

## BUSINESS FINANCE-2

### Assignment - 1

1. D. IRR is the most reliable means of choosing between mutually exclusive projects.

2. A.  $\frac{\text{Market Price of share}}{\text{Earning per share}}$

3. D. All of the above

4. Cash flow from operating activities  
$$= \text{Op. profit} + \Delta \text{WC}$$
$$= 800000 + (3,50,000 - 250000)$$
$$= 900000$$

Ans C. 9,00,000

5. i. Cash flow = Sales - Cost - Tax  
$$= 2500 - 1500 - (40\% \times 1000)$$
$$= \underline{\underline{600}}$$

ii. Disc rate = 20%.

$$\begin{aligned} \text{NPV} &= \text{PV of inflow} - \text{PV of outflow} \\ &= \frac{2500}{(1+20\%)} - \frac{1500}{1+20\%} - \left( \frac{40\% \times 1000}{1+20\%} \right) \end{aligned}$$

$$= 500$$

iii. If suppliers allow you to pay at date 2;  
NPV will increase as now the outflow is being discounted for 2 yrs discounted for 2 years,

because of which PV of outflows falls.

6. Business efficiency can be measured using the foll. ratios:-

i.  $\text{Inventory turnover period} = \frac{\text{Inventory}}{\text{Cost of Sales}} \times 365$

→ This indicates how long inventory is held for on average. If this is less rapid than other companies in same industry, it may indicate an inefficiently large holding.

ii.  $\text{Trade receivable turnover period} = \frac{\text{Trade receivable}}{\text{Credit Sales}} \times 365$

→ This measures the average length of time taken for trade receivables to settle their balance.

→ A short period is desirable as it will be better for a company's cashflow if their debtors pay off as soon as possible.

iii.  $\text{Trade Payable Turnover period} = \frac{\text{Payables}}{\text{Credit purchases}} \times 365$

→ This is the time taken by a company to pay for goods after their purchase.

→ The number of days of payable shows how effectively payments of bill is arranged.

## 7. Limitation of ratio analysis :-

1. Diverts attention from figures & statements themselves :-  
→ A large company may have high bargaining power & may enjoy high economies of scale.

→ Ratio do not reflect any information in the notes for example if the company is being sued, the amount is stated in the latter giving an indication of the expected outcome.

2. Comparisons can be affected by different accounting policies or by other external factors :-

→ 2 large companies can calculate depreciation through different method, making their ratios incomparable.

→ A Japanese car selling company will be exposed to ~~monetary~~ movements in the value of Yen than a more than a distributor of British car.

3. Peculiarities of the trade making it difficult to interpret certain ratio :-

→ A property company continuously revalues its property thus increasing its capital employed, while realising a low return. It becomes difficult to compare it with a company whose assets have not been revalued.

4. ~~This~~ The statements could have been deliberately distorted

→ This involves the deliberate abuse of the subjectivity inherent in accounting which tend to bias the figures

in the direction chosen by management.

8. (i) Beta is the measure of the systematic risk associated with a particular stock.

It indicates how volatile a stock's price is when compared to the market as a whole.

Some companies are more exposed to the market than others & hence experience a greater proportion of systematic risk.

→ A value of  $B > 1$  indicates a stock that amplifies ~~satz~~ returns of the whole market - positive or negative.

Eg: Automobile industry (business is elastic in nature)

→ A value less than one is that of a defensive ~~sect~~ security. These provide a more stable return than the overall market experience.

Eg: FMCG's, Pharma, Tech companies (inelastic nature of business)

→  $B = 0$  ~~are~~ generally consist of risk free securities such as government bonds.

→ A negative  $B$  signifies a stock whose performance was counter cyclical, offsetting the overall market experience.

(ii)  $B_{\text{levered}} = 1.1$

$D/E = 1:2$

Corporate tax  $(t) = 30\%$

$$B_{\text{geared}} = B_{\text{ungeared}} \left[ 1 + \frac{D}{E} (1-t) \right]$$

$$1.1 = B_{\text{geared}} \left[ 1 + \frac{1}{2} (1-30\%) \right]$$

$$B_{\text{geared}} = \frac{1.1}{1.35} = 0.8148$$

$$\text{If } D/E = 2:2$$

$$\rightarrow B_{\text{geared}} = 0.8148 [1 + (1-0.3)]$$

$$\text{Ans } B_{\text{geared}} = \underline{\underline{1.385}}$$

9. 1) In general, the market value of investment trust is not correlated to the net present value.

