Module 4: Classroom Exercise

The Value Of Bonds

This activity helps students understand how bonds trade, what provides a bond with its value, and how bond prices are affected by interest rates. We also explore the formula to value a bond and determine the bond's yield to maturity.

Part 1: Basic Understanding

Answer the questions below related to how investors value bonds.

What's the value to you of a $1,000 face-value bond with an 8% coupon rate when your required rate of return is 15 percent?

A. More than its face value.
B. Less than its face value.
C. $1,000.

2. If the intrinsic value of a bond is greater than its market value, which of the following is a reasonable conclusion?

A. The bond has a low level of risk.
B. The bond offers a high coupon.
C. The market is undervaluing the bond.
D. The market is overvaluing the bond.

3. When the market's required rate of return for a particular bond is much less than its coupon rate, the bond is selling at:

A. a premium.
B. a discount.
C. cannot be determined without more information.
D. face value.

4. If an investor may have to sell a bond prior to maturity and interest rates have risen since the bond was purchased, the investor is exposed to:

A. the coupon effect.
B. interest rate risk.
C. a perpetuity.
D. an indefinite maturity.

5. Virgo Airlines will pay a $4 dividend next year on its common stock, which is currently selling at $100 per share. What is the market's required return on this investment if the dividend is expected to grow at 5% forever?

A. 4 percent.
B. 5 percent.
C. 7 percent.
D. 9 percent.

6. Interest rates and bond prices:

A. move in the same direction.
B. move in opposite directions.
C. sometimes move in the same direction, sometimes in opposite directions.
D. have no relationship with each other (i.e., they are independent).

7. In the United States, most bonds pay interest _____ a year, while many European bonds pay interest _____ a year.

A. once; twice
B. twice; once
C. once; once
D. twice; twice

8. The expected rate of return on a bond if bought at its current market price and held to maturity.

A. yield to maturity
B. current yield
C. coupon yield
D. capital gains yield

Part 2: Challenge Questions

9. A company just issued 15-year bonds with a $1,000 face value. The coupon rate on these bonds is 8.6% and interest is paid semi-annually. If the yield to maturity on the bonds is 8.2%, what is the current price of these bonds?

10. A company just issued 10-year bonds with a $1,000 face value. The coupon rate on these bonds is 6.8% and interest is paid semi-annually. The current price of this bond is $1,044.22. What is the annual yield to maturity?

1. A company just issued some 15-year bonds with a $1,000 face value. The coupon rate on these bonds is 8.6% and interest is paid semi-annually. If the yield to maturity on these bonds is 8.2%, what is the current price of these bonds?

Financial Calculator solution:

Current Price

N = 15 x 2 = 30 six month periods
I/Y = 8.2%/2 = 4.1% every 6 months
PMT = (8.6% x 1000)/2 = 43 every 6 months
FV = 1000
CPT PV Answer = -1,034.17

The current price is $1,034.17

2. A company just issued some 10-year bonds with a $1,000 face value. The coupon rate on these bonds is 6.8% and interest is paid semi-annually. The current price of this bond is $1,044.22. What is the annual yield to maturity on these bonds?

Financial Calculator solution:

Current Price

N = 10 x 2 = 20 six month periods
PV = -1044.22
PMT = (6.8% x 1000)/2 = 34 every 6 months
FV = 1000
Cpt I/Y Answer = 3.1% every 6 months
x2

6.2% per year

The annual yield to maturity is 6.2%