Chapter8 preview

1. Definitions

- **Pure Discount Bond (Zero-Coupon Bond)**:

  A bond that pays no coupons and only pays its face value at maturity. It is sold at a discount to its face value, hence the term *pure discount bond*.

- **Coupon Bond**:

  A bond that pays periodic interest (coupon payments) and repays the principal at maturity. U.S. Treasury notes and bonds are examples.

- **Coupon Rate**:

  The annual interest rate stated on a bond, usually expressed as an APR. It determines the size of periodic coupon payments.

- **Yield to Maturity (YTM)**:

  The interest rate that equates the present value of all future cash flows (coupons and face value) to the current price of the bond. It represents the annualized return if held to maturity.

- **Duration**:

  A measure of a bond's price sensitivity to changes in interest rates. Specifically, it is the value-weighted average time until cash flows are received.

- **Credit Risk**:

  The risk that the bond issuer may fail to make full payments. Corporate bonds carry this risk, while Treasury securities generally do not.

- **Default Spread (Credit Spread)**:

  The difference in yield between a corporate bond and a Treasury bond of the same maturity. It compensates investors for the risk of default.

2. If interest rates fall, what happens to bond prices and why?

When interest rates fall, **bond prices rise**. This is because the fixed future payments (coupons and principal) of existing bonds become more valuable compared to newly issued bonds that offer lower rates. Mathematically, as the discount rate (interest rate) decreases, the present value of the bond’s future cash flows increases, thus increasing the bond's price.

3. Differences Between Par, Premium, and Discount Bonds

- **Par Bond**:

  A bond that sells at its face (par) value. This occurs when the bond's **coupon rate is equal to its yield to maturity (YTM)**. Investors receive interest payments that match current market rates.

- **Premium Bond**:

  A bond that sells **above its face value**. This happens when the **coupon rate is higher than the YTM**, making the bond more attractive to investors who are willing to pay more for higher interest payments.

- **Discount Bond**:

  A bond that sells **below its face value**. This occurs when the **coupon rate is lower than the YTM**, so the bond is less attractive in terms of interest payments, and is therefore sold at a discount.