

# ASSIGNMENT - 1

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

2) A Market price of share / Earning per share

3) D. All of the above.

4) D 10,00,000

5) D. In general the market value of investment has is not correlated to the net present value.

$$\begin{aligned} 5) (i) \text{ Cash flow at date 1} &= (\text{Sales} - \text{costs}) - \text{taxes} \\ &= (2500 - 1500) - 40\% \\ &= 1000 - 40\% \\ &= 600 \end{aligned}$$

$$\begin{aligned} (ii) \quad NPV &= 1500 (1 + 20\%)^{-1} - 1500 (1 + 20\%)^2 \\ &= 208.34 \text{ Rs.} \end{aligned}$$



6) The ratios that could be used to measure business efficiency are as follows:-

→ Inventory turnover period

The inventory turnover period is defined as

$$\text{stock turnover period} = \frac{\text{inventories}}{\text{cost of sales}} \times 365$$

This is an attempt to access how much inventory is held on average.

- An inventory turnover period that is less rapid than other companies in the same industry might indicate an inefficiently large inventory holding.

→ Trade receivables turnover period :-

This is a measure of the average length of time taken for trade receivables to settle their balance:

$$\text{trade receivables turnover period} = \frac{\text{trade receivables}}{\text{Credit sales}} \times 365$$

It is desirable for this period to be as short as possible. It will be better for the company's cash flow if those owing so could damage the company's relationship with customers.



→ Other ratio to assess payables is

$$\text{Payables turnover period} = \frac{\text{Payables}}{\text{credit purchases}} \times 365$$

It can be difficult to calculate this ratio in the real world because companies do not disclose their purchases figure.

7.) Ratio analysis is a very useful technique for the interpretation of financial statements. It does, however, have its limitations. Some of these are outlined below:

- It diverts attention from the figures and statements themselves.
- Comparison can be affected by different accounting policies or by other external factors.
- There could be peculiarities of the trade which make it difficult to interpret certain ratios.
- The Statements could have been deliberately distorted by so called creative accounting.

8) (i) Beta is used as a measure of systematic risk. All the companies are exposed to systematic risks. Since they all are affected by the markets. However, some companies are more exposed than others and therefore the betas of all the companies differ on the basis of their exposure towards the market.

(ii) Given  $\beta_{\text{gear}} = 1.1$   
 debt : Equity = 1/2  
 tax rates = 30%.

$$\beta_{\text{geared}} = \beta_{\text{ungeared}} (1 + D/E (1 - t))$$

$$\Rightarrow 1.1 = \beta (1 + \frac{1}{2} (1 - 30\%))$$

$$\Rightarrow \beta_{\text{ungeared}} = 0.81481$$

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

$$= 0.81481 (1 + 1 (1 - 30\%))$$

$$= \boxed{1.385}$$

10) (ii) (Given) Present value of shares = 70  
 Dividend / share = 10  
 Risk free rate = 6%  
 Growth rate = 8%  
 Market risk premium = 5%  
 $\beta = 0.8$

$$\text{Share price} = \frac{\text{Dividend}}{\text{Cost of equity} - \text{growth rate}}$$

$$= \frac{10}{[6\% + 5\% (0.8)] - 8\%}$$

$$= \frac{10}{0.02}$$

$$= 500$$

(9) A company's major goal would be long term while, some traders would want to focus on short term goals.

- There could be problems between the managers and the other stakeholders regarding communication.
- Problems between managers and board members could happen.

11.(i) Beta can be regarded as a measure of systematic risk associated with a particular stock.

(ii) For a company i,

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

where  $\sigma_m^2 \rightarrow$  is variance of market index  
 $\sigma_{im} \rightarrow$  is the variance for individual stock returns.

(iii) As an active investor, I will invest in a stock with beta 1 as it will provide returns in line with the market.

