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Poison Put Bonds: An Analysis of Their Economic Role

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ABSTRACT

This article examines the effect of issuing debt with and without "poison put" covenants on outstanding debt and equity claims for the period 1988 to 1989. The analysis shows that "poison put" covenants affect stockholders negatively and outstanding bondholders positively, while debt issued without such covenants has no effect. The study also finds a negative relationship between stock and bond returns for firms issuing poison put debt. These results are consistent with a "mutual interest hypothesis," which suggests that the issuance of poison put debt protects managers and, coincidentally, bondholders, at the expense of stockholders.

A CONTRACTUAL INNOVATION, KNOWN generically as "poison puts" or "super poison puts," has been introduced in the corporate bond market in recent years. The two principal covenants devised are put options and coupon adjustments triggered by the occurrence of "risk events" like hostile takeovers, acquisition of large stakes in firms (e.g., 30 percent), leveraged buyouts, and leveraged recapitalizations. One alleged purpose is to insulate managers from the market for corporate control. Alternatively, these covenants could be introduced to shelter bondholders from reductions in bond value that sometimes occur concurrently with corporate control activity. This article examines the effect on bondholder and stockholder wealth of issuing debt with these provisions and draws inferences about the true economic roles that they perform.

Section I of the article describes the possible economic roles of event risk covenants and the implications of the issuance of these bonds for the value of the firm's stock and outstanding debt. Section II describes the sample and data used in this study. Section III outlines the methodology for assessing stockholder and bondholder wealth effects. Finally, Section IV presents the results of the empirical tests, and Section V concludes.

I. Economic Roles of Event Risk Covenants

Event risk covenants or "poison puts" could be included in corporate debt for three reasons. First, poison puts, as the name suggests, could be designed to

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make firms less attractive as takeover targets and thus provide an additional mechanism for strengthening managerial resistance to hostile bids. This view will be termed the "entrenchment hypothesis." This hypothesis parallels one of the rationalizations for poison pills discussed by Malatesta and Walkling (1988) and Ryngaert (1988). Puts and related provisions serve this purpose only if they impose some cost on prospective bidders. Such a cost could be explicit in the form of a put price above par or implicit if it increases the bidder's costs of obtaining additional financing. Prospectuses of bonds with poison puts frequently include statements like:

> *Since the events described in this section could be expected to occur in connection with certain forms of takeover attempts, these provisions could deter hostile or friendly acquisitions of the Company where the person attempting the acquisition views itself as unable to finance the purchase of the principal amount of the Notes which may be tendered to the Company upon occurrence of a Designated Event.*[1]

The entrenchment hypothesis predicts a negative stock price reaction at the issue announcement of protected bonds. The entrenchment hypothesis has no predicted impact on the value of an issuing firm's outstanding debt.[2]

Jayaraman (1990) attempts to test the entrenchment hypothesis by examining the impact on stockholder wealth of 25 poison put bond issues during the period 1986 to 1988. The average abnormal stock return for his sample is -0.99 percent at the time of the announcement, and this figure is marginally significant statistically. Jayaraman does not make a direct comparison of protected and unprotected issues from his sample period. Jayaraman reports that the average abnormal stock return for protected debt issued between 1986 and 1988 is statistically more negative than the average return resulting from straight debt issuance reported by Eckbo (1986) for 1964 to 1981, but it is not different from the average return for straight debt issuance reported by Dann and Mikkelson (1984) for 1970 to 1979. None of the debt issues in Eckbo's and Dann and Mikkelson's samples contained poison puts.

A second potential reason for event risk covenants is to protect bondholders from wealth transfers that allegedly accompany debt-financed takeovers and recapitalizations. This would reduce the probability and extent of expropriation of bondholder wealth, rather than protect incumbent managers. This reason will be called the "bondholder protection hypothesis."[3] If puts served this purpose, their inclusion would not reduce the probability of *all* takeovers. They will only protect against takeovers in which wealth transfers are a consideration.

[1]This passage is taken from the prospectus of the 10 $^3/_8$ percent notes issued by Grumman Corporation that mature in 1999.

[2]This assumes the firm is currently not in financial distress. In cases of financial distress, a takeover may add value to bondholders by reducing potential bankruptcy costs. This is not the case for any issues in our sample.

[3]For additional discussion of this role, see Lehn and Poulsen (1991) and Cook and MacMinn (1992).

The reaction of the firm's existing bonds under the bondholder protection hypothesis depends on whether or not protection to them has been increased. If event risk covenants extend protection to other bond issues, then these bonds should appreciate in value because risk has been reduced. Poison puts might extend event risk protection if, by themselves, they reduce the probability of wealth-transferring takeovers. Puts might also extend event risk protection to outstanding debt if the outstanding debt requires redemption or consent before payment can be made to the holders of the put bond.[4] If puts and related covenants do not increase the protection of existing debt, then the bondholder protection hypothesis has no implication for the prices of the firm's outstanding debt.

