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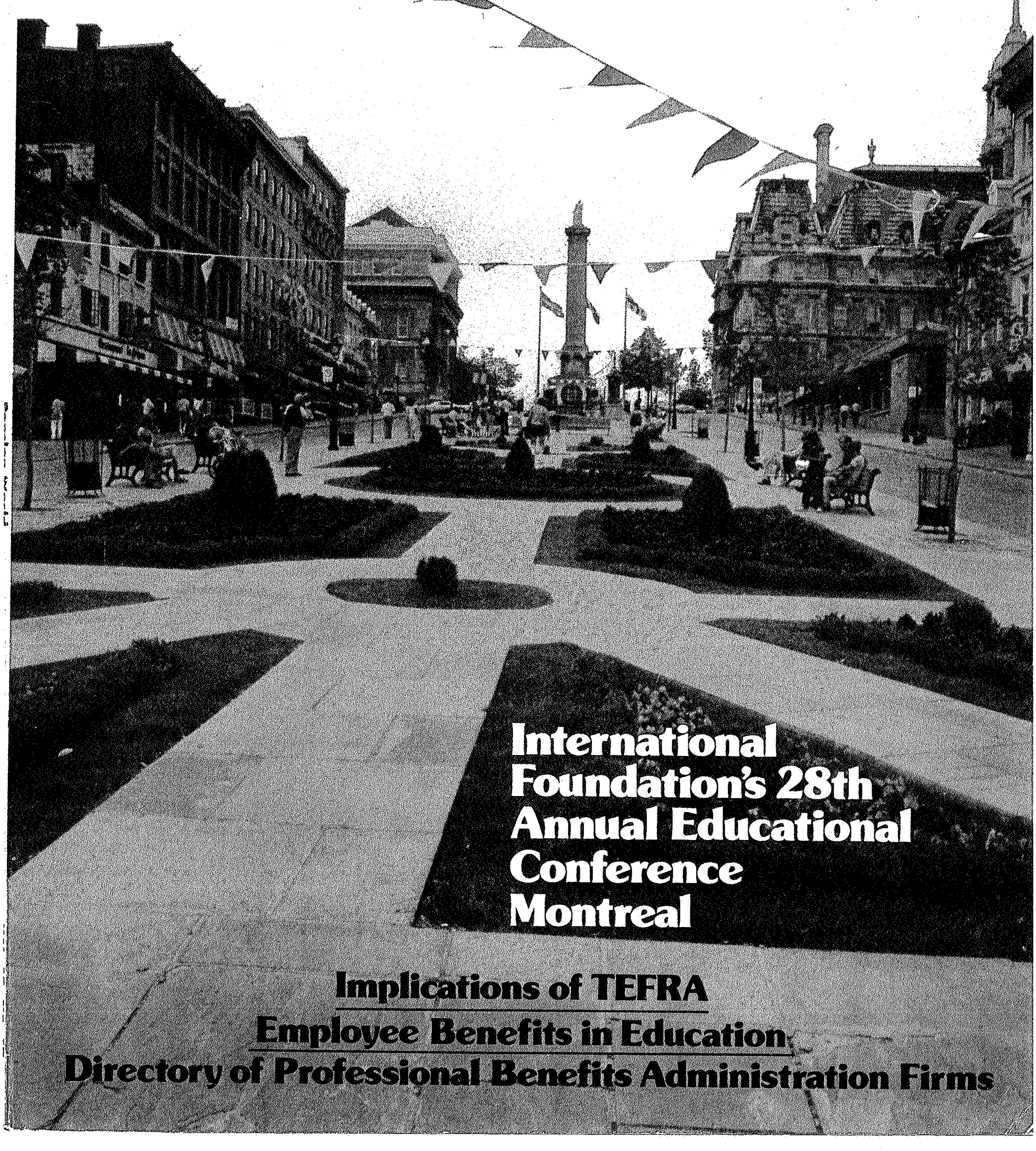

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Anatomy of a deep discount bond

The seemingly sudden appearance and rise in popularity of original issue deep discount bonds (DDB's) has prompted much discussion regarding their advantages and disadvantages. Contrary to what some people believe, DDB's are not a new idea. They originated approximately eight years ago when many Middle Eastern countries began having excess amounts of money to invest. Since interest is not allowed by the Koran, a new idea was needed in order to sell bonds to Moslems. Zero coupon bonds were devised to solve this problem. Before the idea caught on, however, religious experts who interpret the Koran determined that amounts received yearly by bond holders are not interest.

