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BF Assignment

1. d) IRR is the most reliable means of choosing between mutually exclusive projects.
2. a) MPS / EPS.
3. d) All of the above.
4. d) 10,00,000 / -

5. i] Cashflow from the project
 $2500 - 1500 = 1000$

Taking tax rate into account.

$$1000 - 400 = 600$$

$$\text{ii] NPV} = 2500(1-20\%) - 1500(1-20\%)$$

$$= 800$$

$$\text{iii] NPV} = 2500(1-20)^1 - 1500(1-20)^2$$

$$= 1040$$

The NPV increases as the outflow of the money is delayed.

6. The efficiency ratios tell that how efficiently are the ^{non-current} assets of the company used

$$\text{Inventory turnover period} = \frac{\text{Inventory}}{\text{COGS}} \times 365$$

This tells us how efficient a business is in terms of sales. Lower the no. of days, the more efficient the business is.

7. Limitation of ratio analysis are as follows:-

- i] It ignores qualitative aspects of the business and just considers accounting aspects.
- ii] Price level changes are ignored.
- iii] Window dressing attempts could deliberately distort ratios.
- iv] Instead of the value of numbers, percentages are taken, thus big house business might look similar to smaller business in ratios, whereas in reality they might not be.

8. i] Beta is derived by the systematic risks a company faces in its running. Beta is the measure of the same risk. Thus, it differs with business as different business have different risks.

$$(ii) \quad \beta_{\text{geared}} = \beta_{\text{ungeared}} \left(1 + \frac{1}{2}(1-0.3) \right)$$

$$1.1 = \beta_{\text{ungeared}} \left(1 + \frac{1}{2}(1-0.3) \right)$$

$$\beta_{\text{ungeared}} = 0.815$$

$$\text{Now, geared } \beta = 0.815 \left(1 + \frac{2}{2}(1-0.3) \right) = \underline{1.385}$$

9 b) In general market value of investment trust is higher than NPV.

10 i) a) Conflict of interest between managers & the owners.

b) CSR activities that do not increase owners wealth but are anyhow carried out by managers.

c) There Owners might be in favour of doing business inappropriately to increase their wealth but the managers may not be in favour.

ii) $CMP = 70$.

$DPS = 10$.

$R_f = 6\%$.

Market Risk Premium = 5% .

Growth = 8% .

Cost of Equity

$$= \frac{10}{70} + 8\% = 22.285\%$$

$R_E = R_f + \text{Market Risk Premium} \times \beta$

$$22.285 = 6 + 5 \times \beta$$

$$\therefore \beta = 3.257$$

New $\beta = \text{old } \beta + 0.8 \beta$

$$= 3.257 + 0.8 \times 3.257$$

$$= 5.8626$$

$$\therefore R_E = 6 + (5 \times 5.8626)$$

$$= 35.313\%$$

$$\text{MDD} \quad CMP = \frac{1000}{27.81426} = \underline{\underline{36.6109}}$$

11. i]. Beta is the measure of systematic risk.

$$ii] \beta = \frac{\text{cov}(i, \text{mkt})}{\text{Var}(\text{mkt})}$$

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

iii] A prudent investor should ideally invest in both the stocks to hedge risk. But, personally I would invest in the stock with $\beta > 1$, as I have a positive outlook towards the stock market in long term.

iv] Non-risk instruments such as treasury bills or Govt. Bonds have Beta 0.

12. i]. WACC = cost of equity $\times$ % of equity
+ cost of debt $\times$ % of debt

$$\begin{aligned} R_e &= R_f + \beta (\text{Market Risk premium}) \\ &= 7\% + 1.5 \times 5\% \\ &= 14.5\% \end{aligned}$$

$$\begin{aligned} \text{Cost of debt} &= \text{cost of debt} \times (1 - \text{tax rate}) \\ &= 9\% \times (1 - 25\%) \\ &= 6.75\% \end{aligned}$$

$$\begin{aligned} \text{WACC} &= 14.5 \times \frac{1}{2} + 6.75 \times \frac{1}{2} \\ &= 10.625\% \end{aligned}$$

$$i) P_{\text{geared}} = B_{\text{ungeared}} \left[1 + \frac{P}{B} (1-t) \right]$$

$$1.5 = B_{\text{ungeared}} \left[1 + \frac{1}{1} (1-0.25) \right]$$

$$B_{\text{ungeared}} = 0.8571$$

New Cost of Equity

$$= 7\% + 0.8571 \times 5\%$$

$$= 11.29\%$$

13. $IRR = 15\%$

$$40,000 \times \frac{15}{9} - n = 0$$

$$n = 40,000 \left[\frac{1 - (1.15)^{\frac{7}{4}}}{0.15} \right]$$

$$n = 114199.1345$$

Taking $n = 114200$

Cost of Project = 114200

$$\text{Cost of capital} = 114200 \times 1.064$$

$$= 3.037725$$

Profitability index = 1.064

$$1.064 = \text{PV of cash inflow} / 114200$$

$$\therefore \text{PV} = 121509$$

$$NPV = 121509 - 114200$$

$$= 7309$$

Cost of Payback period = $\frac{114200}{40,000}$

$$= 2.855$$

$$= \underline{\underline{3 \text{ years}}}$$

- 14 i) a) Current ratio $\rightarrow$ This ratio assess whether the current assets are enough to cover for the current liabilities of the company.