(iv) A government bond is expected to have a beta of 0 since it should not be affected by systematic risks.



$$(1) \quad WACC = R_e \left( \frac{M_e}{M_e + M_p} \right) + R_p \left( \frac{M_p}{M_e + M_p} \right)$$

$$= \frac{1}{2} [7\% + 5\% (1.5)] + \frac{1}{2} [9\% (1 - 25\%)]$$

$$= 6.10625\%$$

$$(11) \quad 1.5 = \beta_{unlevered} (1 + 1(1 - 25\%))$$

$$\Rightarrow \beta_{unlevered} = 0.857$$

$$\Rightarrow ROE = 7\% + 5\% (0.857)$$

$$= 6.1129\%$$

$\Rightarrow$  Return on equity will be 11.29%.

$$(13) (i) \quad NPV \text{ of given IRR} = C + 40000 \left[ (1.15)^{-1} + (1.15)^{-2} + (1.15)^{-3} + (1.15)^{-4} \right]$$

$$= 0 = C + 40,000 (2.855)$$

$$\therefore C = 114,200$$

$$\text{Profitability Index} = \text{Present value} / C$$

$$\therefore 1.064 = \text{Present value} / 114,200$$

$$\therefore \text{Present value} = 121,508.8$$

$$\bullet \quad NPV = NPV \text{ of inflow} - NPV \text{ of outflow}$$

$$= 121,508.8 - 114,200$$

$$\hookrightarrow = \boxed{7,308.81}$$

(ii)  $COC \rightarrow x$

$$NPV = \text{Initial investment} + 40000 \left[ (1+x)^{-1} + (1+x)^{-2} + (1+x)^{-3} + (1+x)^{-4} \right]$$

$$\therefore 7308.8 = 114200 + 40000 \left[ (1+x)^{-1} + (1+x)^{-2} + (1+x)^{-3} + (1+x)^{-4} \right]$$

$$\therefore 3.03722 = [ \quad " \quad ]$$

$$\therefore x = 12\%$$

(iii) Cost of the project = Rs 114200/-

(iv) Payback period =  $\frac{\text{Initial investment}}{\text{Annual annuity}}$

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

$$= 2.855 \text{ years.}$$

14(i)(a) Current ratio =  $\frac{\text{Current assets}}{\text{Current liabilities}}$

→ This ratio is used to access whether the company will be able to pay its bills over the next few months.

→ It provides a comparison of an estimate of the amount of money due to be received in the short term with an estimate of the amounts of money to be paid.

b) Debtors turnover period.

$$\text{Debtors turnover period} = \frac{\text{trade receivables} \times 365}{\text{credit sales}}$$

→ It is discussed to measure the average length of time taken for trade receivables to settle their balance.

→ A high number would be the result of insufficient collection process.

(ii) The company should analyze the quick ratio to interpret about the company's ability to meet its short term liabilities.

$$\text{Quick ratio} = \frac{\text{Current Assets} - \text{Inventories}}{\text{Current Liabilities}}$$

15 (i) An investor might buy shares in this company because it provides a high dividend yield of 4%. It is true that shares are potentially risky and the return could be highly volatile. However an investor can expect a higher level of return in order to compensate for the risks.

For COC:-  
We Assume that 1) No growth in the stocks mV  
2) No taxes



$$\text{Dividend Yield} = 4\%$$

$$\text{Cost of debt} = 8\%$$

$$\text{Net cost of debt} = \text{Cost of debt} (1 - t)$$

$$= 8\%$$

$$\text{Cost of equity} = \frac{d + g}{1} = 4\%$$

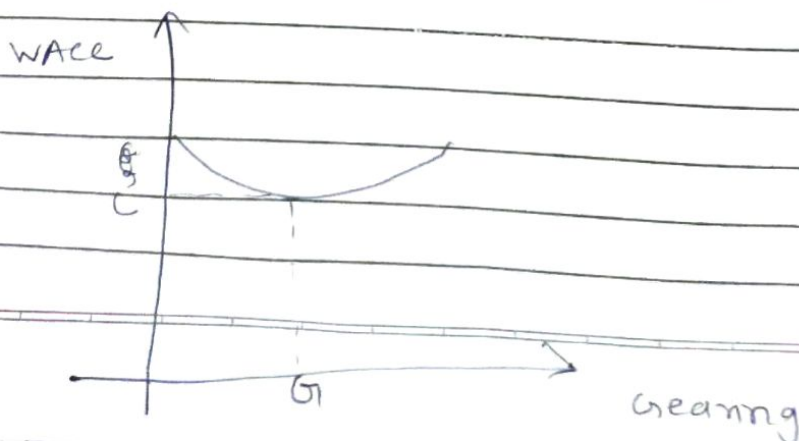
$$\text{WACC} = \frac{(\text{Net cost of debt} + \text{cost of equity})}{2}$$

$$= 6\%$$

Therefore, the minimum cost of capital is 6%.

