Poison Pill Redemption: Evidence from the Commercial Banking Industry

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Abstract

Poison pills adopted by commercial banks add another layer of complexity to an already intricate corporate governance mechanism of the banking industry. Using a sample of 164 poison pills adopted by commercial banks between 1984 and 2004, I show that the likelihood of redeeming a pill is a function of the level of capital and the economic conditions prevalent before pill adoptions. Poison pill adopters have similar characteristics with banks of similar size not protected by pills. Moreover, the average structure of the poison pills adopted by commercial banks seems to be less rigid that the structure of the pills adopted by non-financial companies.

I. Introduction

It is widely accepted that the merger wave of 1980s was brought to an end by changes in the financial environment, new regulations initiated by policymakers, and the emergence of antitakeover defenses such as poison pills, also known as shareholder rights plans. The decade of the 1990s witnessed an increase in poison pill popularity and culminated with more than 2,200 companies across all industries having poison pills in force. Despite their widespread acceptance, poison pills have been subject to permanent litigation challenges. Court decisions, shareholder proposals, and independent director initiatives have led to a series of evolutionary changes on the poison pill structure or even to the demise of poison pills in some cases. More recently, the shareholder activism has led to an overall decline of the number of first time adopted poison pills.

The purpose of this study is to advance our understanding of the use of poison pills by investigating the adoption of the poison pills in the commercial banking sector. The special nature of bank takeovers makes the poison pill adoption by commercial banks the ideal empirical setting for testing two prevalent hypotheses: management entrenchment vs. shareholders' interest. On the one hand, bank takeovers are characterized as being "friendly" and not requiring defensive measures (Becher, 2000; Brewer and Jagtiani, 2008). Hostile banking takeovers are rarely undertaken and usually fail because the lengthy approval process gives targets enough time to develop additional defense measures (Brewer, Jackson, and Wall, 2006). Moreover, in several instances regulators have encouraged acquisitions of distressed banks in order to increase the overall financial stability. On the other hand, bank acquirers are willing to pay a high premium for mergers that allow them to attain the "too-big-to-fail" status (Brewer and Jagtiani, 2007). In this case, part of the bank merger premium is considered a low-cost insurance against bankruptcy.

This study contributes to the literature on takeover defenses in several ways. First, the examination of poison pill adopted by non-financial firms provides evidence on management and the shareholders' effort to balance the cost of deterrence and the benefit of added bargaining power associated with these antitakeover measures. The examination of poison pills adopted by commercial banks should mainly reveal the benefit of added bargaining power, as the need to deter hostile acquisitions is minimal. Second, the analysis of poison pill announcements and amendments in the banking industry avoids the misspecification arising from industry-specific

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antitakeover measures in the other sectors. Finally, the availability of financial data for privately held banks allows an investigation of the poison pill adoption by both publicly traded and privately held banks. Previous studies on the main characteristics of poison pill adopters have been limited to samples of publicly traded firms.

The results of this study indicate that poison pills adopted by commercial banks have a less rigid structure than those adopted by non-financial companies. The difference in the average poison pill structure reflects the fact that takeover activity in banking is less hostile than that of other sectors (Brewer, Jackson, and Wall, 2006). The empirical analysis reveals that poison pills adopted during economic booms by banks with a higher leverage are more likely to be redeemed. Based on these results, one can argue that poison pills are used by some commercial banks as a temporary antitakover shield. The argument is strengthened by additional evidence that poison pill redemption is not necessarily triggered by merger and acquisition negotiations. The remainder of this study is organized as follows. The next section presents an overview of the extant theoretical and empirical literature and develops the testable hypotheses. Section 3 describes the sample and presents the results of the empirical analyses and the conclusions derived. A summary of the main findings concludes the study.

