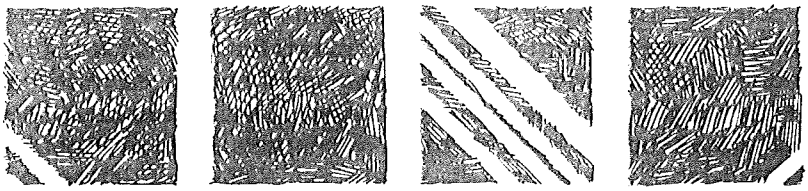
THE INCOME BOND PUZZLE

by John J. McConnell and Gary G. Schlarbaum



Income bonds should be used more extensively by corporations than they are. Their avoidance apparently arises from a mere accident of economic history—namely, that they were first employed in quantity in connection with railroad reorganizations, and hence they have been associated from the start with financial weakness and poor investment status. But the form itself has several practical advantages... Chief among these is the deductibility of the interest paid from the company's taxable income.

—Benjamin Graham

...Income bonds, in sum, are securities that appear to have all the supposed tax advantages of debt, without the bankruptcy cost disadvantages. Yet, except for a brief flurry in the 1960s, such bonds are rarely used.

The conventional wisdom attributes this dearth to the unsavory connotations that surround such bonds. As an investment banker once put it to me: "They have the smell of death about them." Perhaps so. But the obvious retort is that bit of ancient Roman wisdom: pecunia non olet *(money has no odor).*

—Merton Miller

Chase Financial Quarterly, Summer 1982, Vol. 1, No. 9, pp. 9-28.

If reported earnings are not sufficient to cover contingent interest payments, the corporation may pass the payment.

The 1980's promise to be an exciting decade for American capital markets. Recent descriptions of our financial environment have featured such problems as capital shortages, inflation at unprecedented rates, and more than the usual amount of volatility and uncertainty in the credit markets. It is a time of financial innovation; deep discount bonds, GNMA pass-through securities, and financial futures and options are only a few of the new financing instruments that are now being developed and introduced at an unusually rapid pace. It is also a time of financial crisis, in which several very large publicly-held firms have failed or approached the brink of failure.

In such an environment, it is important for the practicing financial manager to be familiar with the full array of financial instruments at his disposal. Our intention in this article is to draw attention once again to a frequently advocated, but infrequently used class of corporate security: the income bond.

Before investigating this income bond "puzzle," let's first review the features of the income bond.

CHARACTERISTICS OF INCOME BONDS

Income bonds are hybrid instruments which combine the features of straight debt securities and preferred stock. Like straight debt, income bonds are a contractual obligation of the issuer; they give the holder a claim on the company's earnings that ranks ahead of all equities, preferred and common. At the same time, however, they represent a contingent claim: interest is payable only if earned. And, because the income bond is in fact a debt instrument, the interest payments are tax deductible to the corporate issuer.

That the payment of coupon interest depends on the level of the issuer's reported accounting earnings, is, of course, the most important characteristic distinguishing income bonds from other debt instruments. If sufficient accounting earnings are available after the deduction of operating expenses, allowable fixed asset depreciation, and interest payments with a prior claim on income, then the interest due on the income bonds *must* be paid. But if reported earnings (after deduction of the various allowed expenses) are not sufficient to cover contin-

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gent interest payments, the corporation may pass the payment with no charge in the ownership structure of the company.

Thus, when a contingent interest payment is omitted, the bond technically is not in default, and bondholders obtain no additional control over the company (except for the possible future claim to accumulated interest). In contrast, when an interest payment is omitted on a fixed-interest bond, it is considered to be in default, and the bondholders may force the company into bankruptcy.

It is also worth noting, however, that income bonds can take on many of the characteristics of more conventional forms of debt. They may be callable, convertible into common stock, or subordinated to other classes of debt securities. They may contain sinking fund provisions. Also, and perhaps most important, the income bond, like preferred stock, may contain a provision for the accumulation of missed interest payments. As in the case of the dividend payments on both preferred and common stock, the interest payments associated with income bonds are "declared" by the board of directors. As a consequence, unlike other corporate bonds, income bonds trade "flat," or without accrued interest.

AN HISTORICAL PERSPECTIVE

Income bonds were first employed extensively in the railroad reorganizations that followed the panics of 1873, 1884, and 1893. After this period, income bonds were rarely used until the depression years of the 1930's. The Interstate Commerce Commission decreed that income bonds had no place in well-balanced capital structures and, in one extreme case, required the substitution of preferred stock for an income-bond issue.

During the 1930's companies with large funded debts and cyclical incomes found it necessary to reduce the fixed-income segment of their capital structures; income bonds were useful for this purpose, and were issued by both public utility and industrial firms. Around 1940, the ICC relaxed its position on income bonds, allowing for a marked increase in their use, mostly by railroads undergoing reorganization. And, in a dramatic departure from the prior decades, a number of solvent

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railroads issued income bonds in the early 1950's.

