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Manish Tewari
The College at Brockport, mtewari@brockport.edu

Pradipkumar Ramanlal
University of Central Florida, pramanlal@bus.ucf.edu

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Manish Tewari
School of Business and Economics
State University of New York, Brockport, New York
E-mail: mtewari@brockport.edu
Tel: 585-391-3477; Fax: 585-395-2542

Pradipkumar Ramanlal
College of Business Administration
University of Central Florida, Orlando, Florida
E-mail: pramanlal@bus.ucf.edu

Abstract

We examine the post-issue long-run performance of the common stock of the firms issuing nonconvertible high yield bonds with event risk covenants (ERCs) over the period five years after the issue date. Using Fama French (1993) four factor regression model to analyze a sample of 217 issues issued between 1986 and 2004, we find statistically and economically significant monthly average abnormal returns between 0.36% and 0.55%, which compounds to 24% to 39% over the five year period. The evidence suggests strong long-run overperformance after the issuance. This result is in contrast to the evidence of underperformance after the straight debt issues (Speiss and Affleck-Graves, 1999). Our results support the evidence that the ERCs in bonds issued by the firms closer to financial distress or with low credit rating, help significantly reduce the agency problem between the common stockholders and the bondholders resulting in direct cost benefit to the firm in terms of reduced yields. This benefit seems to far outweigh the costs to the stockholders in terms of agency cost of potential management entrenchment and/or potential loss of takeover premium. The net result is the higher returns for the shareholders. The full impact of this benefit is only realized in the long-run.

Keywords: Bonds, High Yield, Event Risk Covenants, Poison Puts, Stock Performance, Long-Run, Event Study
JEL Classification Codes: G14, G32

1. Introduction

Protective covenants in nonconvertible debt issues have largely been understood to protect the interests of the bondholders from certain wealth reducing events. These provisions have also been referred to as "event risk covenants" (hereafter, ERCs) in the finance literature. Two variations of ERCs namely, poison put and super poison put covenants have commonly been used in bonds. Poison put is triggered when a firm is subjected to "change of control". Various events such as hostile takeovers, acquisition of large stakes, leveraged buyouts, and leveraged recapitalizations (Cook and Easterwood, 1994) can be classified as change of control events. Subsequently, super poison put covenant is triggered in the

event of change of control or the ratings downgrade or both. Ratings downgrade can have significant negative effect on the value of bonds especially when downgraded from investment grade to high yield[1] or junk category. Consequently, super poison put covenant should be highly valued by investors in investment grade bonds and conversely, the ratings downgrade protection would be of little value to the investors investing in high yield bonds. In support of this argument, Bhanot and Mello (2006) find that a firm with a high-risk profile and similar operating flexibility has no incentive to use debt with a rating trigger. Accordingly, out of our entire independent sample of 217 nonconvertible high yield bonds with ERCs, only four high yield rated issues were issued with super poison put covenant[2].

Finance literature is rich with the reasons for the inclusion of ERCs in bonds from the agency perspective. Several studies, as discussed later, have attempted to explain the announcement effect (short-term) on the common stock of the firms issuing nonconvertible as well as convertible bonds with ERCs from the agency theory perspective. The long-term effect on the stockholder wealth of the issuing firms after the issue date has largely remained unexplored especially, those issuing high yield debt. Speiss and Affleck-Graves (1999) find evidence of long-run underperformance five years after the issue of straight debt. Tewari and Ramanlal (2010) find that firms issuing bonds with both call and put features overperform in the period leading upto the put date but significantly underperform after the expiration of the put date in the long-run.

In this paper we discuss potential reasons for the inclusion of ERCs in nonconvertible high yield or junk rated debt from the agency perspective and attempt to explain the effect of the presence of ERCs on the long-term stock returns of the issuing firms after the issue date. Our sample consists of 217 nonconvertible high yield debt issues with ERCs issued between1986 and 2004[3].

The remainder of the paper is organized as follows. Section 2 performs review of the literature. Section 3 develops the testable hypothesis. Section 4 describes the sample selection and characteristics. Section 5 describes the research method. Section 6 discusses the results, while section 7 concludes.

2. Literature Review

We discuss the evidence of negative and positive effects on the shareholder wealth due to the presence of ERCs in bonds.

2.1. Negative Effects of ERCs on Stockholder Wealth

2.1.1. Management Entrenchment

The presence of ERCs in bonds has potential to impose additional financing cost on the potential acquirer due to the contractual obligations[4]. This additional cost imposed on the bidder could potentially deter acquisition (Kahan and Klaussner, 1993) which might lead to managerial entrenchment. Shleifer and Vishny (1989) find that managerial entrenchment increases the agency cost between the managers and the common stockholders resulting in negative wealth effect for the stockholders. Roth and Mcdonald (1999) find strong evidence that ERCs in bond exacerbate the agency problem between shareholders and mangers providing further evidence in support of managerial entrenchment.

