

EXHIBIT 5-7

Coupon Frequency, Day Count Conventions, and Ex-Dividend Trading Practices in Major Bond Markets Throughout the World

Market	Coupon Payments	Day Count	Ex-Dividend Trading
U.S. Government	Semiannual	Actual/Actual (in period)	N
U.S. Corporate	Semiannual	30/360	N
U.S. Government Agency	Annual	30/360	N
	Semiannual		N
	Quarterly		N
U.S. Municipal	Semiannual	30/360	N
U.K. Government	Semiannual	Actual/365	Y
Australian Government	Semiannual	Actual/Actual (in period)	Y
New Zealand Government	Semiannual	Actual/Actual (in period)	Y
Canadian Government	Semiannual	Actual/Actual (in period)	N
German Government	Annual	30E/360	Y
Swiss Government	Annual	30E/360	N
Dutch Government	Annual	30E/360	Y
Eurobond	Annual	30E/360	N
Italian Government	Annual	30E/360	N
French Government	Annual	Actual/Actual (in period)	N
Danish Government	Annual	30E/360	Y
Swedish Government	Annual	30E/360	Y
Spanish Government	Semiannual	Actual/Actual (in period)	N
Belgian Government	Annual	30E/360	N
Irish Government	Annual	Actual/365	Y
Austrian Government	Annual	30E/365	Y
Norwegian Government	Annual	Actual/365	Y

Source: Dragomir Vigin, *Price/Yield Calculations for Periodic Payment Fixed Income Securities*, undated manuscript, Appendix A, p. 18.

Basic financial calendars provide the day count between settlement and the next coupon payment. Most money managers, however, use software programs that will furnish this information.

Compounding

Once the number of days between the settlement date and the next coupon date is determined, the present value formula must be modified to take into account that the cash flows will not be received 6 months (one full period) from now. The "street" convention is to compute the price as follows:

1. Determine the number of days in the coupon period.
2. Compute the ratio:

$$w = \frac{\text{Number of days between settlement and next coupon payment}}{\text{Number of days in the coupon period}}$$

For a corporate bond, municipal bond, or agency security, the num period will be 180, since a year is assumed to have 360 days. For a security, the number of days is the actual number of days. The num period is called the *basis*.

3. For a bond with n coupon payments remaining to maturity,

$$p = \frac{c}{(1+i)^w} + \frac{c}{(1+i)^{1+w}} + \frac{c}{(1+i)^{2+w}} + \dots + \frac{c}{(1+i)^{n-1+w}} + \frac{M}{(1+i)^{n-1+w}}$$

where

- p = Price (\$);
- c = Semiannual coupon payment (\$);
- i = Periodic interest rate (required yield divided by 2) (in deci
- n = Number of coupon payments remaining;
- M = Maturity value.

The period (exponent) in the formula for determining the presen generally as $t - 1 + w$. For example, for the first cash flow, the perio w . For the second cash flow it is $2 - 1 + w$, or simply $1 + w$. If the bond remaining, the period is $20 - 1 + w$, or simply $19 + w$.

Illustration 5-9 Suppose that a corporate bond with a coupon rate .1, 2003, is purchased with a settlement date of July 17, 1997. What wo be if it is priced to yield 6.5%?

The next coupon payment will be made on September 1, 1997. Sinc bond, the 30/360 day count convention is that there are 44 days betwee the next coupon date. The number of days in the coupon period is 180

$$w = \frac{44}{180} = .24444.$$

The number of coupon payments remaining, n , is 12. The semiannua (6.5%/2). Calculation of the price is shown in Exhibit 5-8.

The price of this corporate bond is \$120.0281. The price calcula the *full price* or *dirty price* because it reflects the portion of the coupon will receive but that the seller has earned.