In a 1955 article published in the *Harvard Business Review,* Sidney Robbins surveyed the use of income bond financing by solvent corporations, and identified four or five industrial companies that had used them. Robbins noted that while income bonds afford virtually all the benefits of other debt instruments, they do not present the danger of "default risk" associated with conventional debt. That is, income bonds offer management greater flexibility when they need it most—when earnings are down. Other writers have also argued that income bonds offer all the advantages of preferred stock while providing the tax advantage of debt.

In the decade following Robbins' article, another handful of industrial companies floated small income bond issues. In fact, the president of Sheraton Corporation wrote a letter to the editor of the *Harvard Business Review* indicating that Sheraton had become interested in income bonds as a direct result of Robbins' article. (Sheraton ultimately sold $35 million of income bonds.)

In addition, several more railroads issued income bonds after publication of Robbins' article and, in 1961, Trans World Airlines completed an income bond financing. But, as characterized by Robbins, the use of income bonds remained "sparse and intermittent."[1]

[1]Robbins, S., 1974. *An Objective Look at Income Bonds,* Boston: Envision.

One notable exception to the general neglect of income bonds was the financing strategy of Gamble-Skogmo. In the mid-1960's, this large and prominent retail company built its financing program around the use of income bonds. The company first issued $15 million of income bonds in 1966, and thereafter entered the market every year through 1976. By 1976 Gamble-Skogmo had over $200 million of income bonds outstanding. Indeed, by 1974, the company had more income bondholders than common and preferred stockholders.

From the cases of Gamble-Skogmo, TWA, and the railroads, it is clear that income bonds have had a number of strong advocates among practitioners of corporate finance. Further, the writings of Robbins and other financial observers (see epigraph) are evidence of an income bond following among finance theorists.

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Why, then, have income bonds not been used more frequently? There is a considerable amount of reluctance on the part of investment bankers, issuers, and investors that must be overcome before income bonds will be used extensively. Gamble-Skogmo, it should be noted, encountered such strong resistance from investment bankers that it had to form its own securities company to distribute its income bonds. But surely, in a competitive environment, if companies had been serious about pursuing income bond financing, they would have found investment bankers willing to accommodate them.

The Possible Explanations

The most widely accepted explanation of the general reluctance to issue income bonds is that the bonds were tainted by their association with the reorganization of bankrupt railroads. Because these securities carry the "smell of death," those investors—the argument seems to imply—that can be induced to hold income bonds will demand rates of return higher than the returns justified by the actual level of risk of holding such bonds. In other words, income bonds will be persistently undervalued relative to other securities, forcing the company to pay an abnormally high price for its capital.

Another possible explanation involves the tax deductibility of the interest payments made to income bondholders. There has never been a definitive ruling on what is necessary to establish that income bonds are indeed debt. Thus, there remains a fear that the tax laws may be changed such that income bond payments will be treated like preferred stock dividends.

A third explanation for the scarcity of income bonds is the potential for "deadweight costs" associated with this form of financing. Because the computation of earnings is crucial in determining whether income bondholders will receive interest payments, conflicts between stockholders and income bondholders can arise over the company's accounting methods. The concern is that, in the resolution of such conflicts, the company may incur substantial legal fees.

In the remainder of this article, we examine each of these proffered solutions to our income bond puzzle. The first and most complicated part of our analysis investigates whether the

We calculated monthly rates of return for our income bond portfolio over the period January 1956 through December 1976.

returns actually earned by the holders of income bonds have been "too high"—that is, higher than the returns we would have expected, given the relative risk of holding the bonds. Using past experience as the best guide to the future, we offer evidence on the *historical* risks and returns to income bondholders as our best estimate of the prospective cost of income bond financing to corporations.

In subsequent sections, we look more closely at the tax considerations, and the alleged "deadweight costs" associated with income bonds. In the final section of our article, we offer some additional evidence which suggests that the stock market responds favorably to the substitution of income bonds for preferred stock in corporate capital structures.

RETURNS AND PRICING OF INCOME BONDS

Bond Sample and Selection Procedure

In attempting to determine whether income bondholders receive returns that are "too high" for their level of risk; we followed the procedure described below.

First, we compiled a sample of 53 income bonds issued by public corporations, whose historical price quotes and records of interest payments over a fairly long period of time were available. This constituted the minimum information necessary to reach statistically reliable conclusions.

Using month-end price quotes combined with the "declared" interest payments, we calculated monthly rates of return for our income bond portfolio over the period January 1956 through December 1976. (In the Appendix we have listed the name of each issuing company in our sample, the original issue and maturity dates of each bond, the coupon rates, the dates on which each bond entered and left the sample, and the reason given by the company for issuing the bond.)