2.1.2. Foregone Wealth Transfer

In addition to the potential managerial entrenchment which can increase the agency cost between the managers and stockholders, the reduction in the probability of takeovers may hurt the stockholders in

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[1] Bonds rated by Standard & Poor's in the range AAA to BBB- are classified as investment grade while BB+ and below as high yield or junk.

[2] Each issue with super poison put covenant was issued in 1989, 1990, 1991, and 1993.

[3] We truncated the issues at 2004 to measure the long term performance of the common stock of issuing firms over the period five years after the issue date.

[4] An example of a typical statement included in the prospectus of poison put bonds describing potential cost to the potential acquirers is presented in Cook and Easterwood (1994).

terms of foregone potential returns especially in the takeovers motivated by the wealth transfers. Perumpral, Davidson, and Sen (1999) find that the presence of poison puts in bonds has negative effect on the stock price since the poison puts might limit potential wealth transfer from bondholders to stockholders.

2.2. Positive Effects of ERCs on Stockholder Wealth

2.2.1. Mitigates Agency Cost of Debt

One of the main reasons cited in the literature for the inclusion of ERCs is to prevent wealth transfer from bondholders to stockholders in the event of a leveraged buyout. Warga and Welch (1993) find evidence of wealth transfer from bondholders in leverage buyouts. Asquith and Wizman (1990) and Cook, Easterwood, and Martin (1992) find evidence that bonds not protected by covenants suffer significant wealth transfer. Bhanot, Mansi, and Wald (2010) find higher negative correlation between stock returns and bond spread changes in their analysis of large sample of event risk protected bonds between 1980 and 2000. Thus, the presence of poison put in the bonds has the potential to reduce the agency cost between bondholders and stockholders (Jensen and Meckling, 1976 and Myers, 1977) especially, in the firms issuing high yield (high credit risk) bonds.

In addition, Perumpral, Davidson, and Sen (1999) also contend that although the poison puts deter takeover efforts they also have the ability to encourage negotiations between the potential acquirer and the managers thereby, serving the interest of both bondholders and shareholders.

2.2.2. Reduced Financing Cost to the Shareholders

The stockholders enjoy the benefit of providing protection to bondholders in terms of direct reduction in financing costs. Cremers, Nair, and Wei (2007) investigate whether bond covenants help align the interest of shareholders and bondholders. They find that, in the presence of bond covenants, shareholder governance reduces the conflict between shareholder and bondholder interests. This reduction in agency cost manifests itself in lower financing cost to the firm. They find increase in yield spreads associated with strong shareholder governance mechanisms to be 80 basis points for the issues without covenant protection and only 16 basis points for the protected issues. Crabbe (1991) also finds evidence that inclusion of ERCs reduces the yield by 25 to 30 basis points. Hege and Hennessey (2010) argue that the ERCs benefit stockholders in two ways. First, the incumbent shareholders benefit from the presence of ERCs due to the reduction in the share of merger surplus to the potential acquirers. Second, the ERCs are optimal for the existing shareholders since they allow shareholders to extract the same merger surplus with lower debt value. We surmise that this effect can be more pronounced in the case of high yield bond yields due to the high cost of financing associated with them.

3. Hypothesis Development

3.1. High Yield Bonds with ERCs

The ERCs have potential to reduce the cost of bankruptcy to the bondholders in case of firms with high risk of default (Leland, 1994). Bodie and Taggert (1978) find strong evidence of underinvestment[5] when the likelihood of financial distress is high and the benefit of new investment will likely accrue to the bondholders under greater chance of default. Also, Smith, Smithson, and Wilford (1989) contend that as the firm's value declines due to increasing financial distress, the underinvestment problem worsens and at the same time increases the agency cost between bondholders and the stockholders due to increased probability of riskier investment by the managers. Therefore, the firm is more likely to include ERCs in the bond issues. Nash et al. (2003) in their analysis of 496 bonds issued between 1989 and 1996 find that a firm is more likely to include protective covenants in bonds if it is closer to

[5] Underinvestment occurs when managers forego positive NPV projects if the benefit of investment were to be reaped by the bondholders (Myers, 1977).

financial distress. Also, Fields, Kidwell, and Klein (1994) find that the value of event risk protection is greater for bonds with low credit ratings.