The impact on stock returns reflects the net of two opposite influences. First, takeovers motivated primarily by wealth transfers are hindered, and shareholders lose the potential to receive these transfers. Second, debt with event risk covenants is issued at an interest cost that is lower than unprotected debt. Managers acting in the interests of shareholders would choose to issue bonds with poison puts only if the interest cost savings outweigh the foregone wealth transfers. Thus, the bondholder protection hypothesis predicts a nonnegative stock price reaction to issues of protected debt.[5]

Evidence on the validity of the bondholder protection hypothesis can be found in two types of studies. The first examines the valuation of put provisions by using the difference in yield spreads at the offering date for samples of protected and unprotected bonds. Crabbe (1991) finds that including a moderate degree of event risk protection reduces the yield by 25 to 30 basis points. Fields, Kidwell, and Klein (1991) find that including event risk protection reduces bond yields by about 25 basis points for bonds offered after the R. J. Reynolds/Nabisco (RJR) buyout. Prior to RJR, they find that the inclusion of a put or other event risk protection did not have a significant effect on bond yields. Bae, Levy, and Wannemacher (1991), however, find that event risk protection has not significantly reduced bond yields, even after RJR.

The second type of study assesses the extent of wealth transfers from bondholders in conjunction with leveraged buyouts. Marais, Schipper, and Smith (1988) find no evidence of bondholder losses, while Warga and Welch (1993) find evidence of small losses. Asquith and Wizman (1990) and Cook, Easterwood, and Martin (1992) document that the magnitude of bondholder losses depends on the covenant protection. Protected bonds in these two

[4]About 15 percent of the prospectuses for our sample specifically mention such covenants in the issuer's other debt. In all but one of these instances, the bond with the poison put is subordinated debt. In some cases, the other debt is identified as bank loans; in other cases, the other debt is simply described as senior indebtedness.

[5]To the extent that factors other than the presence of event risk covenants might cause a negative equity reaction to the announcement of any new bond issue, the bondholder protection hypothesis predicts that the reaction is no more negative for bonds with event risk covenants than bonds without such covenants. The entrenchment hypothesis predicts that bonds with event risk covenants will have a more negative stock price reaction than bonds without these covenants.

studies did not experience losses, while unprotected debt experienced significant losses. These results suggest that an adequate contracting technology may have existed prior to the widespread use of poison puts.

The entrenchment and bondholder protection hypotheses have been presented thus far as mutually exclusive. However, the interests of managers and bondholders may be complementary under some circumstances. Managers undertake actions that protect their positions. By coincidence, these actions could also offer benefits to bondholders. In this case, the interests of managers and bondholders would be aligned in that both wish to guard against hostile, debt-financed takeovers. Consequently, the interests of managers and bondholders would conflict with those of shareholders. This view is termed the "mutual interest hypothesis," and it suggests that stock price reactions could be negative while the price reaction of existing bonds could be positive. In addition, the wealth effects for debt and equity could be negatively correlated because more protective puts would make the stock price response more negative and the price response for existing debt more positive. No previous study has tested the mutual interest hypothesis.

The notion that managers and bondholders have mutual interests is supported by the literature that argues that they have similar claims on the firm. For example, Amihud and Lev (1981) find evidence for their hypothesis that conglomerate acquisitions are motivated by management's desire to reduce the risk associated with their own income by undertaking actions that are inconsistent with shareholder wealth maximization. Since managers and bondholders similarly benefit from risk-reducing activities like decreasing the likelihood of leverage increasing takeovers, the interests of managers and bondholders are aligned against the interests of shareholders.

This study will examine all three hypotheses. The article differs from earlier studies of put bonds in four important ways. First, wealth effects for stock and outstanding bonds are examined to discriminate among the three hypotheses. Second, this article uses a sample of bond registrations from 1988 to 1989, a period when event risk covenants were commonplace. Third, this study uses the sample of all bond registrations, both with and without puts, to contrast the market reactions. This direct comparison using protected and unprotected bonds from the same time period provides a more accurate assessment of the valuation effects of poison puts. Fourth, this study examines returns around both registration and offering dates for both stock and outstanding bonds of firms issuing new bonds with event risk protection. This is necessary since information on covenants may not be fully known at the time of a shelf registration.

II. Data and Sample Description

For inclusion in the sample, firms must satisfy the following requirements:

1. The firm issued publicly traded straight debt in 1988 or 1989. Thus, the sample includes all issues both registered and issued in those two years.