After measuring the actual returns of our income bond portfolio, we measured its risk. As specified by the Capital Asset Pricing Model (the last two articles in this issue provide a detailed elaboration of CAPM) the "normal" or "expected" rate of return of any security, or portfolio of securities, is directly proportional to its risk. Consequently, once we have measured

the portfolio's risk, establishing expected rates of return for income bonds is fairly straightforward.

In the final stage of our analysis we compared the actual returns earned by income bondholders to the risk-adjusted expected returns. Any difference between these two we called the "abnormal" return. If income bonds truly have the "smell of death about them," and thus are systematically underpriced at issue, we would expect income bondholders to have earned significantly positive abnormal returns. If the abnormal returns were negative, however, then we would conclude that income bonds have been a cheap source of capital relative to conventional stock and bond financing.

Preliminary Results

In order to make our results more intelligible it would probably be helpful to explain briefly our procedures for measuring the risks and expected returns of income bonds.

If we imagine all corporate securities ranging along a spectrum of risk (and expected return), we would expect to find straight senior secured debt at the lower extreme; and corporate equities and, even riskier, common stock warrants at the upper extreme. Investors' average risk and returns on income bonds would be expected to fall somewhere in between these extremes. Because of the more uncertain claim represented by income bonds, they should (all else equal) be more risky than a randomly selected portfolio of fixed-interest, high-grade corporate bonds. We would also expect the income bond portfolio to be considerably less risky than a randomly selected portfolio of common stocks.

Because investors are rewarded, on average, according to the level of risk they bear, we expect riskier assets to yield higher rates of return. Thus, we would expect the common stock portfolio to provide higher average returns than income bonds, which, in turn, should provide higher average returns than the portfolio of high-grade corporate bonds.

How, then, do we measure the risk of income bonds? Perhaps the most intuitively appealing measure of a security's risk is the variability of its price. Higher variability means, of course, a higher probability of very large returns, but also a higher

probability of substantially negative returns. A common statistical measure of the variability of a series of returns is the standard deviation. The broader the spread, or the more variable the returns, the higher the measured standard deviation.

The standard deviations of the returns earned by these three classes of securities (i.e., portfolios of income bonds, common stocks, and fixed-interest bonds) is consistent with our expectations (see Table 1). Over the period 1956-1976, the variability of income bond returns was greater than the variability of high-grade corporate bond returns, but less than that of common stocks.

Further, if we provisionally accept the standard deviation of returns as a measure of risk, the estimated average monthly

TABLE 1

Sample Statistics, Monthly Returns: 1956-1976

STATISTIC	INCOME BOND PORTFOLIO	COMMON STOCK PORTFOLIO	PORTFOLIO OF HIGH-GRADE FIXED-INTEREST CORPORATE BONDS
Average Monthly Rates of Return	.54%	.74%	.32%
Standard Deviation of Monthly Rates of Return	2.80%	4.08%	1.87%
Lowest Monthly Rate of Return	−5.53%	−11.70%	−4.76%
Highest Monthly Rate of Return	14.83%	16.42%	8.85%

returns of the three classes of securities can be compared to determine whether the income bond returns are too high relative to returns on straight debt and equity.

Income bonds provided returns almost exactly mid-way between common stocks and straight debt.

The results recorded in Table 1 confirm our expectations. The average monthly return for the common stock portfolio was 0.74 percent, for income bonds, 0.54 percent, and for fixed-interest, high-grade corporate bonds, 0.32 percent. As expected, the portfolio with the highest risk, common stocks, also had the highest average return. Income bonds, the intermediate risk portfolio, provided returns almost exactly mid-way between common stocks and straight debt (the lowest risk portfolio).

Thus, at least on a preliminary basis, there is nothing to suggest that the returns on income bonds are extraordinarily high.

Risk-Adjusted Returns on Income Bonds

We also used a more technically precise measure of risk to test whether income bonds provided abnormally high returns over the period 1956-76. Where the prior analysis ranked the three portfolios' returns according to their total risk (i.e., total variability of returns), we then assessed whether the income bond returns were normal for their level of *systematic* risk (i.e., co-variability with the market).[2]

Briefly, our procedure was to estimate the systematic risk (known as "beta") of the income bond portfolio.[3] Using the Capital Asset Pricing Model, we generated an estimate of expected or "normal" returns for income bonds using the alternate (systematic) measure of risk. The actual returns provided by the income bond portfolio were then compared with the "normal" return to estimate "abnormal" rates of return.

To repeat our earlier hypothesis, if income bonds provide returns to investors that are too high—implying an extraordinarily high corporate cost—the estimated abnormal rates of return should be systematically positive. If, on the other hand, income bonds are priced to provide returns commensurate with their level of risk, the series of abnormal monthly returns should be distributed randomly around zero, with an average abnormal return not significantly different from zero.

