

## Corporate Issuance Strategy

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### Salomon Brothers

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### Bulletin: 50- and 100-Year Bonds

- Certain investment-grade borrowers now face a unique opportunity to lock in historically low interest rates while extending the duration of their liabilities by issuing bonds with maturities ranging from 50 to 100 years.
- Moreover, eligible borrowers can issue **50- or 100-year bonds** with attractively priced call provisions.
- The market for 50-year bonds was reestablished in March 1993 by the ground-breaking Texaco Capital 50-year bond. Including Texaco, five industrial issuers have accessed the 50-year public corporate debt market to raise a total of \$1.25 billion (see Figure 1). Furthermore, two issuers have accessed the 100-year public corporate debt market for \$450 million.
- The confluence of record-low 30-year Treasury yields and historically tight corporate bond spreads are among the factors driving the issuance of 50- and 100-year bonds.
- Yield-hungry investors who are bullish on the bond market or who need to match long-term liabilities with long-dated assets have developed an appetite for longer bonds. Furthermore, the duration and, thus, the quarterly mark-to-market sensitivity of 50- and 100-year bonds are only marginally higher than 30-year bonds. Therefore, even small amounts of additional yield may tend to compensate investors for the incremental risks that they undertake.

Figure 1. 50- and 100-Year Bond Issuance in the U.S. Corporate Public Bond Market, Mar-Sep 93

Issue Date	Principal Amount <sup>a</sup>	Issuer	Rating	Coupon	Structure	New Issue Spread (bp)	Secondary Mid-Market Spread (bp) <sup>b</sup>
4 Mar 93	\$200	Texaco Capital	A1/A+	7.500%	50 NC-20	+89	+92
6 Apr 93	175	Boeing	A1/AA-	7.875	50 NC-L	+100	+92
19 May 93	250	Conrail	A2/A	7.875	50 NC-L	+87	+90
10 Jun 93	200	Ford Motor Co.	A2/A	7.750	50 NC-L	+98	+97
9 Jul 93	300	Pacific Bell	Aa3/AA-	7.375	50 NC-20	+78	+78
21 Jul 93	300	Walt Disney Co.	Aa3/AA-	7.550	100 NC-30	+95	+88
22 Jul 93	150	Coca Cola	Aa3/AA	7.375	100 NC-L	+80	+63

<sup>a</sup> Dollars in millions. <sup>b</sup> As of September 13, 1993; spread versus U.S. 7.125% of 2/15/23. bp Basis points.

L Life. NC Noncall.

Source: Salomon Brothers Inc.

## QUESTIONS FROM ISSUERS AND INVESTORS

**Question 1:** *Why should a company issue a 50-year noncall life bond as opposed to a 30-year noncall life bond and bear an indicative extra cost of ten basis points?*

**Answer 1:** A borrower would issue a 50-year bond for the following reasons:

- To match assets and liabilities: Borrowers who have long-term assets such as oil reserves, railroad networks, and research and development expenses to be amortized over long horizons may be inclined to issue 50- or 100-year bonds as an economic hedge.
- To reduce rollover risk: If an issuer's borrowing horizon is greater than 30 years, then the risk/return tradeoff of issuing 50- or 100-year bonds may look attractive. For example, a typical AA rated borrower would bear a 101-basis-point extra cost by issuing a 30-year noncall life bond versus a 10-year noncall life bond, or 5 basis points per year of additional maturity. However, the incremental cost of using a 50-year noncall life issue versus a 30-year noncall life issue is ten basis points, or one half a basis point per year of additional maturity. Therefore, if the decision to move from a ten-year financing horizon to a 30-year horizon is rational, then the decision to move from a 30-year to a 50-year horizon also should be rational.
- To vote a borrower's views: If a borrower believes that long-Treasury yields, corporate-bond spreads and inflation rates have bottomed out, then issuing 50- or 100-year bonds is a reasonable strategy.

**Question 2:** *How should a borrower compare issuing 50- or 100-year bonds with issuing equity?*

**Answer 2:** Very long-dated bonds (especially 100-year bonds) have significant equity-like features in that principal repayment is extremely distant. Under this view, issuers will be raising equity-like capital at relatively low cost. However, the bond rating agencies and other credit analysts do not seem to distinguish between the credit quality of 50- and 100-year bonds and other intermediate- or long-term debt of the same issuer. For high-quality credits, maturity composition beyond about five years is not a significant issue for the rating agencies. If 50- or 100-year debt is used to replace excessive short-term debt on an issuer's balance sheet, rollover risk is reduced with a likely favorable rating agency reaction.