The sample also includes bonds issued in 1988 or 1989 but registered in 1986 or 1987.

2. The firm was listed on either the New York Stock Exchange or American Stock Exchange at the registration and offering dates for the issue.
3. Banks and electric utilities are excluded.
4. Exchange offers, secondary offerings, and simultaneous issues of debt and equity are excluded.
5. The Securities and Exchange Commission's (SEC) *Registered Offering Statistics* (ROS) *Tape*, Securities Data Corporation's (SDC) *Corporate New Issues File*, or *Moody's Bond Survey* list the bond as issued. The *ROS Tape* is used for registrations or issues between January and November of 1988.[6] Information from Securities Data is used for registrations or offerings in December 1988 or in 1989. *Moody's Bond Survey* is used as a supplemental source for both years.

The first requirement focuses on the period during which the poison put developed from a rarely encountered to a widely employed covenant. The second requirement restricts the sample to those firms that have stock returns available on the Center for Research in Securities Prices (CRSP) tape. The third requirement eliminates firms that have regulatory barriers that effectively preclude the possibility of hostile takeovers. The fourth requirement restricts the sample to "routine" debt issues where the effects of security type may be examined. Finally, the fifth criterion restricts the sample to bonds that were in fact issued and eliminates withdrawn offerings from the sample. This requirement is imposed so that the presence of the event risk covenant could be verified. In total, 237 registrations meet these requirements.

SDC provided a list of bonds with event risk covenants. This list was supplemented by searching *Moody's Bond Survey* and *Moody's Industrial News Reports* for new offerings with poison puts or other event risk covenants. The resulting list was checked for unique and identifiable registration dates and for confounding events. Finally, a prospectus was obtained so that the presence of the event risk covenant could be verified. The final list of 63 registrations that meet these requirements will be termed the "put sample." Three of these registrations led to the issue of bonds that included a schedule of coupon adjustments triggered by a takeover; the remaining 60 registrations led to the issue of 61 bonds that contain a put option for the issuer that is exercisable in the event of a takeover. The 174 registrations that led to the issue of 210 bonds that do not contain event risk protection are termed the "nonput sample." Moody's manuals were examined to verify that event risk protection was not present for the bonds issued from these registrations.

[6]The SEC ceased distribution of this tape after 1988. The 1988 version shows very little issue activity in December, although other data sources show considerably more.

III. Methodology for Assessing Wealth Effects

A. Stock Returns

The wealth effects of a new debt issue could occur on either the date the new securities are registered with the SEC or the date they are offered to the market. Five sources were utilized to identify the registration date. First, the *ROS Tape* provides registration dates for filings and offerings between January and November of 1988. Second, SDC's *Corporate New Issues File* provides registration dates for about half of the offerings in December 1988 and the calendar year 1989. Finally, *Investment Dealer's Digest Corporate Financing Directory*, *Standard & Poor's Corporation News*, and the *Wall Street Journal* also provide registration dates. None of these sources supplies registration dates for every issue in the sample. All five sources were utilized to obtain as many filing dates as possible. These five sources of registration dates do not always agree on the specific date for a particular issue. The earliest of the available dates is treated as Day 0. To resolve most of these conflicts, a three-day window (Days -1, 0, and $+1$) is used for analyzing stock returns.[7] The *ROS Tape* and SDC's *Corporate New Issues File* supply a complete list of offering dates.

Event study methods are used to calculate abnormal stock returns pertaining to the issuance of bonds with and without poison put provisions. For each security j, an abnormal return $AR_{jt[-1,+1]}$ is calculated over the three-day event window as follows:

$$AR_{jt[-1,+1]} = \sum_{t=-1}^{+1} \left[R_{jt} - (\alpha_j + \beta_j * B_{mt}) \right] \tag{1}$$

where R_{jt} is the rate of return of security j on event date t, and R_{mt} is the rate of return for the CRSP value-weighted index also for date t. The coefficients are the respective ordinary least squares estimates of the market model regression over an estimation period from $t = -110$ to -21.

Following Patell (1976) and Dodd and Warner (1983), the cross-sectional test of abnormal returns is applied to a standardized abnormal return in the following manner:

$$V_{jt} = \frac{AR_{jt[-1,+1]}}{s_j \sqrt{C_{jt}}}, \tag{2}$$

where s_j is the standard deviation of the residuals during the estimation period,

$$C = 1 + \frac{1}{T} + \frac{\left(R_{mt} - \overline{R_m}\right)^2}{\sum_{t=1}^{T} \left(R_{mt} - \overline{R_m}\right)^2}, \tag{3}$$

[7] For example, a *Wall Street Journal* announcement date might precede, coincide with, or follow the *ROS* filing date (the date the SEC receives the registration papers).