Our estimate of the average abnormal return on the income bond portfolio was only −0.07 percent which, in a statistical sense, is not reliably different from zero. The same calculations for the portfolio of fixed-interest, high-grade corporate bonds

[2] Recall that systematic risk measures only the instrument's sensitivity to overall economic conditions. A detailed discussion of why this is appropriate appears in Barr Rosenberg, Andrew Rudd, "The Corporate Uses of Beta," later in this volume.

[3] The beta estimates for the income bond and fixed-interest bond portfolios were, respectively, 0.29 and 0.15. This is consistent with our prior expectations.

The market properly assessed the risk of, and investors earned a fair return on, income bonds over the period 1956 to 1976.

are shown in the second column of Table 2. The average abnormal return for this bond portfolio is a positive 0.39 percent per month, which also is not reliably different from zero.

The results in Table 2 thus support our assertion that the market properly assessed the risk of, and investors earned a fair return on, income bonds over the period 1956 to 1976. Our results do not support the contention that income bonds are priced to provide returns that are too high for their level of risk; that is, given their level of risk to investors, income bonds were not systematically underpriced by the market. If anything, the (slightly) negative abnormal returns suggest that income bonds earned returns that were too low over the test period.

TABLE 2

Estimates of Abnormal Returns for the Bond Portfolios: 1956-1976

STATISTIC	INCOME BOND PORTFOLIO	PORTFOLIO OF HIGH-GRADE CORPORATE BONDS
Average Monthly Abnormal Rates of Return	−.07%	−.39%
t-Statistic for the Average	−.32	1.22
Standard Deviation of Abnormal Rates of Return	3.61%	5.11%
Lowest Monthly Abnormal Rate of Return	−13.86%	−12.83%
Highest Monthly Abnormal Rate of Return	16.83%	22.68%

As long as income bonds have certain characteristics common to all debt instruments, interest deductions for tax purposes will be permitted.

TAX CONSIDERATIONS

We now turn our attention to the fear that a change in the tax law will remove the tax deductibility of interest payments on income bonds.

First, it should be noted, companies that have issued income bonds have been able to deduct the interest payments for tax purposes. We confirmed this for each of the companies in our sample, either by conversations with the corporate treasurer or controller, or examination of corporate annual reports and published accounts of the bond issue.

There is always, of course, the possibility that the government will terminate the tax deductibility feature; however, a close examination of tax rulings suggests that, as long as income bonds have certain characteristics common to all debt instruments, interest deductions for tax purposes will be permitted. This point is illustrated by a particular incident which occurred while the Internal Revenue Act of 1954 was being drafted. As reported by Robbins:

"In an effort to eliminate the possibility that spurious evidences of indebtedness would obtain a tax deduction, the original version of the 1954 act incorporated language that might have ended this income bond privilege. But when this condition was brought to their attention, the legislators were quick to redraft the measure. They indicated that 'there is many a slip twixt the cup and the lip' and that there was no intention to disallow the interest deduction in the case of true debt. The general rule continues to be embodied in Section 163(a) of the Internal Revenue Code of 1954, which allows a deduction for all interest paid or accrued within the taxable year on indebtedness."[4]

[4]Robbins, S., 1955. "A Bigger Role For Income Bonds," Harvard Business Review 33 (November-December): pp. 112-113.

Unfortunately, neither the U.S. Congress nor the tax courts have defined precisely what features are necessary to establish that income bonds are indeed debt, and not a preferred stock equivalent. From tax court cases and IRS rulings, however, experts on the question have identified two important characteristics. First, the bonds must have a fixed maturity. (This can, however, be fairly distant. An extreme case is the bond issued by Elmyra & Williamsport Railroad, with maturity set for the year

2862. A 30- to 50-year maturity is more typical.) Second, contingent interest payments cannot be discretionary. This is generally interpreted to mean that interest payments must be paid if earned, and omitted payments must be cumulative and due, in any event, on the maturity date of the debt.

Conversations with the treasurers and tax attorneys of our sample of corporations issuing income bonds indicate that, in some instances, two other tests may be applied in lieu of the accumulation of omitted interest: income bondholders must rank equally with the corporation's other creditors in liquidation; and the bonds must have been issued in an "arms-length" transaction.

In short, provided income bonds retain the essential characteristics of valid debt obligations, interest deductions can be expected to continue to be allowed by the IRS. Concern about changes in the tax law should not deter companies from issuing income bonds.

Potential Deadweight Costs of Income Bonds

The final explanation offered for the scarcity of income bonds is that they impose deadweight costs on the issuing company similar to the bankruptcy costs associated with fixed-interest bonds. Bankruptcy proceedings typically involve fees for lawyers, trustees, auctioneers, referees, accountants, and appraisers. Also, the time management devotes to the restructuring of the company's operations must be considered part of the expected costs of bankruptcy.