**Question 3:** *Can an issuer justify the 20-basis-point extra cost of a 100-year noncall life bond versus a 50-year noncall life bond, given that the durations of these two bonds are virtually identical (see Figure 2)?*

**Answer 3:** The duration of a bond is one of the primary determinants of the price of a bond, but not the only one. Unlike Treasury pricing, corporate bond pricing also is critically dependent on credit spreads. When maturities extend as

long as a century, investors have to be compensated relatively more for credit because of the enormous range of uncertainty associated with such issuers — this is true for even the best known names and credit histories. Therefore, investors will demand correspondingly extra compensation for bearing such uncertainties.

Figure 2. Comparative Statistics: 50- and 100-Year Bonds versus Conventional Bonds, 9 Sep 93<sup>a</sup>

Maturity	Call Features <sup>a</sup>	Credit Spread <sup>b</sup>	Coupon <sup>c</sup>	Effective Duration	Effective Convexity
10-Yrs.	NC-Life	42bp	5.65%	7.72	0.73
20-Yrs.	NC-Life	43	6.44	11.37	1.84
30-Yrs.	NC-Life	55	6.56	13.40	2.85
30-Yrs.	NC-10	70	6.71	11.38	1.03
40-Yrs.	NC-Life	60	6.61	14.19	3.48
40-Yrs.	NC-10	80	6.81	11.67	1.15
50-Yrs.	NC-Life	65	6.66	14.54	3.87
50-Yrs.	NC-20	75	6.76	13.07	2.52
100-Yrs.	NC-Life	85	6.86	14.56	4.22

<sup>a</sup> All calls are at a premium. <sup>b</sup> Indications only for a generic AA-rated issuer. <sup>c</sup> Assumes a ten-year Treasury yield of 5.23% and a 30-year Treasury (the 7.125% of 2/15/23) yield of 6.01%. Also assumes par issue such that coupon equals yield to maturity. bp Basis points. NC Noncall.  
Source: Salomon Brothers Inc.

**Question 4:** *Why would a borrower issue a 50- or 100-year bond when the yield curve is currently so steep with short-term interest rates at such low levels?<sup>1</sup>*

**Answer 4:** Though the yield curve is still steep, a borrower can issue a long maturity bond to lock in a historically low long-term interest rate and eliminate liquidity risk for 50 or 100 years. Furthermore, by combining swaps or other derivatives with a 50-year financing, the issuer can effectively separate the liquidity risk of not being able to raise capital from the management of interest-rate risk.

**Question 5:** *How can swaps or other derivatives be used to manage interest-rate exposure after a borrower has issued a long-dated bond?*

**Answer 5:** If a borrower expects that the short end of the yield curve will not rise significantly in the near future, then he can overlay the long-dated bond issuance with a shorter-dated interest rate swap agreement. To reduce a borrower's interest expense in the early years, he can enter into a reverse interest rate swap, thereby receiving a fixed rate approximately matching the coupon of the bond issue and paying a floating rate.

Because interest rate swaps are flexible and liquid instruments, a borrower can unwind such an interest rate swap in case future rates exceed the coupon of the underlying bond, or if his interest-rate expectations change. Such an unwind, however, may cost the borrower. Alternatively, if floating rates remain at low levels, the borrower can rollover the interest rate swap upon its maturity into a new swap.

**Question 6:** *Should a borrower include a call provision in a 50- or 100-year financing?*

**Answer 6:** The decision to include a call provision in a debt issue should be based on the following factors: (1) The need for additional refinancing flexibility within the current portfolio; (2) a theoretical valuation of the call provision; (3) future breakeven financing rates; and (4) the borrower's tax-paying status.

For example, an issuer can include a call provision on a 50-year bond (noncall for 20 years with a premium call) for an additional ten basis

<sup>1</sup> The current 3-month libor to 30-year AA corporate spread is over 300 basis points — compared to a ten-year historical average of about 175 basis points. Currently, 3-month libor is at 3.19%.

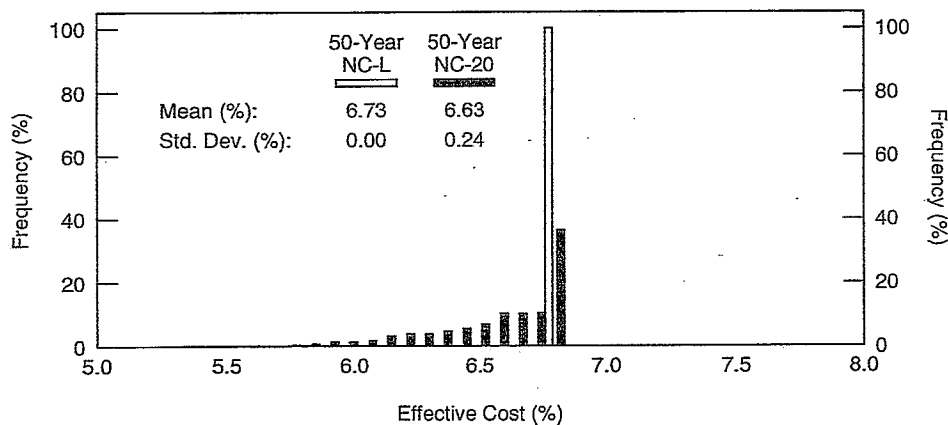
points. If rates are sufficiently lower than the original coupon beyond year 20, then the issuer would have the opportunity to refinance in an attractive interest rate environment.