T = the number of days in the estimation period, and

$$\overline{R_m} = \frac{1}{T}\sum_{t=1}^{T} R_{mt}. \tag{4}$$

V_{jt} is distributed as a Student's t-statistic with $T - 2$ degrees of freedom. The cross-sectional test statistic is calculated as

$$Z = \sum_{j=1}^{N} \frac{V_{jt}/(d_2 - d_1 + 1)^{1/2}}{\left[(T_j - 2)/(T_j - 4)\right]^{1/2}}, \tag{5}$$

where the abnormal return is cumulated from d_1 (Day -1) through d_2 (Day $+1$). An adjustment to the standardized abnormal return is performed because the abnormal return covers a three-day window but is standardized by the volatility of daily residuals from the estimation period.

B. Bond Returns

Corporate bonds are traded "and interest" such that the seller receives the trade price plus interest accrued from the last coupon date. Bond returns for our sample are calculated as follows:

$$CR_{i,t} = \left[\frac{F_{i,t} + C_{i,t}}{F_{i,t-1}}\right] - 1 \tag{6}$$

where $CR_{i,t}$ is the rate of return of the ith sample bond from the close of trading at month $t - 1$ to the close at month t; $C_{i,t}$ is the coupon (if any) paid during month t; and $F_{i,t}$ is the flat price of the bond at the end of month t. The price $F_{i,t}$ is calculated as follows:

$$F_{i,t} = T_{i,t} + C_{i,t} * (N_{i,t}/180) \tag{7}$$

where $T_{i,t}$ is the last trade price or dealer quote from Standard & Poor's *Bond Guide* for the bond in month t and $N_{i,t}$ is the number of days (based on each month having an even thirty days) which have elapsed since the last coupon payment for the bond.[8]

Abnormal returns are computed using a market-adjusted return, calculated as the difference between the sample bond's return and a return on a comparable maturity corporate bond index. The sample bond's return is matched with the Lehman Intermediate-Term Corporate Bond Index if the bond's maturity is ten or fewer years. The Lehman Long-Term Corporate Bond Index is used if the bond's maturity is greater than ten years. This procedure adjusts for the impact of interest rate and term structure changes. Use of a corporate bond index, rather than a Treasury index, eliminates the

[8]Standard & Poor's reports a trade price at each month's end if one is available. If no trade occurred, then a bid price is reported. If no bid is available, then an ask price is provided. Most of the returns in this study use two bid prices.

need to model each bond's normal default risk premium. In order to test the null hypothesis that the average market-adjusted return on event month t is equal to zero, a t-statistic is computed as:

$$t = \frac{CR - IR}{s/\sqrt{n}} \tag{8}$$

where $CR - IR$ is the average difference in sample and index returns (or the market-adjusted returns), s is the cross-sectional standard deviation of these market-adjusted returns, and n is the number of observations.

IV. Results

A. *Univariate Analysis of Wealth Effects*

A.1. Equity Holders

Table I presents a univariate analysis of the average three-day abnormal stock returns for the full sample and several partitions of the sample. Discussion of these results begins with registration date reactions. These results are displayed in the three columns on the left in Panel A. Questions may be raised about the informativeness of registration date returns for shelf registrations, exhibited in the three columns on the left in Panel B, because announcements of this type are often vague about the details of the securities to be issued (in particular, the covenants to be included). In response to these concerns, offering date reactions are examined for shelf issues in the three columns on the right in Panel B. Finally, results for the full sample, put sample, and nonput sample are presented using registration dates for non-shelf issues and offering dates for shelf issues. These results are presented in the three columns on the right in Panel A.

The left-hand columns of Panel A report that the average abnormal return for the 237 qualifying registrations is -0.10 percent, which is not statistically different from zero. The median figure is similarly close to zero. Breaking the 237 registrations up into nonput and put samples indicates that reactions are somewhat different. The mean abnormal return for the 63 put registrations is -0.52 percent and is significantly different from zero at the 10 percent level. In contrast, the mean abnormal return for the 174 nonput registrations is 0.05 percent and is not significantly different from zero. However, the average registration date reactions for the put and nonput samples are not significantly different from each other. A sum of ranks test for differences in the distributions of abnormal returns for put and nonput samples similarly finds no difference.

