

Corporate Issuance Strategy

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Issuing Corporate Put Bonds

- By issuing a put bond, a borrower can reduce its interest expense below that of a bond without any embedded options.
- During the put protection period, the issuer enjoys a lower interest expense. After the put protection period, however, if interest rates rise and the bond is put back, the issuer must refinance the bond at higher interest rates.
- Issuers who expect that interest rates will not move up significantly, who have financing horizons matching the maturity of the put or who can neutralize the optionality of their put bonds (by buying relatively cheaper options in other markets) should issue put bonds. Issuers who have a natural way to hedge their interest rate exposures should also issue put bonds.
- Suppose that a hypothetical industrial borrower can issue a 30-year noncallable bullet bond at 115 basis points over Treasuries. By introducing a one-time par put feature in year ten, the issuer theoretically can reduce its annual interest expense by 14 basis points relative to a ten-year bullet and by 76 basis points relative to a 30-year bullet.

Question 1

What is a put bond?

Answer 1

A put (or putable) bond gives an investor the right, but not the obligation, to put a bond back to the issuer, usually at par or at a specified put schedule, after a given time period (put maturity) from the issuance date.

The put can be designed to be exercised at one time (European option), at any time after put maturity (American option) or during selected time periods after put maturity (serial, mid-Atlantic or Bermuda option). In 1994, one-time puts have enjoyed a resurgence of popularity among both issuers and investors (see Figure 1). Serial puts are also common, whereas American puts are virtually nonexistent. Recently, two borrowers have issued 30-year bonds putable at par in 12 years (30 Put 12), primarily to match their own financing horizons.

However, borrowers also have issued other structures such as step-up putables. For example, in May 1994, WMX Technologies Inc issued a 30-year bond putable at par — or have a step-up in three years. That is, WMX gave the investors the right to either put back the bond to the company at par or to receive a stepped-up coupon of 8%, a 178-basis-point increase above the original coupon of 6.22%.

Figure 1. Put Bond and Note Issuance in the U.S. Corporate Public Bond Market, Jan-Jun 94 (Dollars in Millions)

Issue Date	Principal Amount	Issuer	Rating	Coupon	Structure	New Issue Spread to Treasuries
23 Jun 94	\$700	Hydro-Quebec	A1/A+	8.050%	30 Put 12	95bp
08 Jun 94	200	Eastman Chemical	Baa1/BBB	7.625	30 Put 12	75
02 May 94	150	WMX Technologies	A1/AA-	Varies	Step-Up	—
20 Apr 94	150	Columbia Healthcare	A3/BBB+	8.360	30 Put 10	90
07 Apr 94	150	General Electric Capital	Aaa/AAA	Varies	Step-Up	—
06 Apr 94	100	General Electric Capital	Aaa/AAA	Varies	Step-Up	—
29 Mar 94	100	GFC Financial	Baa2/BBB	7.390	7-Yr. Poison ^a	88

^a Putable at par with rating decline prior to expiration, bp Basis points. Sources: Securities Data Corp. and Salomon Brothers Inc.

Question 2

How is a put bond priced?

Answer 2

Issuing a put bond is equivalent to issuing the corresponding bullet bond and selling a put option to the investor. The put option's premium determines the borrower's cost savings. Naturally, the pricing of the bullet bond depends on the Treasury yield curve and a spread to reflect the borrower's credit.

The pricing of the put option, however, primarily depends on the maturity and structure of the put, on how deep the put is struck in- or out-of-the-money and on the expected volatility of interest rates.

In general, we expect that a put would be more valuable to its holder:

- The more times that it can be exercised (that is, a one-time put would give less value to its holder than an American put);
 - The more in-the-money it is struck; and
 - The greater the volatility of interest rates.
- On the one hand, the longer the maturity of the put option, the higher its value because option values increase with time to expiration. On the other hand, the longer the maturity of the option, the shorter the maturity of the outstanding bond into which the option can be exercised. This second factor decreases the value of the option.

