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Subject - Business Finance - 2

Category - Assignment Questions - Unit 3 & 4

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. A. 12,00,000

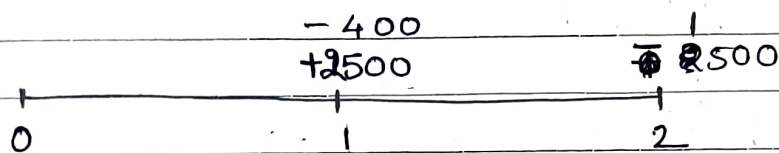
$$\begin{array}{ll} 5. \text{ Sales} = 2500 & \text{Tax} = 40\% \\ \text{Costs} = 1500 & i = 20\% \end{array}$$

$$\begin{aligned} \text{i. Cash flow at data 1} &= \text{Sales} - \text{costs} \\ &= 2500 - 1500 \\ &= 1000 \end{aligned}$$

$$\begin{aligned} \text{ii. NPV} &= ? \\ \text{Cash flow after tax} &= 1000 - (40\% \text{ of } 1000) \\ &= 600 \end{aligned}$$

$$\text{NPV} = \frac{600}{(1+i)} = \frac{600}{1.2} = 500$$

iii.
$$NPV = \frac{600}{(1+i)^2} = \frac{600}{1.2^2} = 416.667$$



$$NPV = \frac{-1500}{1.2^2} + \frac{2100}{1.2} = 708.333$$

∴ The NPV of the project will change by 208.333.

6. To measure any business efficiency, ratios to be analysed are:

1. (P/E) : Price to earning ratio : The market price of the share encapsulates everything that the market feels about the company.

It gives us an opinion of market about company's business efficiency. If the company has a high P.E, it is considered to be overvalued, attractive, rapidly growing and efficient.

$$P.E = \frac{\text{Market price of an ordinary share}}{\text{Earnings per share}}$$

2. Inventory turnover period :

This ratio shows how much inventory the company has in relation to the scale of company's operations. The ratio shows that

business efficiency related to holding of business. If it is rapid than the other companies in the same industry might indicate an inefficiently large inventory holding.

It is denoted as :
$$\frac{\text{Inventories}}{\text{Cost of sales}} \times 365$$

3. Trade receivables turnover period:

It is desirable for for this ratio to be as short as possible. It will be better for if the company receives cashflows receivable as early as possible.

It is denoted as :
$$\frac{\text{Trade receivable}}{\text{Credit sales}} \times 365$$

7. Limitation of ratio analysis :

i. 1. It diverts attention from the figures & statements themselves.

→ It is important to look at information in the balance sheets, cashflow statements and notes of the company. All information cannot be disclosed in the ratios.

→ If someone is suing the company for damages, the annual statements of the company shows the claim amount.

2. Comparisons can be affected by different accounting practi policies or by other

external factors :

- If two business are affected to different extents by currency movements then the ratios of the company cannot be comparable.
- If two companies use different methods of depreciation, they are not comparable.

3. There could be peculiarities of the trade which make it difficult to interpret certain ratios.

4. The statements could have been deliberately distorted by so called creative accounting: By selecting
- accounting policies / make assumptions which tend to bias the figures in the direction chosen by management.

8.

i. Beta stock trade at different betas in the stock market because -

- Beta is a measure of systematic risk associated with a particular stock and systematic risk is different for different companies.
- It systematic risk depends on cycle of business activity. Different business sectors may be hit earlier / later in the business cycle & so ~~secto~~ beta may vary.

Q.

ii.

