



NEW YORK UNIVERSITY  
STERN SCHOOL OF BUSINESS  
FINANCE DEPARTMENT

**Working Paper Series, 1996**

*Investment Opportunities and the Design of Debt Securities*

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FIN-96-31



# **Investment Opportunities and the Design of Debt Securities**

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First Draft: November 1995

This Draft: August 1996

JEL Classifications: G32, K22

## **Abstract**

We investigate a puzzling empirical regularity: the near-total absence of restrictive covenants from convertible bonds issued by U.S. companies. In a study of 192 recent debt issues, we find that an issuer's investment opportunities are negatively related to the presence of covenants and positively associated with the incidence of convertibility. The results support an interpretation that covenants impose costs by limiting managers' choices, leading firms that value managerial flexibility to prefer convertibility as a method of reducing the agency costs of debt.

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# **Investment Opportunities and the Design of Debt Securities**

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## **I. Introduction**

This paper investigates a puzzling empirical regularity: the near-total absence of restrictive covenants from convertible bonds issued by U.S. companies.

Covenants and convertibility are well-known devices for reducing wealth losses that arise due to conflicts between debtholders and equityholders. Covenants and convertibility need not operate in a mutually exclusive way, since each contractual provision provides a different set of rights and protections to debtholders. Indeed, various theorists have used the same explanatory variables to predict higher incidences of both convertibility provisions and covenants. For example, Malitz (1986) argues that higher leverage implies a greater use of dividend and investment covenants in order to mitigate asset substitution and underinvestment, while Stein (1992) predicts that higher leverage implies greater use of convertibility in order to reduce the expected costs of financial distress. However, our dataset of 64 convertible and 128 straight bond issues from 1993 and 1994 indicates that all types of covenants are almost invariably

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omitted from convertible debt contracts, though they are included in a large majority of straight debt issues.

The absence of covenants in convertible bonds cannot be explained away by appealing to differences in risk between our subsamples, since they have identical distributions of credit ratings, nor by conjectures that convertible bondholders are protected by covenants in other debt issued by the same firm, since this is not generally the case. A further possibility is that covenants and convertibility have inconsequential effects upon firm value. Under such a theory, longstanding practices among investment bankers, largely based on folklore, might indicate that certain bonds should contain either covenants or a convertibility provision, but not both. The presence of convertibility in place of covenants would therefore represent a "neutral mutation" of security design of the type suggested by Miller (1977):

The most that we can safely assert about the evolutionary process underlying market equilibrium is that harmful heuristics, like harmful mutations in nature, will die out. Neutral mutations that serve no function, but do no harm, can persist indefinitely.

We believe that more than folklore or chance accounts for the absence of covenants in convertible bonds, and we propose and test a theory that attempts to explain this substitute relation. We argue that the presence of investment opportunities has simultaneous effects of increasing the attractiveness of convertibility and raising the implicit costs of covenants, thereby lowering their attractiveness. Authors since Jensen and Meckling (1976) have widely viewed convertibility as a solution to risk-shifting problems likely to arise when a firm has investment opportunities. Our theory relies on this insight, coupled with a conjecture that covenants may be harmful in the presence of investment opportunities because they inefficiently place limits upon managerial discretion. Moreover, *ex ante* contingent contracting involving restrictive covenants

may be difficult in the presence of investment opportunities because of asymmetric information problems. In support of the latter point, we cite arguments in the compensation literature suggesting that managerial discretion may be important when growth opportunities are present, because information asymmetries may render monitoring costs extremely high.

Empirical tests of our theory yield consistent, though not always strong, evidence that investment opportunities are negatively related to the incidence of covenants and positively associated with convertibility. Although some of our empirical findings are also consistent with other theories of convertible debt, none of these theories explains all the cross-relations that we observe among growth opportunities, covenants, and convertibility provisions. This paper therefore extends our understanding of convertibility by offering a new rationale for its use: the avoidance of restrictive covenants in situations when they are expected to be costly. The paper also points to a new variable -- growth opportunities -- that can help explain the absence or presence of covenants in certain bond issues. To the extent that our empirical findings do not provide unambiguous support for our theoretical arguments, the puzzling absence of covenants from convertible bonds remains partly unexplained.