II. Previous literature and hypotheses development

A. Previous literature

As part of the ongoing debate on the use of antitakeover defenses, several empirical studies examine poison pill adoptions in the context of agency relationships. Several studies document negative stock price reaction around the poison pill adoption date, hence providing support for the managerial entrenchment hypothesis (De Angelo and Rice, 1983; Malatesa and Walking, 1988; and Ryngaert, 1988). In contrast, other empirical studies document insignificant stock price reaction around poison pill adoption announcements (De Angelo and Rice, 1983; Malatesa and Walking, 1988; and Ryngaert, 1988). More recently, the price reaction puzzle is explained by the fact that there are two indistinguishable components at work: the bargaining effect and the deterrence effect (Comment and Schwert, 1995). The negative wealth effect at the announcements of pill adoption shows that market overestimated the cost of deterrence and underestimated the benefit of added bargaining power. Comment and Schwert (1995) find support for the shareholder interest hypothesis, which suggests that poison pills are used in manners that benefit the shareholders by raising the takeover premium without hampering the takeover success. Using a large sample of unsolicited takeover attempts, Heron and Lie (2006) provide additional evidence supporting the shareholder hypothesis. According to their study, poison pills are associated with both higher takeover premiums and shareholder gains. The bargaining power benefits are associated not only with poison pills adopted before the takeover attempts but also with "morning-after" pills, adopted after firms received takeover offers.

In a recent study, Danielson and Karpoff (2006) show that poison pill adoption is followed by a period of better operating performance. However, the improvement in operating performance seems to be explained by factors other than a shift in policies due to pill adoption. Bebchuk (2002) and Danielson and Karpoff (2006) argue that the mixed evidence on poison pills efficiency justifies the middle-of-the-road policy regarding poison pills. The policy allows board of directors to adopt poison pills under the condition that pill can be breached in a takeover

situation. Fleischer and Sussman (2000) identify one of the three conditions that should govern the adoption process, as "the pill must be neither coercive nor preclusive and should represent a proportional response to a reasonable perceived threat". At the time of adoption, the structure of the poison pill is determined by the general takeover environment and the firm's strategic position within the industry. As a result, changes in structure of the poison pills over time should reflect changes in the takeover climate and firm's characteristics. The efficiency of the poison pill as a measure against takeovers is based not only on the deterrent structural provisions at the date of the announcement, but also on the option to change these provisions[1].

B. Hypotheses development

The takeover climate in the banking industry has been greatly affected by the adoption of the Riegle-Neal Act of 1994. Fully implemented in June 1997, the Riegle-Neal Act allows banks to consolidate existing out-of-state bank subsidiaries and acquire out-of-state banks or individual branches of banks. An extensive line of literature has identified acquirer and target financial attributes explaining the bank takeover probability and merger premium, while controlling for the impact of Riegle-Neal Act on the takeover activity. Hannan and Pilloff (2006) present two rationales explaining the positive relationship between a bank's capital asset ratio and the likelihood of being acquired. The two hypotheses are built on the arguments that capitalization is an index of bank's inability to diversify its assets and that the acquisition of a better capitalized target is one way to increase capitalization. According to the former argument, banks with less diversified assets need to maintain higher capitalization levels, thus being worth more to diversified acquirers than to current owners. The latter argument is built on the premise that banks with lower capitalization levels face regulatory pressure to increase capitalization. Therefore, banks with higher level of capital are more likely to be subject to merger offers by banks in need to adjust their capital to higher levels. Similarly, banks with lower capitalization are less likely to receive offers from potential acquirers, hence less likely in need of the antitakover shelter provided by a poison pill. Thus:

Hypothesis 1: Banks with lower capitalization levels are more likely to subsequently redeem the poison pills.

I control for other bank characteristics documented to be significantly associated with the likelihood of takeover attempts and merger premium, such as profitability, revenue diversification, and size. Several empirical studies document the relationship between bank's profitability and the likelihood of being acquired. Akhigbe, Madura and White (2004) and Hannan and Pilloff (2006) argue that the probability of a bank being acquired is higher for larger banks with lower return on assets. The main argument is that completed mergers allow the transfer of assets from owners who use them less efficiently to owners who can use them more efficiently. However, Hannan and Rhoades (1987) and Hadlock, Houston and Ryngaert (1999) do not find evidence that banks with lower profitability are more likely to be acquired. This may be due to the fact that the incorporation of a target with a low profitability would eventually prove to be a very expensive process, thus undermining the success of the merger. One of the factors associated with market perception of bank mergers is the revenue diversification, measured by the Herfindahl-Hirschman revenue index. The level of uncertainty linked to the bank activities is related to the revenue diversification. Santomero and Chung (1992) and Saunders and Walters (1994) argue that diversification leads to less volatile market returns, and thus to a reduction in risk. However, Demsetz and Strahan (1997) find that banks with very high

