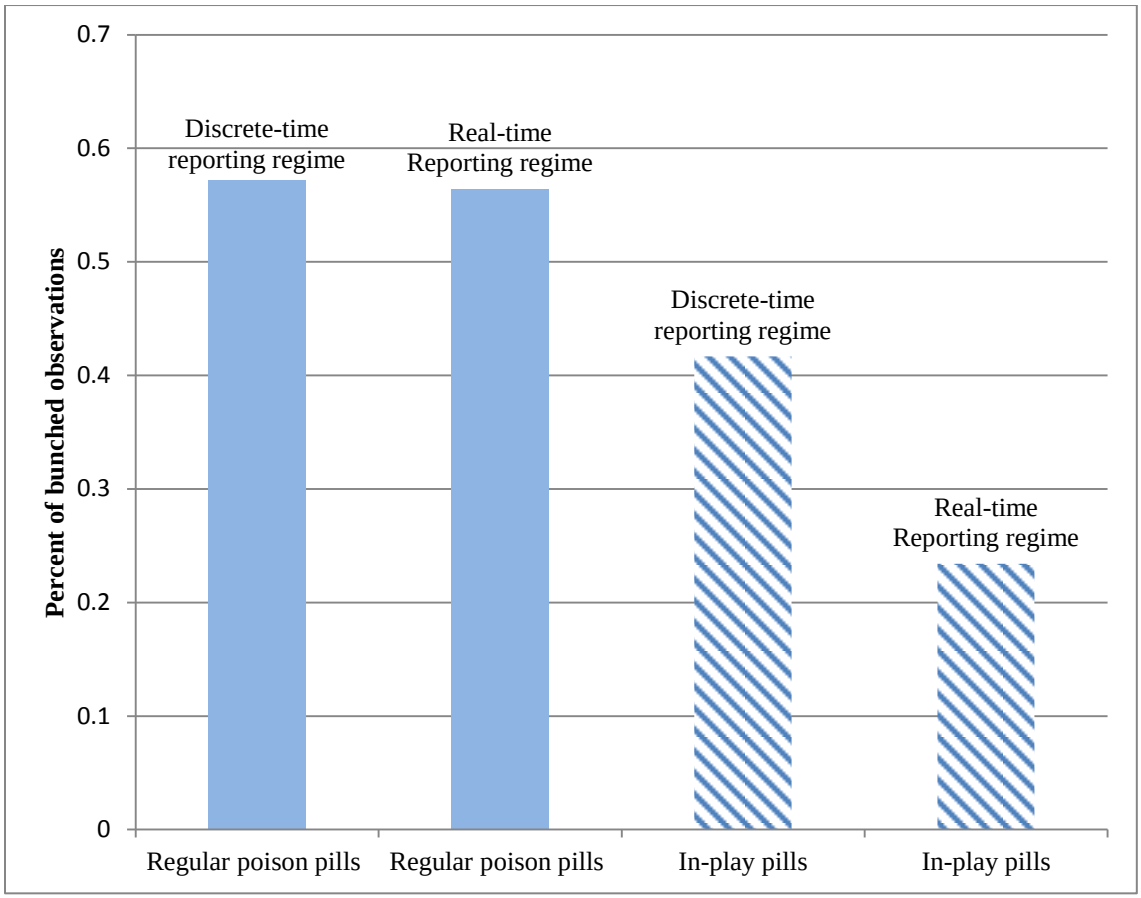


Figure B2. Percent of bunched observation under the discrete-time vs. real-time reporting regime



This figure plots the percent of bunched observations for both the regular poison pills and in-play pills under the discrete-time vs. real-time reporting regime. The P-value from a Chi-Square test of equality of the bunching frequency for regular poison pills (in-play pills) in the discrete-time versus real-time reporting regime is 0.9232 (0.0076).

APPENDIX C

TEXT

Text C1. List of Required Disclosure Under Form 8-K

This appendix provides a list of required disclosures under Form 8-K. Italicized items reflect the required disclosure added under the amendment in 2004. [29]

1. *Entry into or termination of a material definitive agreement.*
2. Bankruptcy or receivership.
3. Completion of acquisition or disposition of assets.
4. Results of operations and financial condition.
5. *Creation of a direct financial obligation or an obligation under an Off-Balance sheet arrangement of a registrant.*
6. *Triggering events that accelerate or increase a direct financial obligation or an obligation under an Off-Balance sheet arrangement.*
7. *Costs associated with exit or disposal activities.*
8. *Material impairments.*
9. *Notice of delisting or failure to satisfy a continued listing rule or standard; transfer of listing.*
10. *Unregistered sales of equity securities.*
11. *Material modification to rights of security holders.*
12. Changes in registrant's certifying accountant.
13. *Non-Reliance on previously issued financial statements or a related audit report or completed interim review.*
14. Changes in control of registrant.

[29] http://www.sec.gov/rules/final/33-8400.htm

Text C1. Continued

15. *Departure of directors or certain officers; election of directors; appointment of certain officers; compensatory arrangements of certain officers.*
16. *Amendments to articles of incorporation or bylaws; change in fiscal year.*
17. Temporary suspension of trading under registrant's employee benefit plans.
18. Amendments to the registrant's code of ethics, or waiver of a provision of the code of ethics.
19. Change in shell company status.
20. Submission of matters to a vote of security holders.
21. Shareholder director nominations
22. ABS (asset-backed securities) informational and computational material.
23. Change of servicer or trustee for asset-backed securities.
24. Change in credit enhancement or other external support for asset-backed securities.
25. Failure to make a required distribution to holders of asset-backed securities.
26. Securities act updating disclosure for asset-backed securities.
27. Regulation FD disclosure.
28. Financial statements and exhibits.

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