The current environment can be characterized by a steep yield curve, particularly up to ten years, and high interest rate volatility — compared with historical standards (see Figures 2 and 3). As such, par puts are historically valuable in the current environment. This is because of the following:

- A par put is significantly more in-the-money (relative to forward rates) in a steep yield curve environment than in a flat yield curve environment (see Figure 4); and
- High interest rate volatility (see Figure 5) indicates high put option valuation.

Figure 2. 30-Year Treasury Rates Minus Three-Month Treasuries and 30-Year Treasuries Minus Ten-Year Treasuries, Jul 89-Jul 94

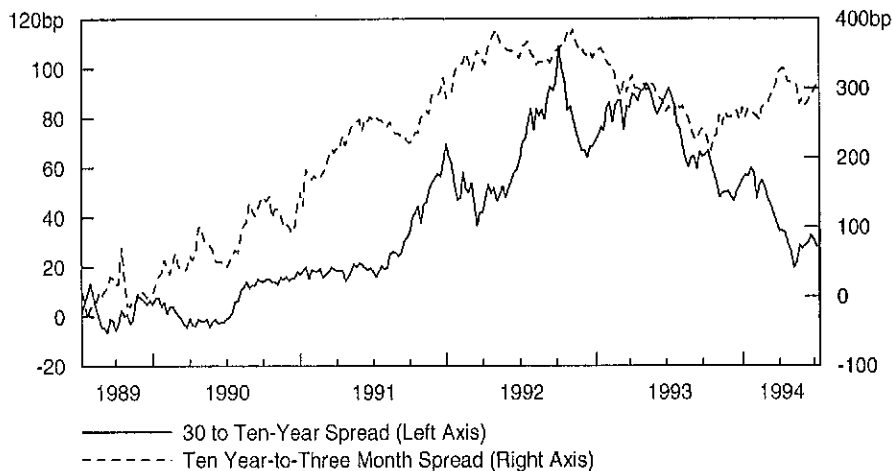


Figure 3. Historical Ten-Year Treasury Interest Rate and Price Volatilities, Jan 92-Jul 94