These numbers may not reflect the "true" impact of the event for two reasons. First, registration dates may not accurately indicate the date on which the market becomes informed about the presence of event risk covenants for shelf registrations. Since a shelf registration filing only reserves the right to issue unspecified debt securities within a two-year period,

Table I

Abnormal Stock Returns around Registration and Offering Dates for Firms that Issued Bonds during 1988 and 1989

The left-hand columns report three-day abnormal returns around registration dates for both shelf and nonshelf issues. The right-hand columns report three-day abnormal returns around registration dates for nonshelf issues and offering dates for shelf issues. For the full sample and partitions of the sample, each cell reports a mean or median abnormal return. Each cell also reports a z-statistic for the hypothesis that the mean equals zero or an approximate z-statistic for the signed rank test. The z-statistics are in parentheses underneath the return. For the rows that report differences in means or medians for two of the partitions, the figure in parentheses is a t-statistic for the hypothesis that the means are equal or an approximate z-statistic for a sum of ranks test for the hypothesis that the two partitions have the same distribution.

	Registration Dates Only			Registration Dates for Nonshelf Issues and Offering Dates for Shelf Issues		
	N	Mean (%)	Median (%)	N	Mean (%)	Median (%)
Panel A: Abnormal Returns for the Full, Nonput, and Put Samples						
Full sample	237	−0.10 (−0.58)	−0.06 (−0.79)	274	−0.11 (−0.73)	−0.01 (−0.76)
Nonput sample	174	0.05 (0.25)	0.15 (0.00)	210	0.07 (0.36)	0.14 (0.44)
Put sample	63	−0.52* (−1.72)	−0.34 (−1.55)	64	−0.70*** (−2.76)	−0.38** (−2.42)
Difference between put and nonput issues		0.57 (1.47)	0.49 (1.29)		0.77** (2.44)	0.52** (2.31)
Panel B: Abnormal Returns for the Shelf and Nonshelf Partitions of the Put Sample						
Shelf issues	38	−0.28 (−0.71)	0.13 (0.70)	39	−0.57** (−2.03)	−0.33* (−1.64)
Nonshelf issues	25	−0.90* (−1.87)	−0.48* (−1.82)	25	−0.90* (−1.87)	−0.48* (−1.82)
Difference between shelf and nonshelf put issues		0.62 (0.99)	0.61 (1.29)		0.33 (0.54)	0.15 (0.67)
Panel C: Abnormal Returns for the Shelf and Nonshelf Partitions of the Nonput Sample						
Shelf issues	124	−0.05 (−0.22)	−0.12 (−0.29)	160	−0.01 (−0.07)	0.06 (0.23)
Nonshelf issues	50	0.31 (0.66)	0.43 (0.38)	50	0.31 (0.66)	0.43 (0.38)
Difference between shelf and nonshelf, nonput issues		−0.36 (−0.69)	−0.55 (−0.46)		−0.32 (−0.63)	−0.37 (−0.48)

***Significantly different from zero at the 0.01 level.
**Significantly different from zero at the 0.05 level.
*Significantly different from zero at the 0.10 level.

the registration of a shelf issue could convey considerably less information than the registration of a nonshelf issue. Concurrent with a nonshelf registration, a firm typically circulates a prospectus that outlines the details of the proposed issue including the presence and type of event risk protection. Prospectuses frequently are not circulated concurrently with or immediately following shelf registrations because the actual issue often follows the registration by many weeks or months. Thus, the extent to which the market can anticipate the type of security that will be issued (i.e., the presence of event risk covenants) is likely to be considerably less for shelf filings. Second, shelf registrations do not always lead to security issues and thus do not reflect the full economic effect even if covenants are disclosed at registration.

To address the possibility that shelf and nonshelf registrations contain different information, two steps are taken. First, the put and nonput samples are separated into shelf and nonshelf subsets for some of the analysis. Panel B presents the means and medians for the shelf and nonshelf partitions of the put sample. Similarly, Panel C presents the means and medians for these two partitions of the nonput sample. Second, offering date reactions are analyzed for the shelf issues in the right-hand columns of Table I. A comparison of the right- and left-hand columns of this table may allow us to determine whether offering dates or registration dates contain more information about the inclusion of event risk covenants.

Panel B indicates that the registration date reactions for the two subsets of the put sample are somewhat different. The average abnormal return for the nonshelf registrations is -0.90 percent and is significantly different from zero. The average reaction for the shelf registrations is small in absolute value and not statistically different from zero. The left-hand columns of Panel C present figures for the shelf and nonshelf partitions of the nonput sample using registration dates. Neither of these averages is different from zero. The average abnormal return for the nonshelf, put issues is statistically different at the 10 percent level from the average for the nonshelf, nonput issues. In contrast, there is no difference in the registration date reactions for put and nonput, shelf issues. Thus, these results indicate that the registration date reactions for the nonshelf, put issues is different from the averages for the other three partitions of the sample.