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

- b). Debtors turnover period

It shows the average time the firm take to convert its receivables into cash.

$$\frac{\text{Net credit sales}}{\text{Average receivables}} \times 365 =$$

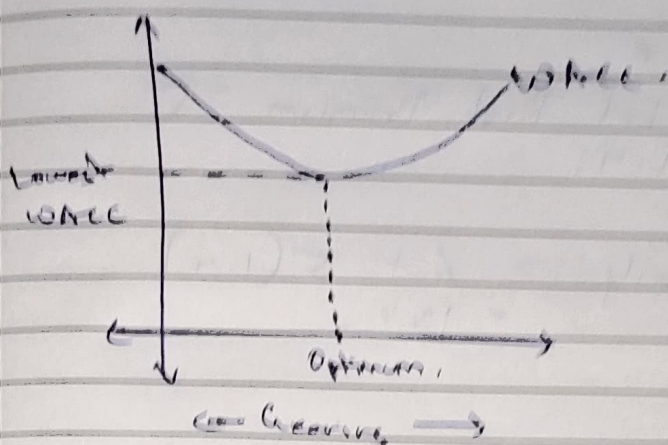
- ii) To track on regular basis if the company is able to meet its short term liabilities, the firm can use Quick ratio. It tells if the firm has enough quick assets (readily convertible to cash) to cover for its current liabilities.

$$\frac{\text{Quick assets}}{\text{Current liabilities}} = \text{Quick Ratio}$$

16. i) The shareholder must bring down the company's leverage:

- To diversify their portfolios.
- Sustainable dividend yield.
- To get more return the firm's leverage is also working with debt to get 4%.

ii) Traditional view.



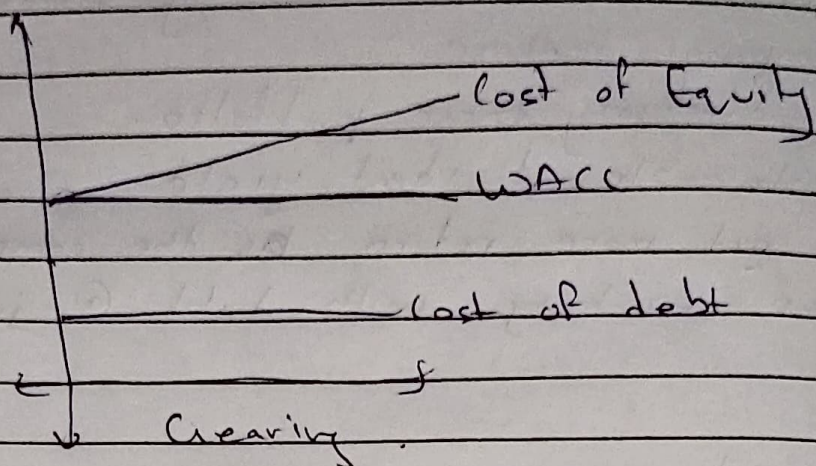
Initially WACC is higher due to increased cost of debt. As gearing increases up to the optimum level WACC decreases. But, as gearing exceeds the optimum level and the company tends to be heavily geared, WACC increases.

iii) First irrelevance proposition -

Market value of the firm is independent of its capital gearing structure.

Underlying assumptions:-

- Debt is of the same cost to everyone.
- No taxes.
- No agency costs.
- No information asymmetry.



- V. a) $R_f = 6\%$
~~cost~~ Market Risk Premium = 5%
 $\beta = 1.4$

$$\text{Cost of equity} = 6 + 5(1.4) = 13\%$$

- b) Tax = 30%
 $D : E = 1 : 1$

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

$$\beta_{\text{geared}} = 1.4 \left[1 + \frac{1}{1} (1 - 0.3) \right]$$

$$\beta_{\text{geared}} = 1.4 (1 + 1 \times 0.7) = 2.38$$

New Cost of Equity

$$= R_f + \text{Geared } \beta \times \text{Market risk p}$$

$$= 6\% + 2.38(5\%) = 17.9\%$$