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

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

$$\therefore \beta_{\text{ungeared}} = \frac{1.1}{1 + 0.7/2} = 0.8148$$

$$\beta_{\text{geared}} = \left[1 + \frac{2}{2} (1 - 0.3) \right] \times 0.8148$$

$$= 1.38516$$

$$\approx 1.39$$

9. A) In general the market value of investment trust is lower than the net present value

10. Current Market Price = 70 Growth = 8%.

$$r_f = 6\% \quad r_r = 5\%$$

$$\text{Dividend} = 10$$

$$\text{Growth} = \text{Retention Rate} \times \text{ROE}$$

$$\text{ROE} = \frac{\text{Growth}}{\text{Retention Rate}} = \frac{\text{Growth}}{1 - \text{Dividend Yield}}$$

$$\text{Dividend Yield} = \left(\text{Dividend} / \text{Current M.P.} \right) \times 100$$

$$\begin{aligned}\text{Dividend Yield} &= (10/70) \times 100 \\ &= \frac{100}{7} \\ &= 14.2857\%\end{aligned}$$

$$\begin{aligned}1 - \text{Dividend Yield} &= 1 - 14.2857\% \\ &= 0.857142\end{aligned}$$

$$\therefore \text{ROE} = \frac{0.08}{0.857142} = 0.09333$$

$$\begin{aligned}\text{ROE} &= r_f + (r_m \times \beta) \\ 0.09333 &= 6\% + (5\% \times \beta)\end{aligned}$$

$$\beta = \frac{9.3\% - 6\%}{5\%} = 0.666\%$$

Systematic risk is increased by 80%.

$$\begin{aligned}\therefore \beta_{\text{new}} &= 0.666\% + 80\% \times 0.666\% \\ &= 0.666\% + 0.5333\% \\ &= 1.19932\%\end{aligned}$$

$$\begin{aligned}\text{ROE}_{\text{new}} &= 6\% + (5\% \times \beta_{\text{new}}) \\ &= 6\% + (5\% \times 1.19932) \\ &= 11.99664\%\end{aligned}$$

$$\begin{aligned}\text{Retention} &= \text{ROE}_{\text{growth}} = 8\% \\ \text{ROE} &= 11.99664\% \\ &= 0.6669\end{aligned}$$

$$\text{Retention} = 1 - \text{Dividend Yield}$$

$$0.6669\% = 1 - \text{Dividend Yield}$$

$$\text{Dividend Yield} = 0.3331\%$$

$$\text{Dividend} \times 100 = 0.3331\%$$

CMP

$$\frac{1000}{\text{CMP}} = 0.3331\%$$

CMP

$$\text{CMP} = 30.021$$

Ans: Effective share price is
Rs 30.021

11. Beta of a stock:

- i) Beta is the measure of the volatility i.e. systematic risk of a security or portfolio compared to the market as a whole. Beta is used in the capital asset pricing model (CAPM) to describes the relationship between systematic ^{risks} and expected return for assets.

A value of beta in excess of 1 indicates a stock that has historically amplified the return of the whole market. A beta close to zero would indicate that the stock has historically provided a more stable return.

It is denoted by the formula:

$$\beta_i = \rho_{im} \sigma_i / \sigma_m$$

ii) Beta can be determined by the formula,

$$\beta_i = \rho_{im} \cdot \frac{\sigma_i}{\sigma_m}$$

Here β shows beta of the financial instrument, ρ_{im} is correlation coefficient between the returns of stocks i and m . σ_i and σ_m denote standard deviations of stock returns of individual stocks and market as a whole respectively.

iii) As an active stock market, I would invest in a stock with beta of 1

iv) Government bonds and securities is likely to have a beta of 0.

12. Debt : Equity = 1 : 1

$$r_f = 7\%$$

equity risk premium = 5%

Gross cost of debt = 9%

$$\beta_{\text{geared}} = 1.5$$

tax = 25%

*) cost of equity = Risk free rate (r_f) + Equity $\times$ β_{geared} risk premium

$$= 7\% + 5\% \times 1.5$$

$$= 14.5\%$$

i) Weighted Average Cost of Capital:

$$= \frac{(\text{Cost of equity}) \times \text{Equity capital} + \text{Net cost of debt} \times \text{debt capital}}{\text{Total capital}}$$

$$= \frac{\text{cost of equity} \times \left(\frac{E}{D+E}\right) + \text{Gross cost of debt} \times (1-t) \times \frac{D}{D+E}}{D+E}$$

$$= \frac{14.5\% \times \frac{1}{2} + 9\% (1-25\%) \times \frac{1}{2}}{2}$$

$$= \frac{7.25\% + 3.375\%}{2}$$

$$= 5.3125\% \times 2$$

$$= 0.10625$$

ii) Debt = 0

$$WACC = \frac{\text{cost of equity} \times \text{equity capital}}{\text{Total capital}}$$

$$0.10625 = 14.5\% \times \frac{\text{Equity capital}}{\text{Equity capital}}$$

$$\text{Equity capital} = 0.7327$$

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

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

$$1.5 = \left[1 + \frac{1}{1} (1 - 25\%) \right] \times \beta_{\text{ungeared}}$$