## (ii) Traditional view

- In the traditional school view, the amount of debt a company could settle without risking bankruptcy is preferred.
- Debt is cheaper than equity finance.
- However, increasing debt finance increases the risks for shareholders, so they demand greater return.
- Hence the downward effect on WACC due to gearing could be compensated for higher returns.



(iii) The underlying ~~proposition~~ assumptions for Modigliani and Miller's first irrelevance proposition were:-

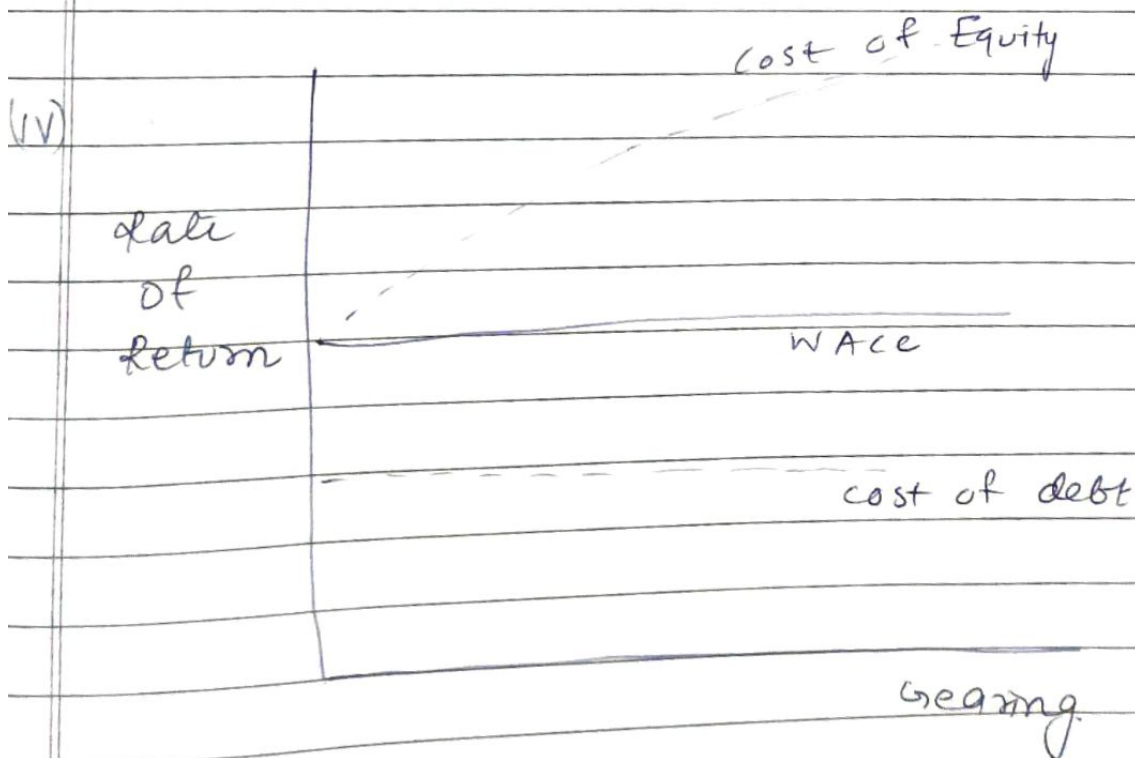
There are no taxes.

Debt is risk free.

There are no agency costs.

There ~~is~~ is no asymmetric information

→ Their, proposition argued that under certain assumptions, gearing is ineffective pertaining the company's value. It's actual value lies in its ability to produce profits and not in the way it is financed.



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(v) a. Cost of equity = Risk free rate + [ungeared Beta + equity risk premium]

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

$$= 13\%$$

b. Geared beta = ungeared beta  $\times \left[ 1 + (\text{debt:equity}) \times (1 - \text{tax rate}) \right]$

$$= 1.4 \times [1 + (1/1) \times (1 - 30\%)]$$

$$= 2.38$$

c. Cost of equity = risk free rate + [Beta (equity risk premium)]

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

$$= 17.9\%$$