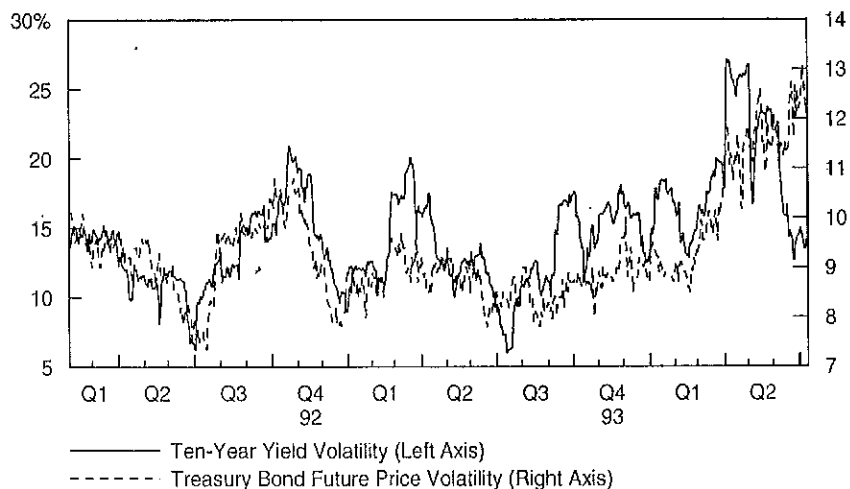
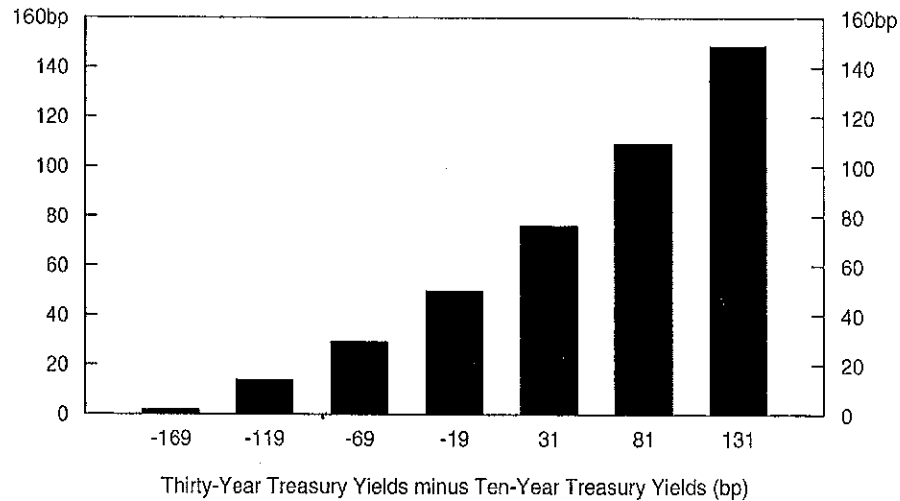
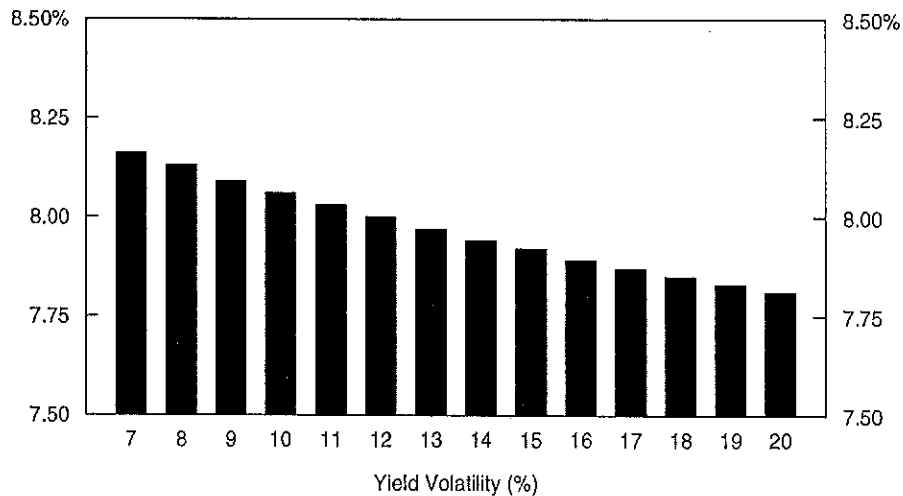


Figure 4. Interest Rate Savings of a Hypothetical 30-Put Ten Bond Compared With a 30-Year Bullet versus the 30- to Ten-Year Treasury Spread



bp Basis points.
Source: Salomon Brothers Inc.

Figure 5. Coupon Rate of a Hypothetical 30-Year Bond Puttable in Year Ten versus Yield Volatility



Source: Salomon Brothers Inc.

Question 3

How does the coupon of a 30 Put 10 bond compare with the coupon of a 30-year bullet and a ten-year bullet, assuming that the bonds are issued at par?

Answer 3

The coupon of a 30 Put 10 always will be less than the minimum of a 30-year straight bond coupon and a ten-year straight bond coupon, regardless of the shape of the yield curve. The reason is as follows:

- The investor can view the 30 Put 10 bond as a 30-year bond with a put option in ten years or a ten-year bond with an option to extend to 30 years.
- Hence, as long as these options have positive value, a 30 Put 10 bond's coupon will be less than a straight ten-year or 30-year bond, assuming that the bonds are issued at par.

- If this were not the case, there would be a riskless arbitrage opportunity for the investor in buying the cheap put bond and selling the straight bond.

Question 4

What kind of borrowers should issue put bonds, and who has issued them so far?

Answer 4

The best candidates will be borrowers who hold the following views:

- Expect that Treasury rates will fall;
- Expect that their credit spreads to Treasuries will fall;
- Do not expect liquidity constraints if the bond is put back;
- Can naturally hedge their interest rate exposures;
- Expect that interest rate volatility will fall, enabling them to buy back or neutralize their issued puts in the future;
- Think that they can immediately neutralize the puts by purchasing cheaper puts in the derivatives market; and
- Can be flexible if bond is put back.