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

required return on equity

= cost of equity as D:E is 1:1

$$= R_f + (\text{equity risk premium}) \times \beta_{\text{ungeared}}$$

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

$$= 0.1129$$

14)

i)

a) $\text{Current ratio} = \frac{\text{current assets}}{\text{current liabilities}}$

This ratio is used to assess whether the ~~comparise~~ 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 amount of money to ~~pe~~ be paid.

b) $\text{Debtors Turnover period ratio} = \frac{\text{Net credit Sales}}{\text{Avg Account Receivable}}$

This ratio is used to ~~qualifi~~ quantify how well companies are managing the credit that they extend to their customers by evaluating how long it takes to collect the outstanding debt throughout the accounting period.

ii) The Manager should use quick ratio

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

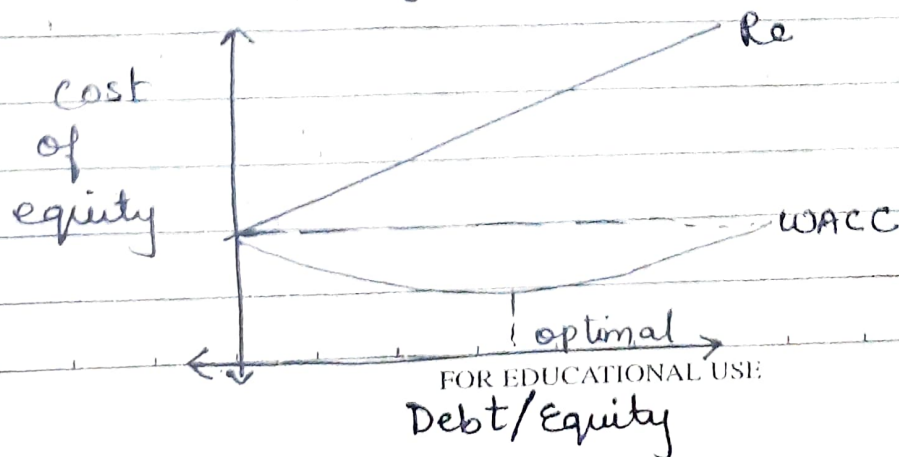
15)

- i. Debt : equity = 1:1
 gross redemption yield = 8%
 Dividend yield = 4%.

An investor might buy shares in this company for receiving dividends and a return that is more than inflation.

$$\text{Cost of capital} = \frac{\left(\text{Cost of equity} \right) \times \left(\text{Equity} \right) + \left(\text{Net cost of debt} \right) \times \left(\text{debt} \right)}{\text{Total capital}}$$

- ii. As gearing increases, there is increase in risk involved in returns. As we know return on equity is function of growth risk & time. As risk factor increases due to increase in fixed liability costs i.e. interest, risk of default increases if the revenue for a quarter is low. So cost of equity increases.



iii. The Miller and Modigliani's Irrelevance Proposition The Theory is theory of corporate capital structure that posits financial leverage does not affect the value of company if income tax & distress costs are not present.