3.2. Announcement Effect of Bonds Issued with ERCs

The results on the announcement effect (short-run) of presence of ERCs on the stockholder's wealth have been mixed. Bae, Klein, and Padmaraj (1994) find significant positive price reaction to the announcement of the issuance of event risk protected bonds. While, Roth and Mcdonald (1999) and Cook and Easterwood (1994) find that the ERCs in bonds affect stockholders negatively around the announcement date. All of the three above mentioned studies differ in their interpretation of the announcement dates. The announcement effect in the case of convertible bonds is mixed at best. Keasler et al. (1997) in their analysis of convertible bonds find that ERCs have negative effect on the shareholder wealth due to managerial entrenchment. Nanda and Yun (1996) find just the opposite effect in convertible bonds.

3.3. Hypothesis

The firms issuing high yield bonds face increased likelihood of financial distress which in turn leads to higher financing cost. The presence of ERCs in high yield bonds has potential to significantly reduce the agency cost between stockholders and bondholders resulting in substantial reduction in financing cost to the firm. This benefit should far outweigh the cost of managerial entrenchment and the potential foregone returns due to possible takeover. In the light of this argument we test the following hypothesis:

Hypothesis: *The common stock of the firms issuing nonconvertible high yield bonds with ERCs should overperform in the long-run after the issue date.*

4. Sample Selection and Characteristics

Our sample consists of non-convertible high yield bonds issued with ERCs between 1986 and 2004. The bond data is collected from Securities Data Company (SDC) platinum database. The issues are screened using the following criteria: 1) all the issues with maturity less than 5 years are eliminated; 2) all the issues issued after August 2004 are eliminated in order to estimate the long-term stock returns five years after the issue date; 3) the issuing firm must be a publicly traded firm in the US and listed and searchable on the Center for Research in Security Prices (CRSP) database; 4) the issuing firm must not be involved in a major restructuring in the time span five years from the issue date; 5) shares traded for the issuing firms are ordinary common shares since all the firms classified as ADRs, SBIs, REITs, and closed-end funds are eliminated; and 6) all the issues by the issuing firms classified as utility and finance firms are eliminated.

The final full sample consists of 307 issues of high yield bonds issued with ERCs. For the firm's with multiple issues of these bonds, if the issue date of another issue falls in the time span five years after the issue date of the first issue then return on this firm would be included more than once in some of the monthly average returns. This violates the independence assumption implicit in most of our statistical tests. Hence, for those instances only one issue from that firm is considered in the regression analysis and we classify that as an independent sample. This criterion leaves us with the final independent issue of 217 issues.

Table 1 depicts the full and the independent sample of the issuing firms. The monthly stock price data for the sample firms was obtained from the CRSP database.

Table 1: Distribution of Full and Independent Sample by Issue Year.

Year	Full Sample	Independent Sample
1986	3	3
1987	0	0
1988	2	2

Table 1: Distribution of Full and Independent Sample by Issue Year. - continued

1989	10	9
1990	2	1
1991	6	4
1992	40	30
1993	64	49
1994	43	26
1995	28	20
1996	33	23
1997	9	6
1998	7	7
1999	10	8
2000	4	1
2001	10	4
2002	9	8
2003	19	10
2004	8	6
Total	**307**	**217**

The full sample includes all high yield bond issues with event risk covenants obtained from the SDC platinum database over the period 1986 – 2004. The independent issues are those for which the firm has not made any other high yield bond issue(s) with ERCs during the period between the issue date and five years after the issue date.

5. Research Method

We use Fama and French (1993) three factor regression method to examine the long run performance of the common stock of the issuing firms. Fama French suggest three factor model for the stock returns. We also add a fourth factor known as the momentum factor (Brav, Geczy, and Gompers, 2000). We add the momentum factor in our analysis to account for any momentum in the stock prices leading up to the issue date and the put date.

We examine the common stock returns over three different time periods:

a) Between issue date and three years after the issue date.
b) Between issue date and four years after the issue date.
c) Between issue date and five years after the issue date.