10(i) Sometimes there is a disconnect between the management and the owners (shareholders) of the firm

Managers may not always act in the <sup>with</sup> interest of the shareholders. This is also known as agency problem

$$(ii) \text{ Market price/shr} = \text{£ } 70$$

$$\text{Div/share} = \text{£ } 10$$

$$\text{growth rate} = 8\%$$

$$\text{risk free rate } (R_f) = 6\%$$

$$\text{risk premium } (R_p) = 5\%$$

$$B = 1.8 \text{ [increase by } 80\%]$$

$$R_{eq} = R_f + R_p \times B$$

$$= 6 + (1.8 \times 5)$$

$$= 15\%$$

$$\text{Share price} = \frac{\text{Div/sh}}{k_g - \text{growth rate}}$$

$$= \frac{10}{(0.15 - 0.08)}$$

$$= \underline{\underline{\text{£} 142.857}}$$

→ Stock price increase by £ 73 (approx).

11. i B measures the systematic risk associated with a stock and indicates how volatile a stock's price is as compared to the overall market experience.

ii Consider a company x

$$B_x = \frac{\text{Cov}(x, \text{market})}{\text{Var}_{\text{market}}}$$

$$= \frac{\sigma_{xm}}{\sigma_m^2}$$

$$= \frac{\sigma_x \times \sigma_m \times \rho_{xm}}{\sigma_m^2}$$

$$\boxed{B_x = \rho_{xm} \frac{\sigma_x}{\sigma_m}}$$

where  $\rho_{xm} \rightarrow$  is the corr. coeff. b/w the individual company's stock return & that of the market.

→  $\sigma_m$  &  $\sigma_x$  are standard deviations of the market index & company's stock return resp.

iii. As an active stock market investor, B of 1 is preferred over -1

iv. Government bonds have a beta of 0.

12. (i) D/E = 1:1

$$R_F = 7\%$$

Eq. risk premium ( $R_p$ ) = 5%

$$\text{GMD} = 9\% \quad (\text{gross cost of debt})$$

$$B = 1.5$$

$$t = 25\%$$

$$\begin{aligned} \Rightarrow \text{Cost of eq} &= R_F + R_p \times B \\ &= 7 + (5 \times 1.5) \\ &= 14.5\% \end{aligned}$$

$$\begin{aligned} \Rightarrow \text{Net cost of debt} &= \text{GMD}(1-t) \\ &= 6.75\% \end{aligned}$$

$$\Rightarrow \text{WACC} = \text{Net cost of debt} \left( \frac{\text{MV of debt}}{\text{MV of debt + eq}} \right) + \text{Cost of eq} \left( \frac{\text{MV of eq}}{\text{MV of debt + eq}} \right)$$

$$= 6.75 \left( \frac{1}{2} \right) + 14.5 \left( \frac{1}{2} \right)$$

Ans  $\text{WACC} = \underline{\underline{10.625\%}}$

(ii) If all debt is repaid; we need to calculate B unlevered in order to find Req. return to equity

$$\Rightarrow B_{\text{unlevered}} = B_{\text{levered}} \left( 1 + \frac{D}{E}(1-t) \right)$$

$$1.5 = \text{Bungee} (1 + (1 - 25\%))$$

$$\text{Bungee} = 0.857$$

$$\rightarrow R_{eq} = R_F + (R_A \times \text{Bungee})$$

$$= 7 + (5 \times 0.857)$$

Ans  $R_{eq} = \underline{11.285\%}$

13. (i) NPV @ IRR = 15% :

$$\text{Annuity factor} = \frac{1 - \left(\frac{1}{1.15}\right)^4}{0.15} = 2.855$$

$$\text{NPV} = 40000 \times 2.855 - \text{PV of inflows Outflows at } t_0$$

$$= 114200 - \text{PV of inflows Outflows at } t_0$$

$$\text{PV of inflows} = 114200$$

$$\text{Outflows} = 114200$$

$$\text{PI} = \frac{\text{NPV} + 1}{\text{Outflows}}$$

$$1.064 = \frac{\text{NPV} + 1}{114200}$$

Ans  $\underline{\text{NPV} = 7308.8}$

(ii) Cost of capital : (i)

$$7308.8 = 40000 \left( \frac{1 - (1+i)^{-4}}{i} \right) - 114200$$

$$\Rightarrow 121508.8i = 40000 - 40000(1+i)^{-4}$$

$$i \approx \underline{\underline{12\%}}$$

iii. Cost of project = ₹ 1,14,200

iv. Payback =  $\frac{\text{Outflow at } t_0}{\text{Annual cost saving}}$

$$= \frac{114200}{40000}$$

$$= \underline{\underline{2.86 \text{ yrs}}}$$

14 (i) a) Current ratio : It is the ratio ~~between~~<sup>of</sup> current assets to current liabilities

It is used to assess whether the company will be able to pay off its bills over the next few months.

b) Debtors turnover period is the ratio between Trade receivables & credit sales

It measures the average length of time taken for Trade receivables to settle their bills.