Income bonds, of course, largely eliminate the potential for such bankruptcy costs. But their critics have noted another problem that can arise from the conflict of interest between income bondholders and common stockholders. Remember that interest payments to income bondholders depend on the level of reported accounting earnings which, typically, are under the control of stockholders (or, more generally, managers acting on their behalf).

For any given level of performance, it is in the stockholders' interest to depress reported accounting earnings to avoid the contingent interest payments on income bonds. Consequently, income bondholders cannot be certain whether an interest

If contingent interest payments are passed, bondholders may have an incentive to initiate court proceedings against the company.

payment was omitted because earnings were "truly" insufficient or because stockholders employed some form of accounting trickery. As a result, if contingent interest payments are passed, bondholders may have an incentive to initiate court proceedings against the company. And, of course, such proceedings involve lawyers, accountants, and the other third parties who demand proper compensation for their services.

While we could not measure these costs directly, we did discover two court cases concerned with this specific issue. In both cases the courts ruled in favor of the income bondholders and ordered payment of previously omitted contingent interest.

The first case, involving the Central of Georgia Railway, occurred over the period 1907-1910. The source of contention was the accounting methods used in determining the earnings available for the payment of contingent interest. The second, and more recent, case occurred in 1971-1973 when the Chicago, Milwaukee, St. Paul, and Pacific Railroad Company omitted contingent interest payments on three of its outstanding bond issues. Class-action suits were filed on behalf of each of the three sets of income bondholders.

The Chicago-Milwaukee case concerned two primary points of issue. The first involved the way in which subsidiary earnings were computed and whether or not such earnings (or losses) should be included when determining the parent company's net earnings available for contingent interest payments. The second point concerned the carry-forward of accumulated losses in determining net earnings available. The bondholders alleged that the Company, in each case, had used improper accounting procedures which depressed reported earnings.

On both points the court found in favor of the bondholders. As a result the Railroad was obliged to pay about $4.1 million (less court-approved attorney's fees and various other costs) to the bondholders. In addition, the Railroad agreed to alter its accounting practices as requested by the class-action suits.[5]

We should note again that the omission of a contingent interest payment does not, by itself, generate deadweight costs. In fact, such missed payments, even those resulting from accounting manipulations, are easily priced in the capital market. When the income bonds are initially issued, investors weigh the

[5]Additional details are available in the annual reports for 1975, 1976, and 1977 of the Chicago, Milwaukee, St. Paul, and Pacific Railroad, and in the *Wall Street Journal.*

If a company's earnings are perceived to be highly volatile, a relatively higher coupon rate will be required by investors.

likelihood of actually receiving the interest payments and price the bonds accordingly. If a company's earnings are perceived to be highly volatile (or its management somewhat "unorthodox" in its accounting practices), a relatively higher coupon rate will be required by investors. Management, therefore, probably has an incentive to reduce investor uncertainty in cases where such uncertainty is a major problem. But, on an expected value basis, the possibility of missed interest payments does not represent a loss to either income bondholders or stockholders. The dead-weight loss to stockholders arises only from the cost of the court proceedings over the missed payments.

These costs appear to us to be relatively small, however, especially when compared to the potential bankruptcy costs associated with fixed-interest obligations. And, more important, there are ways for the company to circumvent this problem of investor uncertainty. The most direct way is to minimize (or completely eliminate) the incentive for stockholders to conceal earnings. This can be done by making missed interest payments cumulative, and by compounding such payments at an interest rate comparable to the firm's cost of capital (i.e., its current investment opportunity rate).[6] By inserting such provisions, and thus making the returns to income bondholders more certain, companies issuing income bonds will reduce the coupon rate required by investors at the time the bonds are offered, and largely eliminate the incentive of income bondholders to recover missed interest payments through legal action.

In short, there are fairly inexpensive ways of reducing the expected costs of court proceedings (and investor uncertainty). Hence, this argument does not explain the corporate neglect of income bonds.

EXCHANGE OF INCOME BONDS FOR PREFERRED STOCK: THE EFFECT ON STOCK VALUES

We have seen that none of the reasons popularly offered for the scarcity of income bonds stands up to close scrutiny. We now switch our focus from the negative to the positive: is there empirical support for the alleged benefits of income bond financing? More precisely, is there any evidence that the market

[6]Two of the three bonds that were the source of contention in the Chicago-Milwaukee case did not have a provision for accumulating missed interest payments. Further, none of the income bonds in our sample had a compounding feature.

There are fairly inexpensive ways of reducing the expected costs of court proceedings.

rewards companies for using income bonds?

In a recent paper, we attempted to test what happens to stock prices when companies issue income bonds to retire preferred stock.[7] Briefly, our test involved a comparison of each company's common and preferred share price just before, and immediately after, the announcement of their intention to exchange income bonds for outstanding preferred stock.

