Topic 2 : Debt Market and The Structure of Interest Rate (Supplement1)

EE431/438

Federic Mishkin, The Economics of Money, Banking and Financial Markets Chapter 4 - 6
(available at the reserve section of the library, HG173 .M57 2007)

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Supplement 1

- Bond Price VS. Par Value
- Interest Rate VS. Coupon Rate
- Bond Price = $\sum_t \frac{CF_t}{(1+k)^t}$
- discount rate VS. interest rate
- The discount rate is the rate applied in calculating present value, to convert future value into present value. It is called discount rate because present value is lower than its future value. The discount rate is the rate that discounts(reduces) the future value into present value.

- People may apply different discount rates to evaluate a price of a bond, which they are willing to pay.
- Each person's reservation price reflects each own opinion on the quality of the bond.
- A bond's market price reflects the market opinion on the quality of the bond.
- YTM is the discount rate that equates present value of future cashflows from bonds with its market price.
- If we apply a discount rate which is different from YTM, the present value of cashflows from a bond is not equal to its market price. In other words, we think that the value of the bond is different from its market value.

- If we apply a high discount rate on a particular bond, this means that we are willing to pay a low price. In other words, we require a high rate of return from investment in that bond.
- If we apply a low discount rate on a particular bond, this means that we are willing to pay a high price. In other words, we require a low rate of return from investment in that bond.
- A discount rate is the required rate of return an investor demands for investing in a particular investment.
- YTM is the discount rate that equates present value of future cashflows from bonds with its market price.
- YTM is the market required rate of return from bonds (if hold to maturity).
- YTM is the economic measurement of interest rate.
- When YTM (interest rate) $\uparrow$, bond price $\downarrow$.
- Different bonds have different degrees of price-sensitivity.

- a little increase in interest rate $\rightarrow$ a big decrease in bond price $\Rightarrow$ the bond is very price sensitive.
- a big increase in interest rate $\rightarrow$ a little decrease in bond price $\Rightarrow$ the bond is not very price sensitive.
- Consider 2 coupon bonds, same coupon rate, same YTM, different maturities
  1. A coupon bond, ttm = 10 years, coupon rate 5%, par = 1000 Baht, YTM = 5%
  2. A coupon bond, ttm = 2 years, coupon rate 5%, par = 1000 Baht, YTM = 5%

  - When $i \uparrow$ from 5% to 10%, the bond (1)'s price decreases more than bond(2)'s.
  - When $i \downarrow$ from 5% to 1%, the bond (1)'s price increases more than bond(2)'s.
- Bonds with longer maturities are more price senstive than bonds with shorter maturities, given the same coupon rate and the same YTM.