The remaining sections of the paper are organized as follows. Section 2 contains a review of the literature on investment opportunities and security design and develops specific hypotheses for testing. Section 3 describes the data set. Section 4 presents our empirical analysis of how covenants and convertibility are related to investment opportunities and to one another. Section 5 contains conclusions.

## 2. Literature review and hypothesis development

Many theorists recognize that risky debt creates incentives for firms to make suboptimal investment or financing decisions. For example, Jensen and Meckling (1976) note that equityholders in a levered firm may invest in high risk, negative NPV projects with large probabilities of extreme outcomes, since equityholders receive a disproportionate share of the benefits relative to the costs of such strategies. Myers (1977) discusses the debt overhang problem, which predicts that equityholders will pass up certain positive NPV investment opportunities if the capital structure is heavily levered. By designing its securities in a way that mitigates these agency costs of debt, a company can lower its cost of capital and increase overall firm value.

Restrictive covenants, such as debt or dividend limitations, represent a common means for reducing agency costs. As discussed by Smith and Warner (1979), covenants control investment and financing decisions *ex ante* by prohibiting the company from taking actions expected to lower a firm's value. But since managers and lenders sometimes face difficulties predicting which actions are likely to be suboptimal, and because amending debt covenants is costly, covenants are an imperfect mechanism for controlling agency costs.

Making bonds convertible into equity at the debtholder's option represents another method for reducing the agency costs of debt. If debt securities are convertible, equityholders must share the upside gains from any risky strategy with debtholders. Thus, convertibility reduces incentives associated with excessive risk-taking, as shown by Haugen and Senbet (1981), Green (1984), and John and John (1993). However, convertibility may be an unwieldy and overly powerful weapon for debtholders to use for mitigating other agency problems -- such as



changes in dividend policy -- that might be addressed more efficiently by narrowly drawn covenants.

Several authors have investigated links between convertibility and investment opportunities and, to a lesser extent, covenants and growth opportunities. However, to our knowledge no paper testing the joint relations between convertibility provisions, covenants, and growth opportunities has appeared in the literature on security design.

Unpublished investigations by Mikkelson (1980) and Essig (1991) have found positive associations between the incidence of convertibility and variables serving as proxies for positive NPV investment opportunities, including research and development (r & d) spending, capital expenditures, and the fraction of a firm's assets that are intangible. Theories of convertible debt based upon asymmetric information, most notably Stein (1992), also predict a positive relation between growth opportunities and convertibility. Such theories, however, do not yield any predictions about the relation between convertibility and covenants or the relation between growth opportunities and covenants. An empirical study by Malitz (1986) finds an inverse relation between the incidence of covenants and company size. The author interprets this result as evidence that, contrary to our hypotheses, *more* covenants are included in debt contracts when investors lack information about a firm's growth opportunities. However, the use of company size as a measure of investment opportunities has not been followed in the literature.

Two recent papers include data suggesting the presence of an inverse association between covenants and convertibility provisions, though neither paper explores this relation. Long, Malitz, and Sefcik (1994) observe that convertible bonds contain fewer covenants against the further issuance of debt than ordinary bonds, though they find no statistically significant

difference in dividend covenants between convertible and straight debt issues. The authors do not pursue these patterns in their data. Iskandar-Datta and Emery (1994) find that bonds with no covenants are more likely to be attached to either convertibility provisions or warrants, but like Long et. al (1994), the authors do not conduct empirical tests exploring why certain issues are convertible while others contain covenants. Also, neither paper controls for the credit rating of the debt issuer when noting the apparent inverse relation between covenants and convertibility.