In the intervening years, DDB's have remained in the market but have often been referred to as "junk" since they were not issued by major U.S. corporations. However, in recent months, investment houses have once again turned to DDB's in response to the depressed bond market.

The key feature of an original issue deep discount bond is that its coupon interest rate is set substantially below the current market rate. This causes the bond to be priced at well below face value (*i.e.*, at a "deep discount") to yield an annual rate approximating the current market rate. The difference between the proceeds (amount of cash received by the issuer) and the face value (amount due upon maturity, exclusive of interest) is, in effect, a deferral of interest payments.

These characteristics are illustrated by Union Pacific Corp.'s (UPC) March 4, 1982, offering. UPC sold $200 million of 10-year bonds with an annual coupon rate of 6 percent. The bonds were sold at 57.4 percent of face value (proceeds were $115 million), resulting in an effective annual yield to maturity of 14.07 percent. No sinking fund is provided, and the bonds are callable at face value at any time.

Advantages to issuer

DDB's offer four major advantages to their issuer. First, for tax purposes the issuer can amortize the original discount over the life of the bonds. This provides a current tax deduction without a corresponding outlay of cash. For example, issuance of the UPC DDB's resulted in an original discount of $85 million. If the straight-line method of amortization is used, 1/10 of this discount will be taken as a deduction on UPC's tax return each year.

Second, the company can generally sell DDB's at a lower interest rate than it could with conventional offerings. For example, ITT Financial Corp. sold zero coupon bonds on May 14, 1982, discounted to yield 14.11 percent. By comparing to similar conventional bond issues, it appears that ITT Financial Corp. would have had to pay approximately 14.9 percent for a conventional issue. Investors are generally willing to accept this lower interest rate to obtain other benefits, which will be discussed later.

Third, since the coupon interest rate for DDB's is lower than that for current coupon bonds, the cash flow burden on the issuer is greatly reduced. In the case of the ITT Financial Corp. zero coupon bonds, it was eliminated altogether.

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Fourth, DDB's generally lack sinking fund provisions. Thus, the issuer retains use of the proceeds for the entire life of the bonds. In contrast, a coupon bond with a sinking fund provision might allow the issuer full use of the proceeds for only 10 years of a 25-year maturity. For example, the $100-million issue of 16.50 percent debentures by Hospital Corp. of America in January, 1982, matures in 2007 and requires sinking fund payments beginning in 1993.

Disadvantages to issuer

Despite these advantages, DDB's are far from the perfect debt security. An issuer must consider two significant drawbacks. First, the bonds are effectively non-callable; retiring the bonds early is of no benefit to the issuer since they are callable only at par. This exposes the issuer to the risk that interest rates will fall and the issuer will not have the opportunity to refinance. However, an opportunity loss of this type is minimized by the fact that DDB's are typically only 10-year issues, while 10-year conventional issues are usually not callable for five to seven years anyway.

Second, since there is no sinking fund provision, the issuer faces the prospect of having to come up with enough cash at maturity to retire the bonds. Since interest payments effectively are deferred until redemption, the balloon payment at maturity can be two to three times the amount of the initial proceeds.

Effect on financial statements

The effect of DDB's on an issuer's financial statements is generally a major consideration of a potential issuer. Generally, DDB's will favorably affect the income statement, while the balance sheet will appear less favorable. Although the original discount is usually amortized on a straight-line basis for income tax reporting, generally accepted accounting principles require the use of the effective interest method for financial reporting. Thus, charges to the income statement are smaller in early years. The balance sheet, however, is more highly leveraged when DDB's are used than when conventional bonds are used. At the time of issue, the liability is equal to the proceeds, but as the original discount is amortized, the recorded liability increases. At maturity, then, the liability includes deferred interest as well as the proceeds. In contrast, the recorded liability related to a conventional issue is equal to the proceeds only.