Due to uncertainty about the market's ability to anticipate the inclusion of event risk covenants and uncertainty over whether securities will ultimately be issued, abnormal returns are also estimated for the offering dates for the shelf sample. Unlike the registration date results, the columns on the far right of Panel B show that the average price reaction at offering date for the put issues that were shelf registrations is -0.57 percent and significantly different from zero. The median is -0.33 percent and is also different from zero. Although these offering date results are slightly smaller in absolute value than the abnormal returns at the registration date for the nonshelf registrations, neither parametric nor nonparametric tests show the returns to be different from each other. Thus, when offering dates are used for the shelf sample and registration dates for the nonshelf sample, both the shelf and

nonshelf returns are statistically different from zero but insignificantly different from each other.

In contrast to the significant negative returns for the put issues, the right-hand columns of Panel C indicate that there is no reaction for the shelf, nonput sample. Unlike the put sample, the reactions of shelf offerings and registrations for the nonput sample are not different from each other. The average reaction for the shelf, put issues is significantly different at the 10 percent level from the average reaction for the shelf, nonput issues.[9] Based on these findings, the offering date appears to be the informative date for the shelf, put issues. Consequently, the remaining analysis of stock returns will use the registration date as the event date for nonshelf registrations and the offering date for shelf registrations.

The three columns on the far right in Panel A present average abnormal returns using the mixture of registration dates and offering dates.[10] In this case, the average abnormal return for the put sample is -0.70 percent and significantly different from zero at the 1 percent level. In contrast, the average abnormal return for the nonput sample is 0.07 percent. Similarly, medians are -0.38 percent for the put sample and 0.14 percent for the nonput sample. A t-test for difference in means and a sum of ranks test for difference in distributions both indicate a difference significant at the 2 percent level. The findings in Table I for stock returns are consistent with either the entrenchment hypothesis or the mutual interest hypothesis; they are not, however, consistent with the bondholder protection hypothesis. To discriminate between the entrenchment and mutual interest hypothesis, bond returns must also be examined.

A.2. Bondholders

Table II presents abnormal returns to outstanding bonds for the subset of firms that issued a bond and also had outstanding publicly traded debt. Results are included in Panel A for the put sample, the nonput sample, and the full sample. Panel B displays results separately for shelf and nonshelf issues for the put sample, and Panel C displays results separately for shelf and nonshelf issues of the nonput sample. The three left-hand columns present results for the month of registration; the three columns on the right present results using the registration month for nonshelf issues and the offering month for shelf issues. Thus, this format parallels the presentation of abnormal stock returns in Table I.

Based on the right-hand columns of Table II, 45 of 63 firms (71 percent) in the put sample had 139 outstanding bonds, 125 of 174 firms (72 percent) in the nonput sample had 738 outstanding bonds, and 170 of 237 firms (72

[9]Nonparametric tests, however, indicate no difference in distributions between put and nonput issues for shelf issues.

[10]As explained earlier, multiple issues from a single shelf registration increase the number of observations as one moves from the left to the right columns of Table I. For example, Arkla issued two bonds with poison puts based on a single shelf registration. Thus, the put sample increases from 63 to 64 when offering dates are used for shelf registrations.

Table II

Abnormal Bond Returns around Registration and Offering Dates for Firms that Issued Bonds during 1988 and 1989 and Had Outstanding Publicly Traded Debt

The left-hand columns report event month abnormal returns around registration dates for both shelf and nonshelf issues. The right-hand columns report event month abnormal returns around registration dates for nonshelf issues and offering dates for shelf issues. The abnormal bond return for each firm is the equally weighted average of the abnormal returns for that firm's bonds. The abnormal return for each bond is calculated as the event month raw return for each corporate bond minus the Lehman Corporate Bond Index return for that month. The Lehman Intermediate-Term Index is used when the corporate bond maturity is ten or fewer years; the Lehman Long-Term Index is used for corporate bonds with maturities greater than ten years. For the full sample and partitions of the sample, each cell reports a mean or median abnormal return. Each cell also reports a t-statistic for the hypothesis that the mean equals zero or an approximate z-statistic for the signed rank test. The z-statistics are in parentheses underneath the return. For the rows that report differences in means or medians for two of the partitions, the figure in parentheses is a t-statistic for the hypothesis that the means are equal or an approximate z-statistic for a sum of ranks test for the hypothesis that the two partitions have the same distribution.

