THE EFFECT OF POISON PILL SECURITIES ON REIT STOCK PRICES

The announcement of a poison pill anti-takeover defense reduces the wealth of REIT stockholders.

by Willard McIntosh

In recent years, there has been a tremendous increase in the number of hostile corporate takeovers and in the number of measures designed to stop or hinder them. Several anti-takeover measures are known as shark repellents, and they involve amendments to corporate charters that restrict changes in management control. These techniques are proposed by management supposedly to protect the interest of the shareholders by requiring that any takeover attempt be negotiated by management. A particularly potent type of shark repellent is the poison pill.

Studies by Jarrell and Pound in 1986, Maltesta and Walkling and Ryngaert in 1988 have examined the economic effects of poison pills by considering the effects on shareholder wealth when the adoption of this anti-takeover defense is announced. These studies found that such an announcement caused shareholders of the firm to receive significantly negative abnormal returns. This finding is consistent with the hypotheses that the poison pills can deter value-enhancing takeovers, discussed by Easterbrook and Fischel and Gilson in 1981, and that management is acting in its own best interest when trying to prevent any hostile takeover that would remove it from control.

Poison pills, unlike other anti-takeover measures, can be adopted without shareholder approval, This may explain why the results of poison pill studies on the effects on wealth have been consistent, while the results of similar studies of other anti-takover activities have been conflicting and ambiguous. (see Linn and McConnell; DeAngelo and Rice; Jarrell and Poulsen)

Real estate investment trusts (REITs) also have experienced an increase in mergers in recent years. This increase has been attributed, at least in part, to the heightened demand for real estate caused by volatility in capital markets and by active Japanese investors who paid $16.5 billion for real estate in 1988 alone. REITs are concerned that disparities between real estate asset values and stock values are creating opportunities for unfair transactions.

This article examines the effects on wealth from poison pill announcements by 16 publicly traded REITs and finds that the overall effect on wealth is a statistically significant decline in stock price of −0.86 %. The finding of a significant loss of wealth due to the poison pill announcements supports the management entrenchment hypothesis.

Poison Pills

A poison pill, also known as a rights plan, is a dividend distribution of rights or securities with

Willard McIntosh is assistant professor of finance and real estate and director of the Center for Real Estate Studies in the College of Business and Economics at the University of Kentucky. He received a Ph.D. in finance and real estate from the University of North Texas and has worked in the real estate industry for Arthur Rubloff and Co. McIntosh has published articles in numerous academic and professional journals, and he consults with many companies and organizations.

redemption or conversion provisions. It is activated by an unsolicited takeover bid, and it allows shareholders to increase their ownership in the firm by purchasing shares at a substantial discount. A poison pill, as a result, can significantly dilute the ownership for the bidder.

As indicated by Ryngaert, poison pill securities have several important characteristics. First, they are usually adopted without shareholder approval. Second, they significantly increase the cost of transactions that alter the control of the firm. Third, pill securities can be redeemed by the issuing firm's board of directors at a very small cost until an acquiring firm purchases or offers to purchase a large equity position in the firm. These securities therefore force acquiring firms to negotiate with the existing firm's board.

There are two major types of rights plans—flip-over plans and back-end plans. Flip-over plans are the most common. They give shareholders of the issuing firm a right to purchase stock in the surviving corporation at a discount (usually one-half of market value) in the event an acquirer takes control of the issuer. Flip-over plans do not necessarily deal with the risk that an acquirer simply will take control and leave the remaining shareholders in place. Thus, many flip-over plans have a flip-in provision, which allows shareholders of the issuing corporation to receive additional stock in their own corporation, usually at a discount, in the event the acquirer engages in certain types of self-dealing transactions with the issuer or the acquirer obtains a specified percentage of the issuer's stock.

Flip-over plans are designed to permit shareholders to retain an interest in the company, on good economic terms, if a change of control occurs under circumstances that are not approved by the board. They also are designed to discourage acquirers from proceeding unilaterally without negotiating with the board of directors of the target firm.

A smaller number of companies have adopted a form of rights plan, known as a back-end plan, that gives shareholders the right to sell their stock back to the company at a favorable price should an acquirer purchase a specified percentage of the company's stock. Back-end plans guarantee shareholders a market for their stock with favorable terms and protects them from having to remain as minority shareholders if a change of control occurs.

When management adopts a poison pill, it suggests that the anti-takeover measure is in the shareholders' best interest and that the measure will maximize shareholder wealth. This viewpoint has been upheld by the courts. The Delaware Supreme Court in 1986 upheld a ruling by the state's Chancery Court that affirmed the legality of the flip-over rights plan of Household International which contended the directors of the company were exercising their business judgement and acting in the best interest of the firm's shareholders.

However, critics contend that poison pills actually entrench management. Critics state that conflicts of interest following a takeover may lead to a loss of management's compensation and prestige. As a result, management may use a poison pill to stop a change in the control of the firm that will increase the shareholders' wealth. Management also may use a poison pill to hinder a takeover market as a check on management's behavior. If management is afraid of a takeover, reducing the threat will have a negative impact on stock prices.