[1] A brief description of some of the major poison pill provisions is presented in Appendix 1

level of diversification are riskier as they pursue riskier lending than less diversified banks. Finally, Shawki, Kilb and Staas (1996) find that smaller banks receive larger premiums. However, Hannan and Pilloff (2006) argue that "The relationship between a banking institution's size and its prospects for being acquired is a complicated one". Based on the above mentioned arguments, one can make no inferences on the sign or the significance of the coefficient for the three control variables. Takeover decisions are based on the assessment of bank specific factors, as well as macroeconomic factors (Buch and De Long, 2004). Bernanke and Gertler (1989) argue that bank asymmetric information and agency costs are exacerbated by economic downturns, when the assessment of the creditworthiness of corporate borrowers becomes more difficult. The ability to raise capital for merger purpose is greatly reduced and the number of bank merger attempts is lower during economic slowdown. During such periods poison pill adoption may not be seen as a priority. Thus:

Hypothesis 2: Poison pills adopted during economic downturns are less likely to be redeemed.

III. Sample and methods

The list of poison pill adoptions comes from the Thompson Financial Security database (Security Data Corporation-SDC- *Poison Pills*). Besides the adoption date, the SDC reports other information about the poison pill, such as amendment dates, names of issuers, main Standard Industrial Classification (SIC) codes, to mention a few. It also reports a brief description of each poison pill amendment and its expected impact. I select only poison pills adopted by domestic commercial banks (SIC 602, 617). The announcement date and other characteristics of the poison pill come from the SDC database. Only banks with complete annual data from the Reports of Condition and Income ("Call Reports") are retained in the final sample. There are 164 adoptions during the period 1986 to 2004 that involved public and private banks. Only 42 banks subsequently redeem shareholder plans, while the remaining 122 banks choose to amend them, let them expire or renew them. While the average survival age of a poison pill adopted by a bank is around ten years, the pills redeemed survive for no more than seven years. However, due to an increased shareholder activism, poison pills adopted during the last decade are less likely to have a similar survival chance.

Table 1 presents the distribution of poison pills over the period 1986-1997 and 1997-2004. The popularity of poison pills during the late 1980s is not reflected by the poison pill adoption activity during the late 1990s. With respect to geographic distribution (Table 1) of the poison pill issuer, it is evident that the Midwest and the Southwest banks are underrepresented in the total sample. The Northeast banks dominate the sample of banks, with a large number of banks adopting poison pills in the late 1980s. The geographic distribution of the poison pill adopters might be explained by the fact that in the mid-1980s, some states formed regional compacts (i.e Northeast and Southeast compacts) that allowed mergers among banks within the same region but prevented banks headquartered outside the region from participating. It is worth noting that none of the poison pills adopted during the first years was still in force at the end of 2005[2]. This result is explained by the fact that most of the pills expired, while some others were redeemed. Although many of the poison pills adopted after 1995 were in force the end of 2005,

[2] The status of the shareholder plan is reflected by the data collected at the end of 2005. The results remain unchanged if the sample is limited to poison pills adopted during 1980s and 1990s to allow for a longer change in status period.

the structure of the pill was not very rigid. Provisions such as dead hand or the affiliation with staggered boards are not common for bank poison pills. The average structure of the poison pills adopted by commercial banks seems to be less rigid that the structure of the pills adopted by non-financial companies. More importantly, the average poison pill with subsequent amendments seems to survive no more than 10 years, the average life of the poison pill adopted by non-financial firms.

