Chapter Preview: Chapter 6

1. Define the following terms:

* Pure discount bond:

[Answer]

It is also called a zero-coupon bond. The bond repays the face value to the investor at maturity. However, the value of the bond is discounted because the face value at the time of sale is higher than the face value at the maturity date.

* Coupon bond:

[Answer]

Not only does this bond repay the face value of the bond at maturity, it also pays interest on the face value on a regular basis.

* Coupon rate:

[Answer]

The rate determines regular coupon payment for owner of bond.

* Yield-to-maturity:

[Answer]

The rate of return that can be obtained by purchasing the bond at the market price and holding it until the maturity date of the bond.

* Duration:

[Answer]

It refers to the weighted average maturity of cash flows (coupons, principal) from bonds. It is used as an indicator of how sensitive bond prices are to interest rates.

* Credit risk:

[Answer]

It represents the risk of default of the bond issuer. In other words, it indicates the possibility that the bond may not have paid the promised cash flow.

* Default spread:

[Answer]

Requiring an additional rate of return against risk-free bonds, depending on the risk of default held by the issuer of the bond.

1. If an interest rate falls, what happens to the bond price and why?

[Answer]

As interest rates rise, the price of bonds falls. Conversely, as interest rates fall, the price of bonds increases. This is because higher interest rates lower the present value (PV) of the cash flows of bonds to be paid in the future, and lower interest rates increase the present value of future cash flows.

1. Explain the difference between par, premium, and discount bonds.

[Answer]

par: bond price is equal to face value of bond

premium: bond price is more than face value of bond

discount: bond price is less than face value of bond

Each situation is classified according to the relative attractiveness of the coupon rate according to interest rate fluctuations.

1. Solve the following problems in the textbook.

#5.12 Suppose you purchase a 10-year bond with 4% annual coupon. You hold the bond for four years and sell it immediately after receiving the fourth coupon. If the bond’s yield to maturity was 3.75% when you purchased and sold the bond,

a) What cash flows will you pay and receive from your investment in the bond per $100 face value?

[Answer]

PV of coupon = $33.13

PV of face value = $69.54

Total purchase price = $102.67

PV of coupon = $20.63

PV of face value = $80.53

Total selling price = $101.16

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Year | 0 | 1 | 2 | 3 | 4 |
| Price | $(102.67) | $4 | $4 | $4 | $4 + 101.16 |

b) What is the internal rate of return of your investment?

[Answer]

#5.35 Suppose the yield on German government bonds is 1.2%, while the yield on Spanish government bonds is 7%. Both bonds are denominated in euros. Which country do investors believe is more likely to default? How can you tell?

[Answer]

Investors will appreciate Spain's chances of default higher. This is because the default spread is already reflected in the interest rates of government bonds issued by each country. Spanish government bonds have a higher interest rate of 5.8%p than the German government, which can be interpreted as reflecting additional interest rates to have higher attractiveness by reflecting the possibility of a higher default in Spain than in Germany.