Several issuers with credit ratings ranging from AAA to BBB recently have issued put bonds (see Figure 1) in sizes ranging \$100-700 million. Overall investment-grade corporate put note and bond volume during the January-June 1994 period totaled approximately \$1.5 billion.

Question 5

What are the risk-reward trade-offs of issuing simple put bonds?

Answer 5

By issuing a put bond, a borrower may be able to reduce its interest expense below that of a straight bond. During the put protection period, the issuer enjoys a lower interest expense. After the protection period, however, if interest rates rise and the bond is put back, the issuer must refinance the bond with higher interest rates.

Consider the financing alternatives presented in Figure 6.

Figure 6. Hypothetical Financing Alternatives for an Industrial Issuer (Assumes Par Issuance)

Structure	Treasury Yield	Nominal Spread	OAS ^a	Coupon	All-In-Cost ^b
30 Noncall Life	7.61%	115bp	120	8.76%	8.84%
Ten Noncall Life	7.30	84	85	8.14	8.24
30 Put 10	7.61	39	104	8.00	8.09

^a OAS stands for option-adjusted spread. Option-adjusted spread (OAS) is a common way of looking at spreads of bonds. The OAS of a put bond is defined as the spread that has to be added to the relevant Treasury interest rate such that the market price of the put bond and the present value of all future bond cash flows match. Stated differently, the OAS reflects the credit spread implicit in the bond after all optionalities are removed. For a more detailed discussion of OAS, see *Evaluating the Option Feature of Mortgage Securities: The Salomon Brothers Mortgage Pricing Model*, Michael Waldman, et al., Salomon Brothers Inc, August 1986. Generally, to calculate OAS, an interest rate tree is built, and contingent cash flows accordingly are calculated and discounted to the present. ^b Assumes underwriting costs. bp basis point.

By issuing a 30 Put 10 bond, a borrower would save 76 basis points in annual interest expense relative to issuing a straight (nonputtable) 30-year bond (see Figure 6). Naturally, if the bond is not put back, the borrower achieves an annual savings of 76 basis points, compared with a straight 30-year financing. If, however, the bond is put back to the borrower, and the borrower has to refinance itself over the remaining horizon, the borrower may be worse off than if he had issued a straight bond. The extent of the borrower's loss depends on how far interest rates rise in year 10. In this example, if the 20-year borrowing in year 10 rises to 10.02%, the borrower breaks even, compared with a straight 30 year bond.

If, however, a borrower's financing horizon is not 30, but ten, years, a borrower still may be able to save 14 basis points, relative to a straight ten-year bond. In our example in Figure 6, the coupon of the 30 Put 10 structure has a 70-basis-point spread to ten-year Treasuries, compared with an 84-basis-point spread for the ten-year noncall life structure. The risk of issuing such a 30 Put 10 is that interest rates may not rise and the put is not exercised. If so, the borrower may need to buy back its outstanding bonds at a premium. Tax-paying corporations may enjoy tax benefits from such a premium purchase. Nevertheless, as long as the 20-year borrowing rate ten years from now does not fall below 7.73%, a corporation breaks even or is better off relative to a bullet ten-year issuance (see Figure 7), assuming that there are no tax implications.

Figure 7. Break-Even Analysis of Issuing Put Bonds

Horizon	Annual Savings Compared With Horizon Bullet	Break-Even or Beneficial 20-Year Rate Ten Years From Issuance
Ten-Year	14bp	7.73% or Above
30-Year	76	10.02% or Below

bp Basis points.

It is important to remember that investors will put the bond back if the issuing corporation's borrowing rate rises, causing the put to be in-the-money. The corporation's borrowing rate is primarily a function of two variables: the level of Treasury rates — which are independent of the corporation's credit condition — and the corporation's credit spread to Treasuries. Issuers who expect that interest rates will not move up significantly or who believe that they can neutralize the optionality of their put bonds by buying relatively cheaper put options in other markets — for example, by buying swaptions to pay fixed — should issue put bonds.