Several empirical studies have shown that the wealth distribution at the announcement of a takeover depends on the public status of the target firm (Faccio, McConnell, and Stolin, 2005; Mantecon, 2007). The differential wealth distribution is explained by the fact that private targets have less relative bargain power than the public targets. Based on this argument, private banks should increase their bargaining power by adopting poison pills. However, the fact that only two commercial banks in the sample are private provides support to the public status argument put forth by Hwang (1993) and Mantecon (2007). They posit that target firms with high level of uncertainty have fewer solicitors because the information acquisition is more costly. In this case, private banks do not find the antitakeover deterrent effect of the poison pill to be beneficial. Public availability of financial information for private banks reduces to some extent the level of uncertainty usually associated with the private non-financial companies. However, privately held banks and privately held non-financial companies lack a public price and do not benefit from analysts' research.

In order to test the impact of bank capitalization at the end of the year prior to poison pill adoption on the decision to subsequently redeem the poison pill, I match all the banks in the sample with banks of similar size with no poison pill in place. I test for differences in performance and main characteristics of the poison pill adopters and the matched banks.
Then, I estimate the following regression equation:

$$\textit{Poison pill adoption}_{\ t} = c_0 + c_1 * \textit{Equity capital ratio}_{i,t-1} + c_2 * \textit{ROA}_{i,t-1} + c_3 * \textit{Revenue Diversification}_{t-1} + c_4 * \textit{Size}_{\ t-1} + c_5 * \textit{Gross domestic product}_{\ t-1} + e_{it,} \quad (1)$$

where *Poison pill adoption* is a dummy defined as the 1 for poison pills subsequently redeemed and 0 otherwise, *Equity capital* is the amount of equity capital of the bank divided by total assets, and *ROA* is the return on total assets. For the second model, I use *ROE* as an alternative measure of profitability. *Gross domestic product* is the real gross domestic product, *Size* is the log of bank's total assets, and *Revenue Diversification* is the revenue Herfindahl-Hirschman index. Following Stiroh (2004), *Herfindahl-Hirschman index* measures the revenue diversification as follows:

$$HHI_{REV} = \left(\frac{NON}{NETOP}\right)^2 + \left(\frac{NET}{NETOP}\right)^2 \quad (2)$$

$$NETOP = NON + NET$$

where *NON* is noninterest income, *NET* is net interest income, and *NETOP* is net operating revenue. As Herfindahl-Hirschman Index (HHI) rises, the bank becomes more concentrated and less diversified. In contrast, a lower Herfindahl-Hirschman Index (HHI) characterizes banks that diversify by expanding the number and type of noninterest income activities. If the interest income and noninterst income activities are weakly correlated, the diversification strategy could result in an improved risk-return performance of the bank.

Table 2 reports the non-parametric test for the differences in performance one year before the poison pill adoption between the pill adopters and the banks without poison pills. The results indicate that poison pill adopters have similar characteristics with non-adopters of poison pills. Danielson and Karpoff (2006) show that poison pill adopters across different industries have a slightly lower operating performance than non-pill adopters. However, the significant difference in operating performance is restricted to the sample of poison pill adopted around mid-1980s. After 1986, poison pill adopters have similar or better performance than non-adopters for the year before adoption. Therefore, the characteristics of the sample of commercial banks with poison pills are in line with the characteristics of the larger sample of firms documented by Danielson and Karpoff (2006). Moreover, the data indicate that the characteristics of poison pill bank adopters have not changed over time. Following Danielson and Karpoff (2006), I test for the differences in bank characteristics between poison pill adopters and banks without poison pills for the period before the Riegle-Neal Act implementation. The results on panel B indicate that the characteristics of banks with pills adopted before the enforcement of the Riegle-Neal Act, in June 1997, are similar with those of the matched sample of banks. Overall, the univariate tests indicate that the characteristics of the poison pill adopters remain similar to those of the matched sample of banks.