In theory, covenants and convertibility could act either as complementary or as substitute devices. Our hypothesis is that covenants and convertibility provisions act as substitutes, because the relative attractiveness of covenants decreases while the opposite is true of convertibility in cases where a firm has a large investment opportunity set, or menu of positive NPV projects among which managers must choose. The desirability of convertibility in the presence of growth opportunities has been widely accepted at least since Jensen and Meckling (1976) and documented by several empirical papers cited below. However, our conjecture about the implicit costs of covenants when investment opportunities are large is a possibility that has received little attention in the literature.

Covenants constrain management's discretion over investment and financing decisions. When investment opportunities are large, specific knowledge held by managers and unobservable by others may play a crucial role in determining a firm's optimal investment and financing policies. Under these conditions, suppliers of capital might not want to tie managers' hands in advance for fear of ruling out potentially valuable strategies, particularly because of the costs and time required to renegotiate or waive covenants for publicly traded debt. The literature on executive compensation has recognized this problem. When growth opportunities are large,

theorists expect companies to delegate more decision rights to managers and to use stock-based compensation intensively to motivate managers to make the best decisions about which investments to pursue. See, e.g., Holmström and Ricart i Costa (1986), Smith and Watts (1992), and Bizjak, Brickley and Coles (1993).

Our hypothesis thus predicts the following empirical relations between covenants, convertibility provisions, and growth opportunities, holding other factors constant:

- (i) The incidence of restrictive covenants has a negative association with investment opportunities.
- (ii) The incidence of convertibility provisions has a positive association with investment opportunities
- (iii) Convertibility provisions have a negative association with the incidence of covenants.

### **3. Sample selection and data description**

To test our hypotheses about the relations between covenants, convertibility, and investment opportunities, we use Moody's *Annual Bond Record* to construct a sample of all convertible bonds issued by public U.S. companies in 1993 and 1994, as well as a control sample with the same distribution of issue years and credit ratings. We exclude all secured or guaranteed bond issues, private placements, and bonds issued by closed-end mutual funds, since these bonds either have limited data availability or contain special forms of investor protection that may render convertibility and covenants unimportant.

Our sample criteria yield 64 convertible debt issues, 44 in 1993 and 20 in 1994. We obtain data about each issue from the prospectus filed with the SEC. Table 1 presents descriptive

statistics for our sample. We find that most convertible bonds have low credit ratings: 54 issues, or 84% of the sample, are rated by Moody's as Ba or lower, implying below-investment grade or "junk" status.

We construct a parallel sample of non-convertible or straight public debt issues by selecting at random two non-convertible bonds with the same credit rating and year of issue as each convertible bond. We use all non-convertible bonds listed by Moody's as the universe for our control sample, again excluding those which are secured, guaranteed, private placements, or issued by foreign or non-public companies. We also exclude from our control sample seven companies that issued both convertible and straight debt in the same year (the convertible bonds are included in our convertible subsample), as well as a small number of straight debt issues with maturity of less than five years. Those companies with multiple issues of straight debt are limited to one appearance in each year of the control sample (we choose one issue at random from such firms). We match on credit rating in an attempt to eliminate as many differences as possible between our subsamples that are related to credit quality. We match on issue year to control for the impact of macroeconomic variables upon the terms of debt contracts. Though we do not match on the variables of maturity and industry membership, data presented below show that the distribution of these variables is quite close across the two subsamples.

Table 1 presents descriptive statistics for the sample of convertible bonds alongside those for the control sample. No significant differences exist in the industry distribution or average firm size across the two groups of companies. Bonds in the two sub-samples also have very similar maturities and value of proceeds. Proceeds from the issuance of convertible bonds are significantly more likely to be used for capital investment, and significantly less likely to be used

for refinancing, according to companies' stated uses of proceeds as reported in each prospectus. Convertible bonds are issued by firms with significantly less leverage than firms issuing straight debt. This characteristic is consistent with convertible issuers having higher growth opportunities, since these types of firms should have been expected to avoid prior debt issues because of the Myers (1977) debt overhang problem.