Since the independent sample consists of 217 issues, we chose the three year span as the minimum time period to achieve sufficient number of observations. We examine the long run performance over these three periods in order to observe any trend (increasing, decreasing, or none) in the abnormal stock returns. We individually perform the regression for each of the three periods using the following Fama French four factor model.

$$(Rpt-Rft)=\alpha+\beta(Rmt-Rft)+s\ SMBt+h\ HMLt+u\ UMDt+\varepsilon t, \quad \text{(Model 1)}$$

Where,

Rpt is the return on the portfolio of our independent sample firms in month *t*; *Rmt* is the return on the value-weighted index of NYSE, AMEX, and NASDAQ stocks in month *t*; *Rft* is the 1-month T-bill yield in month *t*; *SMBt* is the return on small firms minus the return on large firms in month *t*; *HMLt* is the return on high book-to-market stocks minus the return on low book-to-market stocks in month *t*; and *UMDt* is the momentum factor. *SMB*, *HML*, *UMD*, *Rm−Rf*, and *Rf* are obtained from Keneth French website (MBA.Tuck.Dartmouth.edu/pages/faculty/ken.French/Data_Library.html). The details on the construction of these factors can also be obtained from this website.

The intercept term α measures abnormal return per month and is the primary focus of the regression analysis. *Rpt* is computed using the calendar time average method described in Mitchell and Stafford (2000). *Rpt* is computed by taking average of the monthly returns for each stock for each month. If the stock price is not available for the entire five years on CRSP due to a delisted stock, we

use stock prices for whatever period they are available to compute returns. *Rpt* value represents the portfolio return of every firm that falls in the event period. Investment is made at the end of the month when the bond is issued and continues for the entire event period. Mitchell and Stafford (2000) recommend including only those months where there are at least ten firms in each monthly event portfolio. We follow their recommendation and report the results based on monthly observations where the monthly portfolio average return includes at least ten firms. The three year return regression is based on 194 (monthly portfolio returns) observations, the four year regression is based on 215 observations, and the five year regression is based on 228 observations.

Loughran and Ritter (2000) highlight two important decisions that must be made in the long-run event studies. The first decision relates to the choice between two regression techniques: (1) ordinary least squares (OLS) where each monthly average return is given equal weight, or (2) weighted least squares (WLS) where each monthly average return is weighed by the number of returns used in the calculation. We report the results for both equal weighted and monthly weighted calendar periods. The second decision relates to the method used in computing monthly average returns: (1) equal weighed by calculating average return across the firms in a specific month, or (2) value weighted by calculating weighted average of the returns across the firms in a month weighted by the firm value. We compute the firm value as the market capitalization immediately prior to the debt offering. We report both OLS and WLS results using equal and value weighted average returns.

Table 2: Results from Fama-French 4-Factor Model

Event Period	**α**	**β**	**s**	**h**	**u**	**AdjR²**
Panel A: 5 Year Returns						
(1) EW portfolio/OLS	0.36	1.03	0.76	0.57	-0.12	0.73
	(1.76)**	(18.79)	(12.65)	(7.73)	(-2.82)	
(2) VW portfolio/OLS	0.55	1.07	0.33	0.28	-0.17	0.63
	(2.52)*	(16.20)	(4.52)	(3.21)	(-3.25)	
(3) EW Monthly Weighed portfolio/WLS	0.42	1.00	0.83	0.56	0.06	0.70
	(1.87)**	(17.57)	(10.64)	(5.80)	(1.14)	
(4) VW Monthly Weighed portfolio/WLS	0.53	1.09	0.46	0.25	-0.05	0.66
	(2.84)*	(17.28)	(5.32)	(2.37)	(-0.81)	
Panel B: 4 Year Returns						
(1) EW portfolio/OLS	0.26	1.06	0.67	0.56	-0.17	0.70
	(1.87)**	(17.37)	(10.29)	(7.00)	(-3.69)	
(2) VW portfolio/OLS	0.51	1.17	0.21	0.28	-0.17	0.59
	(2.31)**	(14.72)	(2.45)	(2.68)	(-2.75)	
(3) EW Monthly Weighed portfolio/WLS	0.50	0.98	0.65	0.55	-0.08	0.69
	(2.20)**	(16.14)	(8.90)	(6.40)	(-1.68)	
(4) VW Monthly Weighed portfolio/WLS	0.49	1.19	0.28	0.21	-0.14	0.63
	(2.04)**	(15.00)	(2.91)	(1.85)	(-2.18)	
Panel C: 3 Year Returns						
(1) EW portfolio/OLS	0.27	1.07	0.57	0.53	-0.15	0.67
	(2.05)**	(15.70)	(7.93)	(6.00)	(-3.01)	
(2) VW portfolio/OLS	0.53	1.22	0.19	0.29	-0.17	0.55
	(1.05)	(15.70)	(7.93)	(6.00)	(-3.01)	
(3) EW Monthly Weighed portfolio/WLS	0.46	1.00	0.46	0.52	-0.11	0.67
	(2.79)*	(14.84)	(6.37)	(6.25)	(-2.21)	
(4) VW Monthly Weighed portfolio/WLS	0.52	1.35	-0.01	0.17	-0.12	0.59
	(2.62)*	(13.22)	(-0.07)	(1.31)	(-1.63)	

