

security includes - bonds, debentures (convertible), equity shares, loan stock, callable bonds.

valuation of security & analysis

- Capax: year end.
- interest = always net of tax.
- dividend = no net of tax.
- cap value = $\frac{d_1}{k_e - g}$

What is the value/worth/should be price of security

given actual price should security be purchased?

MP > worth overpriced x purch.
MP < worth underpriced ✓ purchase

Value = worth = PV of future benefits = CMP = MPS

compare MP with worth.

DEBENTURES:

- conversion: only when $CMP(eg) > \text{worth of deb}^n$
- difference price
value of ES = value of debⁿ
- conv: 1 year ago 1-4 int
if n=5 4 used.
end of 4th year 1 int 1 used.
- amt now + growth of n years = amt @ n years.
- exp return = IRR

BONDS

It is a long term debt issued by corpora.
Coupon rate = int rate of bond.
Yield = total return which bonds give.
Yield on bonds.

Nominal yield
coupon rate / FV
= coupon rate

current yield
= $\frac{\text{annual int}}{CMP} \times 100$

Yield to maturity (YTM)
between generated TCF during life of bond.
= IRR of bond.
= $\frac{\text{int}(1 - \text{Tax}) + \frac{RV - IP}{n}}{1}$

$$IRR = LR + \frac{NPV(LR)}{NPV(LR) - NPV(HR)} \times \text{diff in rate}$$

CR > Yield: Premium yield & money ↑ premium
CR < Yield: discount yield & money ↓ discount

INTEREST:

- if n amount is paid every year then int will be on balance P i.e. $(P - n) \times IR$.

Int Period Rate (Int & disc)

Half yearly double 1/2
quarterly 4 times 1/4
monthly 12 times 1/12

compounding of int.

$$A = P(1 + r)^n$$

r = x same

$$A = P(1 + r_1)(1 + r_2)(1 + r_3)$$

DURATION OF BOND

- avg time taken by investor to recover the price of bond.
- except ZCB duration = term.

$$\text{duration} = \frac{\sum (\text{prop of PCF to YTM}) \times \text{year}}{\sum (\text{prop of PCF to YTM})}$$

CALLABLE BONDS

- in int rate - cancel old & replace with new
- feasible only if cost < benefit
- NPV +ve call the bond
-ve hold the bond

Cash flows

- premium (old bonds) (xx)
- Taxb. on premium (xx)
- old debt - TB on float cost w/o now (xx)
- 1-n TB on amortisation (xx)
= no longer in future.
- 0 Flt cost (new bonds) (xx)
- 1-n TB on amort of Flt cost of new (xx)
- 1-n Saving in int (NOT) (xx)
(new - old) x FV (1 - Tr)

VOLATILITY OF BOND

- yield & price: Inversely related.
- also called: modified duration.
- If volatility is 5% means
yield ↑ 1% price ↓ 5%
yield ↓ 1% price ↑ 5%

$$\text{Volatility} = \frac{\text{duration}}{1 + YTM}$$

RIGHT ISSUE OF SHARES

$$\text{Value (right)} = \text{ex right} - \text{right price}$$

$$\text{ex right / theoretical ex post} = \frac{\text{old} \times \text{FV} + \text{right share} \times \text{R price}}{\text{old} + \text{new share}}$$

shareholder
takes action (subsell) x action NW = ↓
NW = same
• sale of right at value of right