Therefore, by issuing a put bond, a company's management also sends a positive signal concerning the company's credit. That is, even if the bond is put back to the company as the result of an increase in the overall level of interest rates (Treasuries), the corporation believes that it may achieve relative savings because of its declining credit spread.

Question 6

How should investors view the risk-return characteristics of a put bond?

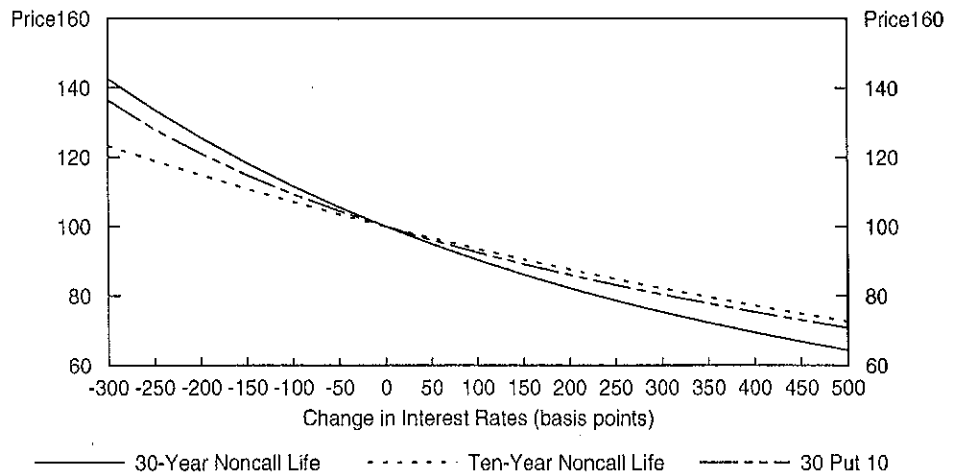
Answer 6

Typically, when analyzing the risk-return characteristics of a bond, investors look at such measures as duration and convexity. In a nutshell, duration measures the approximate price sensitivity of an instrument to changes in interest rates. Convexity, however, measures how the linear relationship known as duration changes with interest rates. Because duration and convexity are mere summary statistics, the best way to analyze the risk/return trade-offs of a bond is to look at the sensitivity of its price to yield changes.

Figure 8 presents the price versus yield characteristics of a 30 noncall life bond, a 30 Put 10 bond and a straight ten-year bond. The price-yield sensitivity of the 30 Put 10 bond falls in between the 30 noncall life and the 10 noncall life. As interest rates rise, the put bond behaves similarly to the ten-year straight bond because the put option is likely to be exercised. Conversely, as rates decline, the put option is likely to expire out-of-the-money, causing the put bond to behave similarly to a 30-year straight bond.

Investors buy put bonds to express their views on interest rates and credit spreads and to match duration targets.

Figure 8. Price versus Yield — 30 Noncall Life, 30 Put 10, and 10 Noncall Life Bonds



Question 7

What are the tax implications of issuing put bonds?

Answer 7

The tax treatment of put bonds is similar to the tax treatment of straight bonds. That is, coupon payments are treated as tax deductible interest for income tax purposes. If the issue is put back on the put maturity date, then the tax treatment is as if the bond matured on the put date. In addition, remaining unamortized underwriting expenses are expensed on the put date.

However, the tax treatment of Original Issue Discount (OID) put bonds is somewhat more involved. Simply stated, the yield to maturity on a long-term debt obligation and the amount of OID are generally determined using the higher of the yield to put or the yield to maturity.

Question 8

What is the accounting treatment of put bonds?

Answer 8

If the put is at par, then its accounting treatment is similar to that of a simple bond. If, however, the put is at a premium, then the issuer should accrue a liability for the put premium over the period from the date of debt issuance to the initial put date. If the put is not exercised, the put premium should be amortized as a yield adjustment over the remaining term of the debt.

In the year of the exercise of the put, if the issuer intends and has the ability to refinance the puttable debt with debt having a maturity of greater than one year, then the issuer can continue to classify the debt as long term. Otherwise, the debt should be reclassified as short term.

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