Regression (1) in each panel use equal weighted (EW) returns and are estimated using ordinary least squares (OLS), regression (2) use value weighted (VW) returns (value is the market capitalization of the firm immediately prior to the issue date) and are estimated using ordinary least squares (OLS), regressions (3) in each panel use monthly weighed EW returns and are estimated using weighted least squares (WLS) where the weight are based on the number of firms in the month, and regressions (4) use monthly weighed VW returns and are estimated using weighted least squares (WLS). Parameter estimates are presented with *t*-statistics in parentheses. All *t*-statistics are calculated using White's method (White, 1980).
* indicates significance at 1% level, ** indicates significance at 5% level.

6. Hypothesis Testing and Results

We provide the results from the Fama and French four-factor regression model with the momentum factor for the independent sample of 217 issues in table 2. The table contains both the value weighted and the equal weighted portfolios over the 5-year, 4-year, and 3-year event periods listed in panels A, B, and C respectively. Equal weighting may be appropriate if the goal is to measure the abnormal returns of a typical firm undergoing a particular event (Loughran and Ritter, 2000) while value weighting may be employed to measure the aggregate wealth effects (Fama, 1998). We concentrate most of the following discussion on the equal weighted results (EW/OLS) and highlight any difference we observe between the equal weighed and the value weighed results.

The intercept estimate in panel A (over the period 5 years after the issue date) shows an average abnormal positive return of 0.36% per month, which is significant at the 5% level (t-value = 1.76). This result provides clear evidence that the portfolio of the issuing firms significantly outperforms the market. This result is consistent with EW/WLS results. VW/OLS and VW/WLS also show significant overperformance and are significant at 1% level. The monthly positive abnormal returns in panel A range from 0.36% (EW/OLS) to 0.55% (VW/OLS) which compounds to statistically significant 24% to 39% abnormal returns over 5 year period.

The intercept estimate for the panel B (over the period 4 years after the issue date) is also consistent with the results from panel A. EW/OLS shows and average positive abnormal return of 0.26% per month which is statistically significant at 5% level (t-value = 1.87). This overperformance result is consistent with EW/WLS result. VW/OLS and VW/WLS also show overperformance and are statistically significant at 5% level.

Finally, the intercept estimate for the panel C (over the period 3 years after the issue date) is also consistent with the results from panel A and B. EW/OLS shows an average positive abnormal return of 0.27% per month which is statistically significant at 5% level (t-value = 2.05). This overperformance result is consistent with EW/WLS result which is significant at 1% level. VW/OLS and VW/WLS also show overperformance although, VW/OLS is not statistically significant but the VW/WLS result is statistically significant at 1% level. These results confirm our hypothesis.

7. Conclusion

The firms issuing high yield bonds face the possibility of substantially higher financing cost due to a higher level of risk undertaken by the bondholders. Bondholders of high yield debt (non-investment grade debt) primarily face significant wealth loss due to a change of control in the firm rather than a ratings downgrade (ratings downgrade from investment grade to high yield may lead to substantial wealth loss). This fact is clearly evident in our sample of 217 independent high yield issues with ERCs between 1986 and 2004 where only four issues were issued with super poison put ERC (triggered in the event of change of control and/or ratings downgrade) and the rest with the poison put ERC (triggered in the event of change of control). Mindful of the risks posed to the bondholders, the firms incorporate ERCs in the bond indenture intending to provide protection to the bondholders. We analyze the rationale for the inclusion of ERCs in the high yield debt and its effect on the stockholder wealth in the long-run.

Inclusion of ERCs in the high yield debt can have negative as well positive implications for the stockholders from the agency theory perspective. Presence of ERCs in the bonds of the issuing firm may lead to management entrenchment as well as potential loss of takeover premium due to takeover deterrent mechanism of ERCs. These costs must be borne by the shareholders. On the other hand, the ERCs provide a significant protection to the bondholders from wealthloss in the event of change of control in the firm. This benefit lowers the agency problem between stockholders and bondholders resulting in substantially lower cost of financing to the firm due to reduced yields.

Using Fama French (1993) four factor model, we find that the common stock returns of the portfolio of firms issuing high yield debt significantly outperform the market over the periods 3-years, 4-years, and 5-years after the issue date. This result provides strong evidence that the benefits of

presence of ERCs in risky high yield debt significantly outweigh the costs to the shareholders of the issuing firms. The full impact of this benefit is only realized in the long-run.

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