If the market viewed the income bonds favorably, we should detect abnormally positive returns (arising from an increase in the stock price) at the time of announcement; negative stock returns would indicate an adverse reaction from the market. Similarly, returns that are "normal" for the systematic risk of the stocks would suggest neutrality, or indifference toward income bonds.

Our sample included 22 companies completing income bonds-for-preferred stock exchanges between 1954 and 1965. The value of the preferred stock involved in the average exchange, as a percent of the market value of the outstanding common stock, was 87.8 percent. The exchange offers thus represented, on average, a significant recapitalization of the sample companies.[8]

We analyzed both monthly and daily rates of return around the time of announcement.

The results of our monthly analysis indicated little impact on value. The common stocks of those companies exchanging income bonds for preferred stock had a positive, but small and not statistically significant, abnormal return. In the case of the preferred stocks the abnormal return was negative, but again small in absolute value and not significant statistically.

The results of our study of *daily* returns, however, were more telling. In measuring daily returns, we computed the average rates of return separately for the common and preferred stocks for the day of the exchange offer announcement, and for the five days preceding and following the announcement date. These results are presented in Table 3.

For the common stocks, we found an average abnormal return of 1.45 percent on the day of the first published announcement, and 0.73 percent on the announcement day plus one. While the announcement-day return is not extraordinarily

[7] McConnell and Schlarbaum, 1981, "Evidence on the Impact of Exchange Offers on Security Prices: The Case of Income Bonds," *Journal of Business,* January.

[8] Because railroad companies were disproportionately represented in our sample, we had to adjust our estimates of the sample's overall rate of return to isolate events affecting only the railroad industry.

We again were not able to find any evidence that income bonds are somehow "tainted."

large, it is, in statistical jargon, significantly different from zero. (The return on the day after announcement is not.) Thus, we

TABLE 3

Average Daily Returns for Common and Preferred Stocks of Companies Issuing Income Bonds: Five Days before and after the Day of Announcement

DAY	COMMON STOCKS	PREFERRED STOCKS
−5	−.31%	−.90%
−4	.39	−.22
−3	−.72	.56
−2	1.14	−.16
−1	.11	.76
0 (Announcement Day)	1.45	1.01
+1	.73	1.47
+2	−.64	−.28
+3	−1.09	−.18
+4	.22	−.04
+5	.04	.14

can say, with great confidence, that this is not the result of random chance.

For the sample of preferred stocks we found an abnormal return of 1.01 percent on the announcement day and 1.47 percent on the day after. Neither of these can be attributed to random chance either.

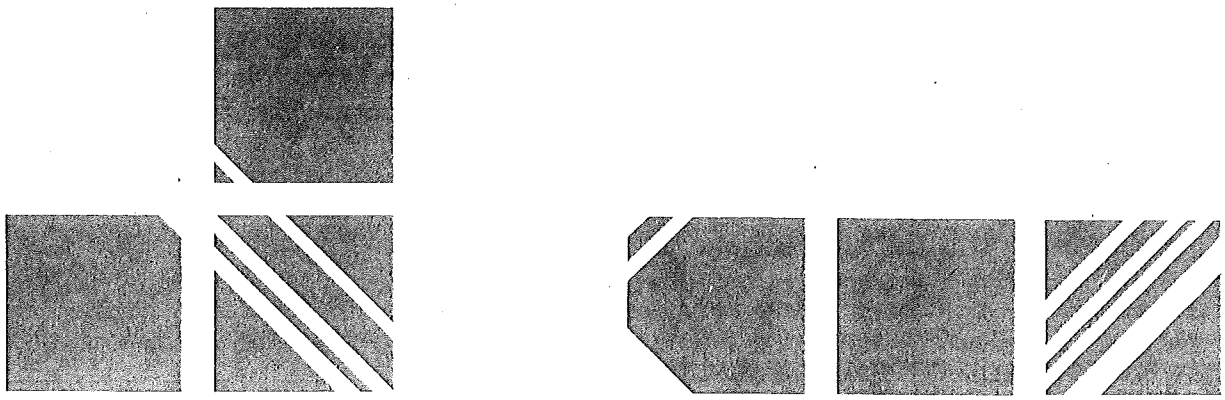
There are two important points to note here. First, we again were not able to find any evidence consistent with the hypothesis that income bonds are somehow "tainted." If this were true we would have found negative abnormal returns to shareholders around the announcement date. Second, and more important, we did find a clear, albeit small, market preference for income bonds. In sum, the theory and evidence, while contradicting the popular objections to income bond financing, provide fairly strong support for more extensive use of income bonds in corporate capital structures.