With an efficient capital market, stock prices will reflect all available information about a firm. As new information becomes available, it will be incorporated into the stock price. An efficient capital market allows us to test two competing hypotheses—the management entrenchment hypothesis and the shareholder interest hypothesis—by examining the stock prices around the announcement of a poison pill.

The management entrenchment hypothesis suggests that poison pills make it less likely that shareholders can receive takeover premiums and benefit from monitoring by the market. Therefore, stock prices should decline when a poison pill is announced.

Alternatively, the shareholder interest hypothesis contends that poison pills are adopted to maximize the price shareholders will receive in change-of-control transactions and that management is acting in the shareholders' best interest by using the poison pill to negotiate a better deal for the shareholders. Therefore, the announcement of a poison pill should increase the stock price.

REITs are a special type of corporation that may qualify as a tax-free intermediary. A REIT is run directly by a board of directors or board of trustees which is responsible for raising capital for the trust, setting investment policy and approving recommendations made by an advisor. REITs may be exposed to a greater potential for agency problems.

Among a series of requirements to maintain their tax-excempt status, REITs must distribute 95% of their annual earnings to shareholders, and they must derive at least 75% of gross income from real estate activities. These requirements place restrictions on REIT management that do not hamper the management of standard corporations. Therefore, we hypothesize that the stock price reaction to the announcement of a poison pill will be less for REITs than for standard corporations. Further, we believe that the examination of the stocks of REITs, which constitute a somewhat homogeneous industry, may provide a strong test of the management entrenchment and shareholder interest hypotheses.

Data and Methodology

Data

We assembled a sample of 17 REITs that, between 1985 and 1989, announced the adoption of a poison pill in the *Wall Street Journal* or over the Dow Jones News Retrieval Service. To test the economic consequences of the adoption of a poison pill, we included in our sample only those firms traded on the New York, American and Over-the-Counter Stock Exchanges. This reduced our final sample to 16

REITs. For each of these REITs, we obtained the daily stock price returns from the files created by the Center for Research in Security Prices (CRSP) at the University of Chicago. (Table 1 lists the REITs that adopted poison pills and were used in our sample; Table 2 indicates that 75% of the poison pill adoptions occurred in 1989.)

Methodology

The standard event study methodology was used to estimate the effects on shareholder wealth from the poison pill adoption. The following market model regression was used to adjust the stock returns for marketwide movements and to isolate the price changes due to the adoption of the pill:

$$R_{it} = a_i + b_i R_{mt} + e_{it} \quad (1)$$

The slope coefficient b_i is the stock's systematic risk and measures the relative tendency of the ith stock's return (R_{it}) to move along with the market (R_{mt}). The CRSP equally weighted market index is the proxy for the market. The term ($a_i + B_i R_{mt}$) represents the average return of the stock i adjusted for the market and risk. Thus, e_{it} measures the abnormal return that is unrelated to the market and the stock's average return.

The coefficients of the market model in (1) were estimated for each REIT using 200 consecutive returns for the period ending 20 days prior to the date of the announcement of the poison pill. For 42 days surrounding the adoption date (−20 to +20), we estimated prediction errors returns:

$$\hat{e}_{it} = R_{it} - (\hat{a}_i + \hat{b}_i * R_{mt}) \quad (2)$$

The prediction errors (residuals or abnormal returns) are the deviations of the actual returns from their predicted or normal returns. When residuals are averaged across all REITs, the resulting statistic, the average residual (APE) or the average prediction error, measures the average abnormal price effect of the event:

$$APE_t = 1/N \sum_{i=1}^{N} \hat{e}_{it} \quad (3)$$

where: N = the number of REITs

We also computed cumulative average prediction errors (CAPEs):

$$CAPE_{\tau,\tau+T} = \sum_{t=\tau}^{\tau+T} APE_t \quad (4)$$

To test for statistical significance of the average prediction errors during the event period, standardized test statistics were developed. Each prediction error was divided by the square root of its estimated forecast variance, forming a standardized prediction error:

$$SPE_{i,t} = PE_{i,t}/s_{i,t}, \quad (5)$$

where:

$$s_{i,t} = s_i[1 + 1/L_i + ((R_{m,t} - \overline{R}_m)^2/\sum_{\tau=1}^{L_i} (R_{m,\tau} - \overline{R}_m)^2)]^{1/2} \quad (6)$$

In this calculation, s_i is the estimated residual standard deviation from REIT i's market model regression, $\overline{R}_m$ is the average market return over the L_i estimation period days and $R_{m,t}$ is the return to the market index at day t.