	Registration Dates Only			Registration Dates for Nonshelf Issues and Offering Dates for Shelf Issues		
	N	Mean (%)	Median (%)	N	Mean (%)	Median (%)
Panel A: Abnormal Returns for the Full, Nonput, and Put Samples						
Full sample	170	0.15*	0.15**	194	0.09	0.16**
		(1.70)	(2.06)		(1.06)	(1.97)
Nonput sample	125	0.13	0.22	146	−0.03	0.06
		(1.30)	(1.57)		(−0.30)	(0.16)
Put sample	45	0.24	0.12	48	0.45***	0.51***
		(1.20)	(1.25)		(2.91)	(3.62)
Difference between put and nonput issues		−0.11	0.10		−0.48**	−0.45***
		(−0.44)	(0.51)		(−2.50)	(−3.04)
Panel B: Abnormal Returns for the Shelf and Nonshelf Partitions of the Put Sample						
Shelf issues	29	0.20	0.06	32	0.52***	0.41***
		(0.92)	(0.68)		(5.03)	(4.11)
Nonshelf issues	16	0.32	0.79	16	0.32	0.79
		(0.76)	(1.03)		(0.76)	(1.03)
Difference between shelf and nonshelf put issues		−0.12	−0.73		0.20	−0.38
		(−0.12)	(−0.48)		(0.44)	(−0.05)

Table II—*Continued*

Panel C: Abnormal Returns for the Shelf and Nonshelf Partitions of the Nonput Sample

	Registration Dates Only			Registration Dates for Nonshelf Issues and Offering Dates for Shelf Issues		
	N	Mean (%)	Median (%)	*N*	Mean (%)	Median (%)
Shelf issues	97	0.08 (0.86)	0.22 (1.44)	118	−0.10 (−0.97)	0.04 (0.14)
Nonshelf issues	28	0.27 (1.01)	0.25 (0.77)	28	0.27 (1.01)	0.25 (0.77)
Difference between shelf and nonshelf, nonput issues		−0.19 (−0.39)	−0.03 (−0.04)		−0.37 (−1.48)	−0.21 (−1.05)

***Significantly different from zero at the 0.01 level.
**Significantly different from zero at the 0.05 level.
*Significantly different from zero at the 0.10 level.

percent) in the full sample had 877 outstanding bonds. The remaining firms had no outstanding publicly traded debt at the event date.[11] Returns for these firms and their bonds may either be presented using each bond as the unit of analysis or using each event as the unit of analysis. Focusing on the event as the unit requires either averaging the bond returns for each event or selecting a single outstanding bond when more than one exists. Results for the outstanding bonds are computed using all bonds, using an equally weighted average of the outstanding bonds, and using a par value weighted average. Results are qualitatively similar for all three methods. For brevity, only the equally weighted averages are presented.

The left-hand columns in Table II indicate that registration month average abnormal returns are generally positive but insignificant. The insignificant abnormal bond returns pertaining to registration dates are consistent with the stock returns for shelf registrations presented in Panel B of Table I. The figures for the put and nonput samples are not significantly different from each other. Breaking the put and nonput samples up according to the use of shelf registration procedures (as shown in the left-hand columns of Panels B and C) reveals no difference in registration month reactions for put and nonput issues even when registration procedure is taken into account. Surprisingly, the nonshelf registrations also have insignificant abnormal bond returns.

The mixture of registration month returns for nonshelf issues and offering month returns for shelf issues presented in the right-hand columns of Table

[11] In addition, one firm in the put sample that made a nonshelf issue had a contaminating event in the registration month and was deleted from the analysis of bond returns.

II yields stronger results.[12] Panel A shows that both the average and median returns for the nonput sample are close to zero. In contrast, the comparable figures for the put sample are positive and significantly different from zero at the 1 percent level. The put and nonput averages are different from each other at the 1 percent level. A sum of ranks test also indicates that the distribution of abnormal bond returns for put and nonput samples are different. Finally, a comparison of Panels B and C reveals that the offering month reaction of 0.52 percent for shelf, put issues is significantly different from the average reaction of −0.10 percent for the shelf, nonput issues at the 1 percent level.

The evidence in this table indicates that outstanding bonds do appreciate in response to the issue of new bonds with event risk covenants. Taken independently of the stock returns, the bond results are consistent with either the bondholder protection or the mutual interest hypothesis. The combined finding of negative abnormal stock returns and positive abnormal bond returns for firms issuing poison put debt supports the mutual interest hypothesis. That is, the stock and bond returns are consistent with the view that the issue of poison put debt serves to protect managers and bondholders from hostile takeovers at the expense of stockholders.