Advantages to investor

What type investors are attracted to DDB's? For a tax-exempt organization, DDB's might be a good investment for a number of reasons. First, and especially important to pension funds that rely on matching cash inflows and outflows, investors are protected against an early call by the issuer. Since the bonds are callable only at par, the issuer would realize no interest savings with an early redemption. Therefore, the risk to the investor of having to reinvest at a lower future interest rate is virtually eliminated.

Second, DDB's may provide a favorable guaranteed reinvestment return. Since the investor receives some or all of his interest at maturity (and thus less annually), less of his total return is subject to the risk of being reinvested at lower interest rates in the future. This guaranteed reinvestment return feature can also be disadvantageous if interest rates rise.

Third, DDB's have greater price appreciation potential than current coupon bonds. Assuming equal dollar amounts invested, DDB's are more volatile since relatively more of their investment return remains outstanding for the stated maturity of the bonds. Thus, relatively more of the total investment is subject to changes in interest rates. This feature is unattractive when interest rates are expected to rise.

Disadvantages to investor

Of course, DDB's also have some negative aspects from the buyer's perspective. The Internal Revenue Service requires even cash-basis investors to amortize the original discount of most corporate bonds annually into taxable income. This results in a very unfavorable tax situation for a taxpaying investor and is the reason original issue DDB's are purchased almost exclusively by tax-exempt organizations. In addition, deep discount bonds inherently yield a lower cash flow and generally carry a lower implicit interest rate than comparable conventional bonds.

Summary

Since DDB's offer some definite advantages to tax-exempt investors, is it safe to assume that the market will be flooded with this type security? Certainly the market for DDB's is potentially huge since tax-exempt organizations (mainly pension plans) purchase approximately 80 percent of corporate debt securities. A major controlling factor on the number of DDB issues will be investor faith. How many companies would you be willing to trust to hold 10 or 15 years of a portion of your interest payments, as well as your principal?

A broker should be able to help decide which companies are worthy of this trust. However, when consulting a broker about DDB's, keep one thought in mind: Some brokers are very eager to sell DDB's. Due to the large discount, the same number of dollars will buy a greater number of deep discount bonds than current coupon bonds. Because commissions are based on the bond's face value, brokers can earn two or three times more selling DDB's.

Original issue deep discount bonds are a welcome addition in the securities market. Although they generally do not appeal to individual investors or other taxpaying entities, DDB's are, for many tax-exempt organizations, an excellent investment opportunity. □

Public Employee Plans: Benefits in education

(Continued from page 23)

fected by the amount of service a member must have to qualify, the cause of death, and a predetermined choice between death and survivor benefits.

Every state system provides for permanent disability payment for members after a certain number years of service or below a certain age with a specified number of years of service.

Financing and investments

The vast majority of systems (38) require members to contribute a certain percentage of all earned income from public employment toward retirement benefits. This amount ranges from a low of 3.0 percent in Indiana to a high of 9.5 percent in Missouri, with an average contribution of 6.23 percent. Only Florida, Michigan, New York, Tennessee, and Wyoming do not require members to contribute.

In 23 systems, employer contributions are paid by the state, in 11 they are paid by the local school district, and in 14 they are shared between the two. The amount of contribution varies widely from state to state; it can match the member contribution, be set as a fixed percentage of payroll, be a lump sum, be actuarially determined, or another method. Five states are funded by the pay-as-you-go system, one through terminal funding, three through attained age normal with amortization, three through aggregate, two through individual level premium funding, two through entry age normal interest only, and 34 through entry age normal with amortization.

In its section on investments, NEA surveyed state education systems on such informaton as their statutory limitations on investments, holdings of the systems, the number of different stocks and bonds in the portfolio, the individual responsible for investing the funds, and the investment counsel firm used, if any. Much of this information was also compiled by *Pension World* and is available in the Ninth Annual Survey of State Retirement Systems (August 1982, p. 35).

Table III shows that programs are available in other categories, as well, in many states. These include tax-sheltered annuities, salary deferral plans, life insurance, health care plans, publications, newsletters, annual account statements, field counseling, and electronic funds transfer. Figures shown in the columns represent the number of participants in these programs as reported by the state systems. □