We gather data on whether our sample companies have issued other public debt prior to the issue included in our sample, using bond rating guides published by Moody's and Standard & Poor's. We find that companies issuing convertible debt have significantly less publicly traded debt (as a fraction of total assets) and are significantly more likely to have no other public debt outstanding, compared to issuers of non-convertible debt. These patterns are consistent with our theory that managerial flexibility serves as an important motive for issuing convertible debt. One element of debt contracts that affects managerial flexibility is the ability to renegotiate or waive contract terms, and prior studies have found that public debt is far more difficult to renegotiate than privately placed debt (see, e.g., Gilson, John, and Lang 1990) due to the larger number of lenders involved. Since we expect our sample of convertible debt issuers to include companies that place a high value upon managerial flexibility, we should expect that these firms in the past have avoided issuing public debt.

#### **4. Empirical results**

The following sections present empirical tests of our hypotheses about debt contracts. Section 4.1 presents summary statistics about the incidence of covenants in convertible and non-convertible bonds. Section 4.2 contains an analysis of how the incidence of covenants depends

on investment opportunities. A similar investigation of convertibility provisions and investment opportunities appears in section 4.3.

#### *4.1. Incidence of covenants in convertible and straight debt issues*

For our subsamples of convertible and non-convertible bonds, we collect data for five types of restrictive covenants:

*Debt:* These covenants limit the company's ability to issue new debt.

*Investment:* These covenants restrict the types of investments the company is permitted to make.

*Sale of assets:* These covenants require the company to use the proceeds of certain asset sales to make an offer to repurchase the bonds.

*Affiliate transactions:* These covenants restrict the ability of the company to engage in transactions with non wholly-owned subsidiaries, controlling shareholders, or sister companies.

*Restricted payments:* These covenants limit dividends and share repurchases. Usually the limitation follows a standard formula, with aggregate payments over the life of the bond capped at a fixed dollar amount (the "initial reservoir") plus a certain fraction of future net income.

Table 2 presents data illustrating the empirical puzzle that we cite at the beginning of this paper: convertible bonds virtually never include restrictive covenants, while each of the covenants that we study appears quite frequently in our control sample of straight debt issues with equivalent credit ratings.

We believe that we can dismiss two simple candidate explanations for this pattern. First, because we control directly for the credit quality of our convertible and straight debt issues, the incidence of covenants cannot have any relation to differences in investment gradations between

the two types of bonds. Second, we believe it is unlikely that the greater incidence of subordination among convertible bonds (91%, vs. 43% of the straight debt issues in the control sample) accounts for the dramatic differences in the frequency of covenants. One may speculate that holders of subordinated debt do not need the protection of covenants, since these covenants may already be included in more senior debt issues. However, we know that many of the companies in our subsample of convertible issuers could not have provided indirect covenant protection to holders of subordinated debt, since 67% of these firms had no other public debt issues outstanding (see Table 1), and 17% had no long-term debt of any kind or only a trivial amount (less than \$1 million). Moreover, our subsample of straight debt issues indicates that subordinated bonds do not have a lower incidence of covenants than unsubordinated bonds -- in fact, the subordinated bonds have *more* covenants, an average of 3.7 vs. 3.0 out of the five that we study (t-test for difference significant at 3% level).

#### *4.2. Investment opportunities and covenants*

In section 2 we detailed reasons why restrictive covenants may be inefficient in firms with growth opportunities, and we hypothesized that, for such companies, convertibility serves as an attractive alternative for controlling certain agency costs of debt. We therefore predict that companies with valuable investment opportunities will be less likely to issue debt with restrictive covenants.