Next, I investigate the differences between the sample of 42 banks adopters of poison pills that were subsequently redeemed and the sample of 122 banks adopters that choose not to redeem their poison pills. The results presented in Table 3 indicate that there are no statistical significant differences in terms of size, return on equity, or revenue diversification between the two groups of banks. However, the parametric and nonparametric tests reveal the banks with poison pills that are subsequently redeemed have, on average, a lower return on asset ratio (0.006) and a lower capitalization (0.066) than banks without poison pills. Commercial banks with poison pills in place may not be subject to takeover attempts because the process of incorporating a target with poor performing asset portfolio may jeopardizes the success of the merger. In this case, the benefit of being protected by a poison pill is minimal and the process of redeeming the pill comes as a natural choice. Similarly, lower capitalization can be seen as an antitakover deterrent. The acquisition of a bank with a lower capitalization would result in a lower capitalization of the newly created entity and an increased regulatory scrutiny. Therefore, banks with a lower equity capital ratio for the year before the pill adoption are more likely to subsequently redeem the pills. The univariate results are supported by the results of the logistic regression. The coefficient of equity capital variable is negative and statistically significant. As stated above, lower capitalization increases the likelihood of subsequent poison pill redemption. The coefficient of return on asset is negative but statistically insignificant. Additionally, the results indicate that revenue diversification and size are not significant factors on the decision of subsequently redeeming the pill. The insignificant coefficient of revenue diversification variable suggests that diversification by expanding into lines of business generating noninterest income is not perceived as a takeover deterrent. This argument supports the recent empirical evidence of no improvement in bank performance associated with revenue diversification (Mercieca, Schaek, and Wolfe, 2007). Moreover, it may be possible that, for some banks, the increase in revenue diversification is motivated by managerial desire for empire building. As expected, the coefficient of the gross domestic product variable is positive and statistically significant. Poison pills adopted during periods of economic slowdown are less likely to be subsequently redeemed.

Banks adopt poison pills during periods of reduced takeover activity as a long-term antitakover deterrent.

IV. Conclusion

The adoption of a poison pill by a bank is expected to improve bank's bargaining power during a potential acquisition or merger attempts. The major regulatory changes implemented during the 1990s have also improved the bargaining power of potential target banks. Moreover, the structure of a poison pill adopted by a commercial bank seems to be slightly different than that of non-financial companies. The different, less rigid structure of the poison pill illustrates the fact the hostile bank takeovers are quite rare. I find that commercial banks adopters of poison pills have similar characteristics with bank non-adopters. The results indicate that commercial banks adopt poison pills for reasons other than the performance during the year before the pill adoption. Commercial banks with lower level of capital are more likely to redeem the pills. Pills adopted during periods of economic booms are more likely to be subsequently redeemed.

Appendix 1
Description of poison pills provisions

Adverse person - This provision establishes a general flip-in level applicable to all non-board-approved stock acquisitions, but empowers the board to trigger the pill when a "substantial block" of its stock had been acquired by a person or group posing a risk for the company.

Dead hand - The pill can be redeemed only by the board of the target company. Therefore, a proxy contest is not affecting canceling the poison pill effect. "Dead hand" and "no hand" provisions are invalid under the Delaware law.

Flip in - Under this provision, an acquirer is prohibited from exceeding a threshold level of beneficial ownership of the target's securities (typically 20%)

Inadvertent triggering exception - Poison pills with the inadvertent triggering feature allows the accumulation of stocks above the flip in percentage by the non-board-approved persons or groups whose ownership is considered beneficial.

Permitted offer exception - Under this provision, the flip-in is inapplicable to any acquisition considered to be adequate and in the best interest of the company and its shareholders.

Qualified offer (chewable pill) – the poison pill is not exercised by offers meeting certain criteria

Sunset - The provision stipulates that either the board of directors or the shareholders must review the shareholders right plan every few years to determine whether it should be renewed

TIDE- In 1997, Pfizer developed the Three-year Independent Evaluation (TYDE) rights plan, connecting the pill to an independent board and periodic review.