Salomon Brothers has developed a simulation-based analysis that values a call option by evaluating the interest costs to the issuer over a large number of interest-rate scenarios, including those in which the issuer would choose to refinance at prevailing lower rates. This analysis assumes that future rates are expected to follow the forward curve, on average, but may also deviate from it with an assumed dispersion (volatility). We conclude that the implied value of the call option is at least as large as the market price of the option for both nontaxable and taxable issuers. For taxable issuers in particular, our analysis suggests that the value of the call option is approximately 20 basis points — ten basis points greater than the cost of the option. (See Figure 3 for a comparison of the probability distributions of the effective costs of the callable and noncallable alternatives.)

These benefits to the taxable issuer result from the tax deductibility of the call premium as well as the accelerated tax benefits derived from the refinancing potential of a callable bond versus a noncall life bond with equivalent pretax cost.<sup>2</sup>

An alternative way of analyzing whether to include a call provision is to calculate future breakeven refinancing rates. For example, the breakeven refinancing rate in year 20 for a 50- noncall 20 bond with a coupon of 6.76% is 6.32%. This rate implies that if the issuer's 30-year cost of funds drops below 6.32% (assuming no transaction costs) in year 20, then financing with the call option will have proven to be the superior strategy. However, if rates rise above 6.32% in year 20, then issuing the noncall life bond would have been the better strategy.

Figure 3. 50-Year Noncall Life Financing versus 50-Year Noncall 20 Financing — Frequency Distribution of Effective Costs



Note: Assumes that expected future refinancing rates follow the forward curve with an 8% volatility, and an issuer's tax rate of 35%.  
Source: Salomon Brothers Inc, Financial Strategy Group.

<sup>2</sup> For example, if a 50 NC-20 bond is refinanced after 20 years at a lower rate, the cash flow pattern over the horizon will consist of 20 years of high coupons followed by 30 years of lower coupons. For the taxable issuer, the taxable equivalent cost of these after-tax cash flows is cheaper than that of a 50 NC-L bond with the same pretax cost because more of the tax-deductions come earlier.

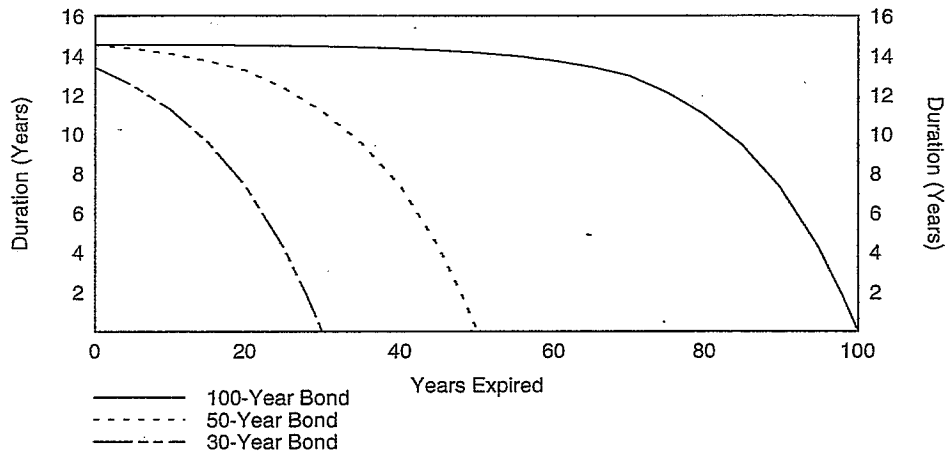
Question 7:

*How do 50- and 100-year bonds age (roll down the yield curve)?*

Answer 7:

Compared with a 30-year noncall life bond, 50- and 100-year bonds age slower in the beginning of their lives. A 50- or 100-year bond's duration remains relatively constant versus that of a 30-year bond in the early stages of its life (see Figure 4). For example, in the first decade of its life, a 50-year noncall life bond's duration drops by less than half a year, compared with a 30-year noncall life bond whose duration drops by more than two years. This observation implies that issuers and investors who wish to maintain a constant duration throughout time will benefit from very long-dated debt. The duration stability of 50- and 100-year bonds frees asset or liability portfolio managers from the need for frequent portfolio rebalancing.

Figure 4. Duration versus Time — 100-, 50-, and 30-Year Noncallable Bonds



Source: Salomon Brothers Inc, Financial Strategy Group.