SUMMARY AND CONCLUSIONS

1. Our research indicates that income bonds are priced fairly by investors; they offer a "normal" rate of return for their risk and, therefore, do not represent an expensive source of financing. We did not find any evidence that income bonds have the "smell of death."
2. While it is possible that new legislation will terminate the tax deduction of interest payments associated with income bonds, the existing tax rulings suggest that this is unlikely. Further, all companies that have used income bonds have been able to deduct the interest payments for tax purposes.
3. It is fairly easy and inexpensive to avoid potential "deadweight" costs resulting from the stockholder/income bondholder conflict over accounting earnings. The company can accumulate and compound, at a rate reflecting the company's cost of capital, all missed interest payments. Because this makes the bondholder's return more certain, the company will also reduce the required coupon rate at the initial offering.
4. A close investigation indicates that companies using income bonds have benefited from doing so; that is, shareholders take note of the advantages of income bonds and price them into the company's shares.

Thus, there appear to be no good reasons for the present neglect of income bonds. Given the instrument's unique characteristics, we think they can provide financial managers with increased flexibility in structuring their company's financing. Indeed, for those companies which view conventional debt financing as placing unacceptable constraints on their financing flexibility, income bonds may allow them to secure the tax advantage of debt without the attendant concern of meeting periodic interest payments, or facing the consequences of not doing so.

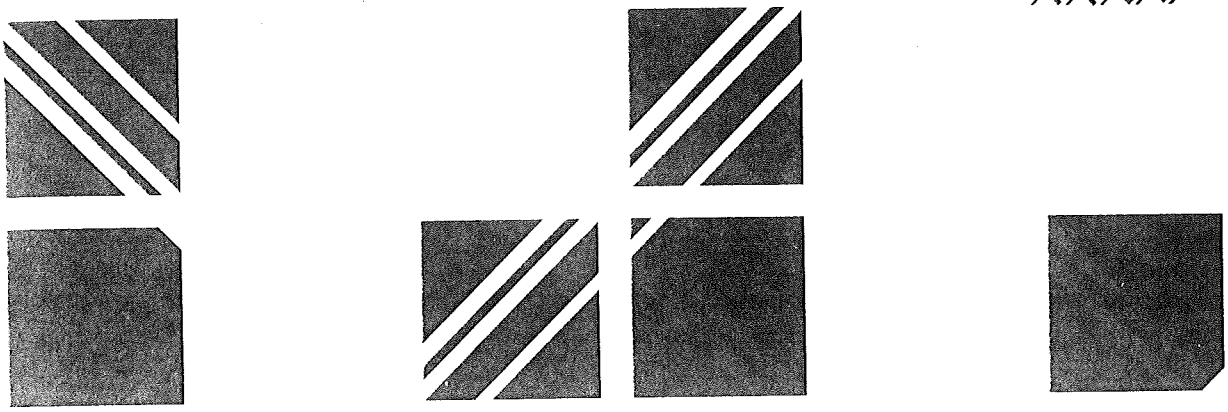
The failure of income bonds to gain acceptance thus remains a puzzle to us. But, in response to the same financial pressures that are giving rise to other financial innovations, the attention of investment bankers and their corporate clients will, of necessity, be directed once again to the largely unexploited benefits of income bond financing. A competitive market for financial advisors and financing instruments should ensure it.



APPENDIX

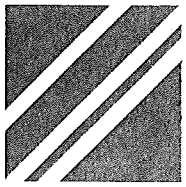
List of Income Bonds in Sample

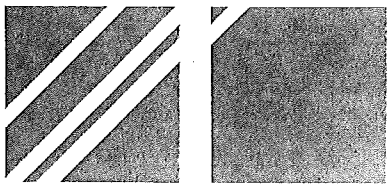
ISSUING COMPANY	COUPON INTEREST RATE	YEAR ISSUED	YEAR MATURES	DATE ENTERED SAMPLE	DATE LEFT SAMPLE	PURPOSE
American Steel & Pump Corp.	4.00	1954	1994	12/55	12/70	Refund short-term debt
Armour & Co.	5.00	1954	1984	12/55	12/76	Exchange for preferred stock
Atchison, Topeka & Santa Fe Railway Co.	4.00	1895	1995	12/55	12/76	Reorganization
Boston & Maine Railroad	4.50	1940	1970	12/55	12/76	Exchange for long-term debt
Budget Finance Corp.	6.00	1960	2010	5/62	12/76	Exchange for preferred stock
Central of Georgia Railway	4.50	1948	2020	12/55	12/76	Reorganization
Chicago & Eastern Illinois Railroad Co.	5.00	1954	2054	12/55	12/76	Exchange for preferred stock
Chicago & Great Western Railway Co.	4.50	1938	2038	12/55	12/76	Reorganization
Chicago, Indianpolis & Louisville Railroad Co.	4.00	1943	1983	12/55	12/76	Reorganization
Chicago, Indianapolis & Louisville Railroad Co.	4.50	1943	2003	12/55	12/76	Reorganization
Chicago, Milwaukee, St. Paul & Pacific Railroad Co.	4.50	1944	2019	12/55	12/76	Reorganization
Chicago, Milwaukee, St. Paul & Pacific Railroad Co.	5.00	1955	2055	12/55	12/76	Exchange for preferred stock
Chicago, Rock Island & Pacific Railroad Co.	4.50	1955	1995	12/55	12/76	Exchange for preferred stock
Chicago, Terre Haute & Southeastern Railway Co.	2.75 + 1.50*	1946	1994	12/55	12/76	Refund long-term debt
Curtis Publishing Co.	6.00	1956	1986	11/56	4/69	Exchange for preferred stock
Delaware, Lackawanna & Western Railroad Co.	5.00	1945	1993	12/55	7/76	To facilitate merger
Denver, Rio Grande & Great Western Railroad Co.	3.00 + 1.00*	1943	1993	12/55	12/76	Reorganization
Denver, Rio Grande & Western Railroad Co.	4.50	1943	2018	12/55	12/76	Reorganization
Denver & Salt Lake Railroad Co.	3.00 + 1.00*	1947	1993	12/55	12/76	Refund long-term debt
Elmyra & Williamsport Railroad Co.	5.00	1863	2862	12/57	2/67	To facilitate merger
Erie Railroad Co.	5.00	1955	2020	12/55	12/76	Exchange for preferred stock
General Baking Co.	6.00	1966	1990	1/67	12/76	Exchange for preferred stock
General Cigar Co.	5.50	1957	2015	7/57	12/76	Exchange for preferred stock
Gulf, Mobile & Ohio Railroad Co.	5.00	1940	2015	12/55	12/76	Reorganization
Gulf, Mobile & Ohio Railroad Co.	4.00	1947	2044	12/55	12/76	Reorganization