To examine the relation between growth opportunities and covenants, we estimate a series of probit models using as the dependent variable an indicator variable for the presence of one of the five covenants that we analyze. Our main explanatory variable is r & d expenditures

over sales, a variable commonly used to proxy for the presence of growth opportunities. As shown below, however, the strength of our results depends on our choice of the measure of investment opportunities. Other variables yield regression estimates that generally have the expected sign but are not as often statistically significant. Other explanatory variables in our regression include firm size (the log of total assets), profitability (return on assets, based on operating income and compounded continuously), leverage in the firm's capital structure before the debt issue (total debt over total assets), industry dummy variables based on one-digit SIC codes, and an index variable for each issue's credit rating. Financial statement data for our analysis is obtained from Compustat, and balance sheet items are measured at the start of the fiscal year in which the debt issue occurs. Missing values for r & d expense are assumed to equal zero, although our results are qualitatively unaffected if these observations are deleted instead.

Results of our estimations are summarized in the first column of Table 3, which shows the sign and significance of the estimated coefficient for the r & d variable in each model. As predicted, we find a markedly negative association between investment opportunities, as measured by r & d over sales, and the incidence of covenants in all five cases when our probit regressions are estimated over the entire sample of 192 debt issues.

We argue elsewhere in this paper that a positive association exists between investment opportunities and convertibility provisions. To show the robustness of our finding of an inverse association between investment opportunities and restrictive covenants, we delete all convertible bonds from the sample and reestimate our regressions over the sample of 128 straight debt issues. The second column of Table 3 presents the results. We continue to find a negative and significant relation with growth opportunities for four of the five covenants. Our results appear



to confirm that a negative association exists between growth opportunities and covenants, independent of the influence of convertibility provisions on the presence of covenants. We do not repeat the analysis for convertible bonds, because these bonds have a paucity of covenants as shown by table 2.

Table 4 shows the results of reestimating our probit regressions using other variables as proxies for the size of firms' investment opportunity sets. No single variable dominates the empirical literature on measuring investment opportunities, and we use three other variables as alternatives to our main variable of research & development over sales: capital expenditures over sales, a market-to-book ratio adjusted for leverage,<sup>1</sup> and the earnings/price ratio (based on operating income and the stock price at the start of the year). The top row of table 4 shows the expected sign of regression coefficients for each variable, according to our hypothesis of an inverse association between growth opportunities and the incidence of covenants. The cells in the table show the sign of the coefficient estimate for each variable in models for each of the five covenants. As before, we estimate our models over the entire sample of 192 bonds as well as the subsample of 128 straight debt issues.

As shown by table 4, the frequency of statistically significant results is not as high for the three other investment opportunity measures as it is for r & d expenditures over sales. However, the signs of the coefficient estimates are consistently found in the expected direction, and the number of statistically significant estimates is higher than would be expected by chance. In no case do we estimate a statistically significant coefficient in the direction opposite from our

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<sup>1</sup> We add the book value of total debt to the market value of equity and divide the total by the book value of assets. This ratio has been used by other authors as a simple approximation of Tobin's Q, the ratio of the market value of a firm's assets over their replacement cost.

expectations.

#### *4.3. Investment opportunities and convertibility provisions*

Several rationales for the use of convertibility provisions, including the one we put forward, predict a positive association between investment opportunities and the incidence of convertibility in debt securities. Empirical studies by Mikkelson (1980) and Essig (1991) have found positive associations between the incidence of convertibility and variables serving as proxies for investment opportunities, including r & d spending, capital expenditures, and the fraction of a firm's assets that are intangible. Our data generally confirm these findings.

Table 5 presents results of a probit regression, similar to those in tables 3 and 4, for the entire sample of 192 debt issues with the dependent indicator variable equal to one if a debt issue is convertible. Explanatory variables include firm size, leverage, profitability, credit rating, industry, and r & d expense over sales as a proxy for investment opportunities. Coefficient estimates for the probit model indicate a positive and significant association between the likelihood that a bond is convertible and the intensity of a firm's r & d spending.