→ Assumptions

→ No Taxes

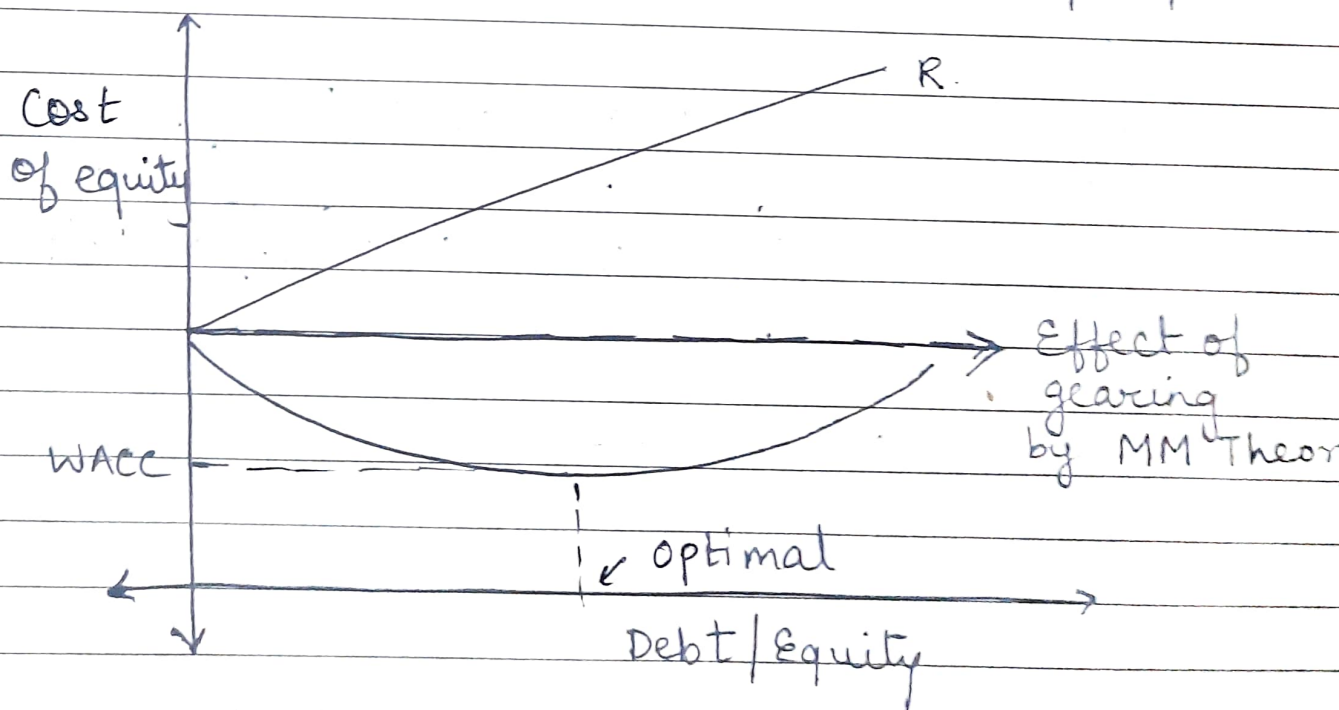
→ Transaction cost for buying & selling securities as well as bankruptcy is nil

→ There is symmetry of information

→ Cost of borrowing is same for investors & ~~best~~ company

→ No corporate dividend tax

iv. Effect of gearing on the cost of capital using Modigliani & Miller's first proposition



v.

a. $r_f = 6\%$
equity premium = 5%
 $\beta_{\text{ungeared}} = 1.4$

$$\begin{aligned}\text{Cost of equity} &= r_f + (\text{equity premium}) \times \beta_{\text{ungeared}} \\ &= 6\% + (5\% \times 1.4) \\ &= 0.13\end{aligned}$$

b. $M_{\text{cap}} = 100 \text{ m}$
debt = 40%
 $M.V = 50\%$
tax = 30%

$\beta_{\text{geared}} = ?$

$$\begin{aligned}\beta_{\text{geared}} &= \left[1 + \frac{D}{E} (1 - t) \right] \times \beta_{\text{ungeared}} \\ &= \left[1 + \frac{0.4}{0.6} (1 - 30\%) \right] \times 1.4 \\ &= 2.0533\end{aligned}$$

$$c. \text{ cost of equity} = rf + (\text{equity premium}) \times \beta_{\text{unlevered}}$$

$$= 6\% + (5\% \times 2.0533)$$

$$= 0.16266$$