ISSUING COMPANY	COUPON INTEREST RATE	YEAR ISSUED	YEAR MATURES	DATE ENTERED SAMPLE	DATE LEFT SAMPLE	PURPOSE
Gulf, Mobile & Ohio Railroad Co.	5.00	1957	2056	1/58	12/76	Exchange for preferred stock
Lehigh Valley Railroad Co.	4.00	1949	2003	12/55	7/76	Reorganization
Lehigh Valley Railroad Co.	4.50	1949	2003	12/55	7/76	Reorganization
Lehigh Valley Railroad Co.	5.00	1949	2003	12/55	7/76	Reorganization
Maine Central Railroad Co.	5.50	1959	2008	10/59	2/69	Exchange for preferred stock
Minneapolis, St. Paul & Sault Ste. Marie Railroad Co.	4.50	1944	1971	12/55	11/70	Reorganization
Minneapolis, St. Paul & Sault Ste. Marie Railroad Co.	4.00	1944	1991	12/55	12/76	Reorganization
Missouri-Kansas-Texas Railroad Co.	5.50	1958	2033	1/59	12/76	Exchange for preferred stock
Missouri Pacific Railroad Co.	4.75	1955	2020	3/56	12/76	Reorganization
Missouri Pacific Railroad Co.	4.75	1955	2005	3/56	12/76	Reorganization
Missouri Pacific Railroad Co.	5.00	1955	2045	3/56	12/76	Reorganization
Monon Railroad Co.	6.00	1958	2007	4/58	12/76	Exchange for preferred stock
New York, Chicago & St. Louis Railroad Co.	4.50	1955	1989	12/55	12/76	Exchange for preferred stock
New York, Susquehana & Western Railroad Co.	4.50	1953	2019	12/55	1/76	Reorganization
Norfolk & Western Railway Co.	5.85	1965	2015	1/67	12/76	Exchange for preferred stock
Peoria & Eastern Railway Co.	4.00	1890	1990	12/55	7/76	Reorganization
Pittsburgh Brewing Co.	5.00	1958	1992	8/58	7/70	Exchange for preferred stock
St. Louis-San Francisco Railway Co.	5.00	1956	2006	9/56	12/76	Exchange for preferred stock
St. Louis-Southwestern Railway Co.	4.00	1891	1989	12/55	12/76	Reorganization
Southern Indiana Railway Co.	2.75 + 1.50*	1946	1994	12/55	12/76	Exchange for long-term debt
Sheraton Corp.	6.50	1956	1981	4/61	12/76	Expansion and Construction
Sheraton Corp.	7.50	1959	1989	1/59	12/76	Expansion
Trans World Airlines	6.50	1961	1978	5/61	12/76	...
Virginian Railway Co.	6.00	1958	2008	12/58	12/76	Exchange for preferred stock
Wabash Railroad Co.	4.00	1941	1981	12/55	12/76	Reorganization
Wabash Railroad Co.	4.25	1941	1981	12/55	12/76	Reorganization
Western Pacific Railroad Co.	5.00	1954	1984	12/55	1276	Exchange for preferred stock
Wisconsin Central Railroad Co.	4.50	1954	2029	12/55	12/76	Reorganization

*Fixed plus contingent interest.





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