Table 1

Panel A: Geographic distribution of the poison pill issuer

Year	Northeast	Southeast	Others	Total
1985-1997	67	20	33	120
1997-2004	19	6	19	44
Total	86	26	52	164

Panel B: Poison pill status

Year	Adopted	Redeemed	Amended	In force
1985	2	1	1	0
1986	2	0	1	0
1988	14	2	7	0
1989	44	22	12	0
1990	25	9	8	0
1991	6	3	2	0
1992	4	1	3	0
1993	2	0	2	0
1994	1	0	1	0
1995	7	0	4	2
1996	9	1	6	2
1997	6	0	2	3
1998	11	0	4	7
1999	8	2	2	4
2000	8	1	0	7
2001	10	0	4	6
2002	1	0	0	1
2003	2	0	0	2
2004	2	0	0	2
Total	164	42	59	36

Table 2

Descriptive Statistics
This table presents the summary statistics for variables of the sample of 164 commercial banks with poison pills and 164 matched banks. P-values from t-test and Wilcoxon signed-rank test of difference from zero are reported in parentheses. *, **, and *** indicate statistical significance at the 10, 5, and 1% levels, respectively.

Panel A: Commercial banks adopters of pills between 1985 and 2004

Variable	Mean/ Median Poison Pill Adopters	Mean/ Median Matched Banks	Difference
Equity Capital	0.081	0.077	0.312
	(0.074)	(0.071)	(0.482)
Return on Assets	0.010	0.009	0.563
	(0.009)	(0.009)	(0.938)
Return on Equity	0.120	0.097	0.218
	(0.128)	(0.126)	(0.531)
Revenue Diversification	0.684	0.690	0.627
	(0.673)	(0.678)	(0.696)
N	164	164	

Panel B: Commercial banks adopters of pills between 1985 and 1997

Variable	Mean/ Median Poison Pill Adopters	Mean/ Median Matched Banks	Difference
Equity Capital	0.082	0.071	0.057*
	(0.069)	(0.069)	(0.784)
Return on Assets	0.009	0.008	0.415
	(0.009)	(0.009)	(0.927)
Return on Equity	0.114	0.081	0.187
	(0.125)	(0.124)	(0.714)
Revenue Diversification	0.681	0.692	0.477
	(0.659)	(0.674)	(0.648)
N	120	120	

Table 3

This table presents the summary statistic for variables of 42 commercial banks with poison pills subsequently redeemed and 122 commercial banks with poison pills kept in place. P-values from t-test and MannWhitney test of difference from zero are reported in parentheses. *, **, and *** indicate statistical significance at the 10, 5, and 1% levels, respectively.

Variable	Mean/ Median Redeemed Poison Pill	Mean/ Median Not-Redeemed Poison Pills	Difference
Equity Capital	0.066 (0.065)	0.087 (0.078)	0.000*** (0.000)***
Return on Assets	0.006 (0.008)	0.011 (0.011)	0.080* (0.030)**
Return on Equity	0.116 (0.123)	0.121 (0.131)	0.750 (0.780)
Size	13.99 (14.15)	13.79 (13.73)	0.574 (0.427)
Revenue Diversification	0.673 (0.655)	0.687 (0.678)	0.488 (0.672)
Number of observations	42	122	

Table 4

This table presents results of logistic regressions where the dependent variable is 1 if the poison pill has been subsequently redeemed and zero otherwise. The sample size is 164 banks adopters of poison pills with 42 commercial banks with poison pills subsequently redeemed and 122 commercial banks with poison pills kept in place. The explanatory variables are as follows: *Equity capital* is the amount of equity capital of the bank divided by total assets, *Return* on assets is net income divided by total assets, and Return on Equity is net income divided by capital equity. *Gross domestic product* is the real gross domestic product, and *Diversification* is the revenue Herfindahl-Hirschman index. P-values from t-test and Mann-Whitney test of difference from zero are reported in parentheses. *, **, and *** indicate statistical significance at the 10, 5, and 1% levels, respectively.

Model	(1)	(2)
Constant	-0.338 (0.922)	-0.281 (0.936)
Equity Capital	-38.021** (0.014)	-39.289*** (0.010)
Return on Assets	-18.940 (0.507)	....
Return on Equity	...	0.071 (0.971)
Revenue Diversification	1.536 (0.513)	1.639 (0.486)
Size	-0.157 (0.277)	-0.169 (0.249)
GDP	0.503*** (0.009)	0.496*** (0.009)
Nr. of observations	164	164
-2 Log likelihood	156.458	156.288
Cox and Snell R square	0.168	.156
Nagelkerke R square	0.247	.230

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