B. The Relation between Stockholder and Bondholder Wealth Effects

This section documents the negative relation between stockholder and bondholder abnormal returns. The entrenchment and bondholder protection hypotheses predict no relation between stock and bond returns. In contrast, the mutual interest hypothesis predicts a negative relation. To assess the extent of the relation, we estimate the following regression:

$$BNDAR_j = \beta_0 + \beta_1 * STKAR_j + \beta_2 * RAT_j + \beta_3 * RSIZE_j \qquad (9)$$

where *BNDAR* is the abnormal bond return for the event month for firm j, *STKAR* is the three-day event window abnormal stock return, and *RSIZE* is the ratio of the issue size to the par value of all outstanding publicly traded debt. *RAT* is a dummy variable that equals one if the bond is investment grade and zero otherwise. The mutual interest hypothesis predicts that β_1 be negative and significant. *RAT* and *RSIZE* are included as control variables.

The first row of Table III presents the parameter estimates and t-statistics for this regression for the put sample. The equation F-statistic and the

[12] The right-hand columns have three more events and four more bonds than the left-hand columns. One offering date is gained because one firm issued two poison put bonds at different dates based on a single shelf registration. A second offering date is gained because one firm had no outstanding debt at the date of a shelf registration but issued a nonput bond prior to issuing a put bond. Both put and nonput issues were based on a common registration date. The third offering date gained in the left-hand columns occurs because the registration month bond return for one shelf registration was unusually large, more than twice the next largest figure. A check for confounding events yielded nothing obvious. Nevertheless, this outlier was excluded from the analysis of bond returns. If it were included in the right columns, the average abnormal bond return would roughly double but remain insignificant.

Table III

An Examination of the Relationship between Abnormal Returns for Stock and Bonds for Firms that Issued Bonds during 1988 or 1989 and Had Outstanding Publicly Traded Debt Using Registration Date Abnormal Returns for Nonshelf Issues and Offering Date Abnormal Returns for Shelf Issues

$$BNDAR_j = \beta_0 + \beta_1 * STKAR_j + \beta_2 * RAT_j + \beta_3 * RSIZE_j$$

BNDAR = equally weighted average of the abnormal returns for that firm's bonds; *STKAR* = the three-day abnormal stock return; *RAT* = 1 if the bond was rated investment grade by Moody's, and = 0 otherwise; and *RSIZE* = the principal amount of the issue divided by the principal amount of outstanding publicly traded debt. For all independent variables and the intercept, each cell shows a coefficient estimate and a *t*-statistic in parentheses for the hypothesis that the coefficient equals zero. Each cell in the column labeled Equation F reports an *F*-statistic for the regression and a corresponding *p*-value.

Dependent Variable	Intercept	*STKAR*	*RAT*	*RSIZE*	Equation F	Adj. R^2
Bond returns for put sample (N = 48)	−0.33 (−0.97)	−0.19 (−2.65)	0.65 (1.90)	0.01 (1.09)	3.37 (0.03)	0.13
Bond returns for nonput sample (N = 146)	−0.11 (−0.26)	0.02 (0.48)	0.11 (0.26)	−0.01 (−0.71)	0.30 (0.83)	−0.01

adjusted R^2 indicate that the regression explains a significant portion of the abnormal bond returns. β_1 is negative and significantly different from zero. This finding confirms that a negative relation exists between stock and bond returns for firms that issue bonds with event risk protection, a key element of the mutual interest hypothesis. For comparison purposes, the second row presents parameter estimates and *t*-statistics for the same regression using the nonput sample. The equation *F*-statistic and adjusted R^2 suggest that the regression does not explain abnormal bond returns. Furthermore, the coefficient on the abnormal stock return is not different from zero. These results suggest that the relation between stock and bond returns for the put sample is unique to that sample of bond issues and is not common to all new issues.

V. Conclusion

Poison puts and related covenants have been introduced into the corporate bond market in recent years. These covenants could be included to (a) raise the costs of hostile takeovers (the entrenchment hypothesis), (b) protect bondholders from expropriation of their wealth from events such as takeovers, leveraged buyouts, and recapitalizations (the bondholder protection hypothesis), or (c) both deter takeovers and, coincidentally, protect bondholders (the mutual interest hypothesis). This article uses bonds issued in 1988 and 1989 with and without poison put covenants to examine the wealth effects of these

provisions for stockholders and outstanding bondholders and to draw inferences about the true economic roles that the covenants perform.

This study finds that the issuance of bonds with poison puts has a negative effect on stockholders and a positive effect on outstanding bondholders, while a control sample of straight bond issues without poison puts has no stock price effect. Furthermore, a cross-sectional regression for the put sample explains a significant portion of the outstanding bondholders' returns and indicates a strong negative relation between stock and outstanding bond returns. No such relation exists for the nonput sample. These results are consistent with the mutual interest hypothesis, which suggests that the issuance of poison put bonds protects managers from hostile takeovers and bondholders from event risk, at the expense of stockholders.

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