We again check the robustness of our results to alternative specifications of the variable measuring investment opportunities. We use the same three alternative measures as before: capital expenditures over sales, the earnings-price ratio, and a market-to-book ratio adjusted for leverage, and reestimate the model in table 5 with each of those variables substituted for r & d over sales. In each of the three reestimations, the coefficient on the explanatory variable has the expected sign, but none of the estimates are significant.

## 5. Conclusions

Our paper explores the relation between convertibility provisions and restrictive covenants in debt contracts. We attempt to explain a surprising empirical regularity, that nearly all convertible debt is issued without covenants.

We argue that the size of firms' investment opportunity sets helps explain this pattern. According to our theory, investment opportunities have the joint effects of making convertibility provisions appear more attractive and raising the implicit costs of covenants. As a result, firms with investment opportunities will tend to control for agency costs of debt through convertibility provisions and not include covenants in their debt securities. Thus, one should observe an inverse association between covenants and convertibility. We find strong empirical evidence in support of this theory when using research and development expenditures as a measure of investment opportunities, and more mixed support for the theory with other measures of investment opportunities. Our results suggest a new rationale for the use of convertible debt -- the avoidance of covenants by firms that require a high degree of operating flexibility -- and identify investment opportunities as an important factor influencing covenant design.

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**Table 1**  
**Characteristics of sample.**

Descriptive statistics for 192 public debt issues in 1993 and 1994. The sample of convertible bonds includes all public issues reported by Moody's Annual Bond Record, excluding guaranteed, secured, and foreign issues. The control sample was randomly selected from non-convertible public issues reported by Moody's, subject to constraints that the control sample have the same distribution of credit ratings and issue dates as the convertible sample. All dollar values are in 1994 units. Long-term debt and total assets are measured at the start of the fiscal year in which each issue occurs. Significance levels for differences in means are based on t-tests assuming unequal variances.

	<u>Convertible sample</u>	<u>Control sample</u>	
Sample size	64	128	
Year of issue			
1993	69%	69%	
1994	31%	31%	
Moody's rating			
Baa	16%	16%	
Ba	27%	27%	
B	56%	56%	
Caa	2%	2%	
Value of proceeds (mean, millions)	\$141	\$148	
Maturity (mean, years)	10.7	10.0	
Company's stated use of proceeds (more than one answer possible)			
Refinancing	70%	87%	**
Capital investment	50%	28%	***
General corporate purposes	44%	42%	
Company size (mean of total assets, millions)	\$3,318	\$4,358	
Industry			
Manufacturing	28%	34%	
Financial	19%	14%	
Services	19%	13%	
Wholesale and retail trade	17%	16%	
Communications	3%	6%	
All other	14%	17%	
Long-term debt / total assets	0.22	0.39	***
Public long-term debt / total assets	0.05	0.11	***
Firms with no public debt issues outstanding	67%	47%	***

Significant at 1% level (\*\*\*).

**Table 5**

**Probit coefficient estimates:**

**Determinants of convertibility provisions in debt issues.**

Coefficient estimates for a probit model of the incidence of convertibility provisions in debt issues. The sample consists of 64 convertible and 128 non-convertible debt issues in 1993 and 1994. The dependent variable equals one if the debt issue includes a convertibility provision. Standard errors appear below each estimate.

	<u>Estimate</u>
Firm size (log of total assets)	-0.176 ** (0.079)
Return on assets (operating income / total assets)	0.057 (.332)
Leverage (total debt over total assets)	-0.385 (.256)
Credit rating of issue (index variable)	0.044 (.048)
Research and development expense / sales	12.717 ** (5.970)
One-digit industry dummy variables	Yes
Number of observations	192
Significant at 5% (**) level.	

**Table 4**  
**Incidence of covenants as functions of**  
**alternative measures of investment opportunities**

Incidence of restrictive covenants in debt contracts as a function of investment opportunities. The table shows the outcomes of probit regression estimations of models of the incidence of covenants. The main explanatory variable in each model is one of four different proxies for the size of each firm's investment opportunity set. Other explanatory variables are described in table 3 and the text.