(ii) <sup>finance manager</sup> Xyle Ltd's should track its quick ratio in order to ascertain whether it will be able to meet its short term liabilities, as this ratio looks at short-term liquidity

It focuses on readily realisable cash.

$$\text{Quick ratio} = \frac{\text{Current assets} - \text{Inventories}}{\text{Current liabilities}}$$

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- i. An investor could potentially ~~by~~ buy shares in this company as it offers a dividend yield of 4%.

Even though shares are riskier in nature in terms of the high volatility in returns as compared to a risk free security such as that of a government bond, it also offers a potential high return to the investor for the high level of risk taken.

$$\begin{aligned} \text{Cost of eq.} &= \text{dividend yield} + \text{growth} \\ &= 4\% \quad (\text{assuming growth} = 0) \end{aligned}$$

$$\begin{aligned} \text{Net cost of debt} &= 8\%(1-t) \\ &= 8\% \quad (\text{assuming } t=0) \end{aligned}$$

$$\begin{aligned} \Rightarrow \text{Cost of capital} &= 8\% \left( \frac{1}{2} \right) + 4\% \left( \frac{1}{2} \right) \\ &= \underline{\underline{6\%}} \end{aligned}$$

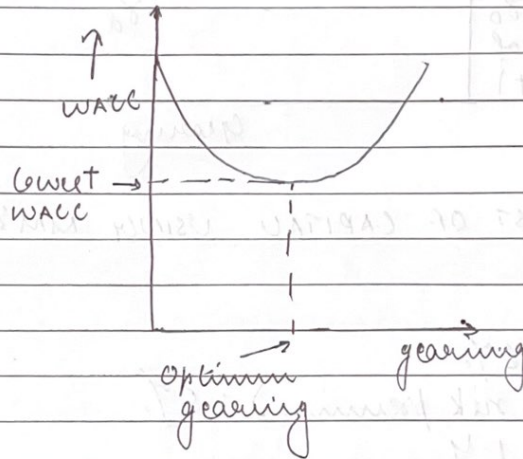
- ii.  $\rightarrow$  In the traditional school, emphasis was on determining the amount of debt a company could safely take on without risking bankruptcy in a severe recession.

$\rightarrow$  Since debt is cheaper than equity, it is often desirable to increase the weightage of the former in the capital structure in order to decrease WACC & consequently increase valuation of the company.

$\rightarrow$  But as and when debt increases ~~or~~ gearing increases, the risk to investors (which includes

both debt and equity financing also increase & so do their required returns.

→ Hence initially when a company borrows, WACC falls due to favourable leverage but beyond a point WACC begins to increase.



iii) Modigliani & Miller's first irrelevance proposition states that the market value of the company is primarily dependent on its investment decisions and not its financing decisions.

It proposed that gearing will be irrelevant to the value of the company, thereby its WACC

→ Its underlying assumptions include:

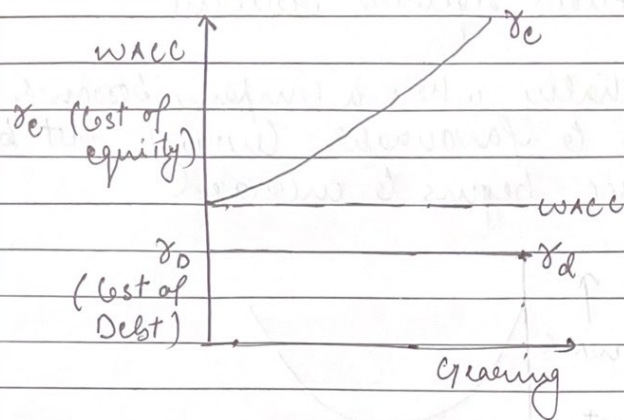
→ no taxes

→ unlimited borrowing available to corporations as well as individual investors at the same interest rate.

→ debt is considered to be risk free.

→ there exists a perfect market.

iv.



COST OF CAPITAL USING MM'S FIRST PROPOSITION

v. a.  $R_F = 6\%$

$R_F$  (eq risk premium) =  $5\%$

$B_{\text{unlevered}} = 1.4$

$$\text{Cost of eq} = R_F + (R_F \times B)$$

$$= 6 + (5 \times 1.4)$$

Ans Cost of equity = 13%

b. Market cap = 100m

Market value of debt = 50%

$\Rightarrow D/E = 1:1$

$t = 30\%$

$$\Rightarrow B_{\text{geared}} = B_{\text{unlevered}} \left( 1 + \frac{D}{E} (1-t) \right)$$

$$= 1.4 \left[ 1 + (1-30\%) \right]$$

Ans  $B_{\text{geared}} = \underline{\underline{2.38}}$

c. Cost of eq =  $R_F + (R_F \times B_{\text{geared}})$

$$= 6 + (5 \times 2.38)$$

Ans Cost of equity = 17.9%