Week 3

Bonds and bond valuation

Bonds: long term debt securities

Notes: Unsecured debt securities

Bond features and prices

Coupon payments: interest payments paid periodically to a percentage value of face value.

Face value: Principle amount of bond that is repaid at the end of the term.

Coupon rate; Annual coupon divided by the face value of bond. 8/100 = 8%

Maturity: specified date at which the principle is paid.

Yield to maturity (YTM): The market interest rate that equates a bonds present value of interest payments and principle repayments with its price.

Bond value: PV of coupons + PV of face value.

- There is an inverse relationship between bond price and interest rates.
- These changes in interest rates change the value of a bond. If someone was to hold on to it. This change in interest rates will make it either a, premium or discount bond.

Premium bond: Bond sale price is higher than the market value. YTM < Coupon rate

Discount bond: Bond sale price is lower than the market value. YTM > coupon rate.

Interest Rate Risk

- Change in bond value can occur due to changes in interest rate.
- Long-term bonds have more price/interest rate risk then short term bonds.
- Low coupon rate bonds have more price-interest rate risk than higher coupon rate bonds because lower coupon rates rely too much on the face value received at the end. This could be changed at any time due to changes in interest rates, thus a change in the overall funds at the end. Also coupons are fixed, so getting the money now is better than waiting to receive the lump sum of face value, as there could be a crash in the market.

Debt and equity

Debt: Not ownership, no voting powers, interest is considered a cost (tax-deductable cost), creditors have legal recourse if payment is missed, and excess debt can lead to financial distress.

Equity: Ownership, can vote, receive dividends so not a cost to firm. Dividends are not a liability, and have no legal recourse. If payments aren't made, an all equity firm cannot go bankrupt.

Types of Debt

Government Securities: Treasury Bonds, Treasury notes

Other debt securities: Bank Bills, Commercial Notes, Promissory Notes, Corporate Bonds, Debentures, Unsecured Notes, Floating-rate Notes, Convertible Notes, Hybrid Securities, Collateralised debt obligation (CDO's)

Bond Ratings: AAA Being the best CCC being the worst.

Inflation and Interest Rates: inflation works against interest rates, in that it can erode the amount of return for an investor.

Fisher effect: relationship between the real, nominal and inflation rate as follow,

(1+Nominal) = (1+ Real interest rate)*(1+Expected inflation rate)

The fisher effect is seen as the most accurate formula compared to R=r+inflation

Ordinary Share Valuation

There are issues relating to share valuation:

1. Uncertainty of cash flows: dividends can change
2. Indefinite life: Life of investing is essentially forever, since there is no maturity
3. No easy way to observe the rate of return the market requires.

To value:

Price of share = Present value of all expected future dividends + Pv of selling price.

Case 1: Zero Growth (constant dividend)

D0 = D1 = D2 = D3

Therefore Price = d1/r

Case 2: Constant Growth

g>0 g1=g2=g3 therefore price = $\frac{Do(1+r)}{r-g} = \frac{D1}{r-g}$

Case 3 : Non-constant Growth

If growth rate is given	If expected dividend is given
1. Compute dividends until growth rate levels 2. Find expected future price 3. Find the PV of all expected future cash flows (dividends plus price in future years)	1. Compute PV of future share price. 2. Find current PV by adding PV of dividends plus PV of future share price.

Using Dividend growth model (DGM) to find R

R= $\frac{Do(1+r)}{r-g}$ + g R = $\frac{D1}{r-g} + g$