Each column presents estimates for a model using a different measure of investment opportunities. Each cell shows the estimated sign of that variable in the probit regression model, along with an indication of the estimate's statistical significance.

Growth opportunity variables:

	<u>R &amp; D</u> <u>/ sales</u>	<u>Cap. exp.</u> <u>/ sales</u>	<u>Adjusted</u> <u>market</u> <u>/ book</u>	<u>Earnings</u> <u>/ price</u>	<u>Total</u>
Expected sign of coefficient	-	-	-	+	
<b><u>Sign of estimate for each covenant</u></b>					
Debt	- ***	+	-	+	
Investment	- *	-	- ***	+	
Sale of assets	- ***	+	-	+	
Affiliate transactions	- ***	-	-	+	
Restricted payments	- ***	-	- ***	+ **	
Estimates with expected sign	5 / 5	3 / 5	5 / 5	5 / 5	18 / 20
Significant with expected sign	5 / 5	0 / 5	2 / 5	1 / 5	8 / 20
Significant with wrong sign	0 / 5	0 / 5	0 / 5	0 / 5	0 / 20
<b><u>Sign of estimate for each covenant</u></b> <b><u>(non-convertible sample only)</u></b>					
Debt	- ***	+	+	+	
Investment	-	- *	- **	+	
Sale of assets	- **	+	+	+	
Affiliate transactions	- **	-	+	+	
Restricted payments	- ***	-	- *	+ **	
Estimates with expected sign	5 / 5	3 / 5	2 / 5	5 / 5	15 / 20
Significant with expected sign	4 / 5	1 / 5	2 / 5	1 / 5	8 / 20
Significant with wrong sign	0 / 5	0 / 5	0 / 5	0 / 5	0 / 20

Significant at 1% (\*\*\*), 5% (\*\*) and 10% (\*) levels.



**Table 3****Incidence of covenants as a function of investment opportunities.**

Incidence of restrictive covenants in debt contracts as a function of investment opportunities. The table shows the outcomes of probit regression estimations of models of the incidence of covenants. The main explanatory variable in each model is research & development expenditures over sales, which serves as a proxy for the size of each firm's investment opportunity set. Other explanatory variables are include firm size (the log of total assets), profitability (return on assets), leverage (total debt over total assets), an index variable for credit rating, and industry dummy variables using one-digit SIC codes.

Each cell shows the sign and significance level for the estimated coefficient on (r & d / sales). The left column presents estimates for the entire sample of 64 convertible and 128 non-convertible bonds. The right column presents estimates for the subsample of non-convertible bonds.

<u>Covenant</u>	<b>Sign and p-value of probit coefficient for (research &amp; development / sales)</b>			
	<u>Entire sample</u>		<u>Non-convertible sample</u>	
Debt	-	***	-	***
	0.01		0.01	
Investment	-	*	-	
	0.09		0.15	
Sale of assets	-	***	-	**
	0.01		0.03	
Affiliate transactions	-	***	-	**
	0.01		0.02	
Restricted payments	-	***	-	***
	0.01		0.01	

Significant at 1% (\*\*\*) , 5% (\*\*) and 10% (\*) levels.

**Table 2**

**Incidence of covenants in convertible and non-convertible bonds.**

The incidence of restrictive covenants in a sample of 64 convertible and 128 non-convertible bonds issued in 1993 and 1994. Information about covenants was obtained from prospectuses issued with each bond. Significance levels for differences are based on t-tests assuming unequal variances.

<u>Covenant</u>	<u>Convertible sample</u>	<u>Control sample</u>	
Debt	2%	74%	***
Investment	2%	45%	***
Sale of assets	0%	66%	***
Affiliate transactions	6%	73%	***
Restricted payments	2%	73%	***

Significant at 1% level (\*\*\*).