The standardized prediction error was distributed as a Student-t with (L_i - 2) degrees of freedom. Since L_i was large, the distribution was approximately unit normal in the absence of abnormal performance. A cumulative standardized prediction error

TABLE 1

REIT Poison Pill Announcement Dates for the Period 1985-1989

REIT Name	Announcement Date	Stock Exchange*
Bradley Real Estate Trust	12/06/89	OTC
BRE Properties	08/14/89	NA
Chicago Dock & Canal Trust	07/21/88	OTC
Continental Mortgage & Equity Trust	03/13/89	OTC
Federal Realty Investment Trust	04/13/89	NA
Hollywood Park Realty Enterprises	09/15/86	OTC
HRE Properties	10/28/88	NA
ICM Property Investors Inc.	07/18/89	NA
Income Opportunity Realty Trust	04/10/89	NA
MGI Properties Inc.	06/21/89	NA
Property Trust of America	03/13/89	OTC
Santa Anita Realty Enterprises	06/15/89	NA
Sizeler Property Investors	05/03/89	NA
Transcontinental Realty Investors	03/13/89	NA
Vinland Property Trust	03/13/89	OTC
Wedgestone Financial	09/11/85	NA

**NA represents REITs that are traded on the New York or American Stock Exchanges while OTC represents REITs that are traded over-the-counter.*

for testing hypotheses about T-day performance was formed as:

$$CSPE_{i,(\tau,\tau+T)} = 1/\sqrt{T} \sum_{t=\tau}^{\tau+T} SPE_{i,t}. \quad (7)$$

The cumulative standardized prediction error also was distributed unit normal for large L_i.

Invoking the assumption of cross-sectional independence, the following statistics tested whether average performance differed from zero:

$$t_t = \sqrt{N}/N \sum_{i=1}^{N} SPE_{i,t}, \quad (8)$$

these statistics tested for cumulative performance:

$$t_{(\tau,\tau+T)} = \sqrt{N}/N \sum_{i=1}^{N} CSPE_{i,(\tau,\tau+T)}. \quad (9)$$

TABLE 2

Number of REIT Poison Pills by Year for the Period 1985-1989

Year	Number of Poison Pills	Percent
1985	1	6.3
1986	1	6.3
1987	0	0.0
1988	2	12.5
1989	12	75.0

Empirical Results

The average standardized prediction errors (ASPEs) were generally positive during the 20 days prior to the announcement of the poison pill (Table 3). The cumulative average standardized prediction errors (CASPEs) became more positive as the event period approached. However, during the event period (days −1 and 0), the ASPEs became negative. The ASPE on the event date (day 0) was negative and significant. The ASPEs remained negative for two days following the announcement of the adoption of a poison pill. Finally, on day 3 following the poison pill announcement, the ASPEs became positive, and the CASPEs began to return to the level they held prior to the poison pill announcement.

The significant negative sign of the prediction error reaction indicated that a poison pill was

TABLE 3

Average and Cumulative Average Standardized Prediction Errors Surrounding the Announcement of a Poison Pill Adoption for a Sample of 16 REITs

Day Relative to Poison Pill Adoption	Average Standardized Prediction Error	t-stat	Percent Negative	Cumulative Average Standardized Prediction Error
−20	0.36306	1.4522	18.75	0.09346
−15	0.36904	1.4762	43.75	0.07979
−10	−0.23408	−0.9363	62.50	0.45954
− 9	0.05801	0.2320	43.75	0.51755
− 8	0.34277	1.3711	43.75	0.86032
− 7	0.40700	1.6280	56.25	1.26733
− 6	0.14222	0.5689	43.75	1.40955
− 5	−0.13119	−0.5248	62.50	1.27836
− 4	0.15079	0.6032	37.50	1.42915
− 3	0.02315	0.0926	43.75	1.45230
− 2	0.94468	3.7787*	37.50	2.39698
− 1	−0.02829	−0.1131	56.25	2.36869
0	−0.58507	−2.3403*	43.75	1.78362
1	−0.41582	−1.6633	68.75	1.36781
2	−0.84114	−3.3646*	75.00	0.52667
3	0.75259	3.0103*	18.75	1.27925
4	0.68403	2.7361*	56.25	1.96328
5	0.08403	0.3361	56.25	2.04731
6	−0.12311	−0.4925	50.00	1.92419
7	0.60380	2.4152*	31.25	2.52799
8	−0.28770	−1.1508	50.00	2.24029
9	−0.30549	−1.2219	62.50	1.93480
10	0.16267	0.6507	43.75	2.09747
15	0.28293	1.0958	26.67	1.98231
20	0.33773	1.2637	35.71	2.31785

**Indicates significance at the .05 level.*

detrimental to the wealth of the shareholders. This finding is consistent with the results of earlier studies by Jarrell and Pound (1986), Malatesta and Walkling (1988) and Ryngaert (1988). The finding also supports the management entrenchment hypothesis.

The average residual on the announcement date was −0.86%, which is similar to the −0.93% result found by Malatesta and Walkling in 1988. Thus, it appears that there is very little difference in the percentage stock price change for REITs and standard corporations when the adoption of a poison pill is announced.

Conclusions

REIT poison pill defenses appear to reduce stockholder wealth, which provides support for the management entrenchment hypothesis. Stock prices decline upon the announcement of a poison pill defense when REITs are perceived as takeover targets. These stock price declines represent statistical rejection of the theory that, on average, these types of anti-takeover measures benefit shareholders. Further, it appears that the percentage decline in prediction errors is very similar to the declines experienced by standard corporations that announce adoption of a poison pill.

NOTES

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