

Business Finance Practice Questions Assignment

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

Q.2 A. Market Price of Share / Earnings per Share

Q.3 D. All of Above

Q.4 D. 10,00,000

Q.5 Sales $\rightarrow$ 2500 (+ve CF) Costs $\rightarrow$ 1500 (-ve CF)

i.) Cashflow at date 1: +2500 - 1500 = +ve 1000

ii.) NPV = Net Cashflow $\times$ Discounting Factor

$$= 1000 \times \left(\frac{1}{1.20} \right)^1 = \frac{10000}{1.2} = 833.33 = \text{NPV}$$

iii.)

0	1	2
	+2500	-1500

$$\text{NPV}_2 = \frac{2500}{(1.20)^1} + \frac{(-1500)}{(1.20)^2} = 2083 - 1041.667 = 1041.667$$

$$\text{NPV}_2 = 1041.667$$

Compared to previous question NPV increases.

Q.6 To measure business efficiency, one can use:

i.) Inventory Turnover Ratio:

Number of times a company has sold & replenished its goods/inventory over specific period of time.

$\rightarrow$ Ratio of Market Sales / Average Cost of Inventory

- ii. Trade Receivable Turnover Ratio: No. of times a company gets the sale amount from its customers. How often is company able to collect its receivables from customers. Lower the value, it means, it gets its payments from customers quickly.
- iii.) Trade Payable Turnover Period: Measures number of times in accounting year, a business pays off its creditors suppliers for purchase of goods on credit. If TP Ratio is high, it means either it takes a lot of time of make payment or enjoys the benefit of long time payment delay.

Q.9 Limitations of Ratio Analysis:

- i.) It doesnot measure human element of a firm.
- ii.) Can be used for comparison with other firms of same size and type.
- iii.) Difficult to share with other businesses as they may not be willing to share info.
- iv.) Doesnot account for external factors eg. recession
- v.) Information historic.

Q8. i.) Beta is the unit of measure of systematic risk. Beta measures the volatility/risk in the ~~so~~ stocks compared to overall stock market. It shows how the companies stock price changes with changes in various macro-micro economic factors. If Beta is high, it means the business is risky as compared to one with low Beta.

In Stock Market, all companies provide different services & products. The demand, value of each service/product can change based on Economic factors, Company practices, and other regulations. Even change in demand/value of company and its products varies on different factors. Hence, all companies have different Beta.

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

$$\rightarrow 1.1 = \beta_{\text{ungeared}} \cdot \left\{ 1 + \frac{1}{2} (1 - 30\%) \right\} = \beta_{\text{ungeared}} \times 1.35$$

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

$$\text{When } D:E = 2:2 = 1:1$$

$$\begin{aligned} \beta_{\text{geared}} &= \beta_{\text{ungeared}} \cdot \left\{ 1 + \frac{1}{2} (1 - 30\%) \right\} \\ &= (0.81481) \times (1.70) = 1.385185 = \beta_{\text{geared}} \end{aligned}$$

Q9. D. In general, the market value of investment trust is not correlated to net present value.

Q.10 Conflicts of Interests :

→ Managers have lot of information which they might use to benefit them, but this might be against their practice interest of shareholders, so causing conflict.

Shareholders want more profit, to increase value of company & MPS

Whereas, lenders prefer timely interest payments & debt security

Shareholders may don't like to take huge risks and want normal return.

ii) $MPS \rightarrow 70$ $DPS \rightarrow 10$ $Growth \rightarrow 8\%$
 $R_F = 6\%$ $MRP \rightarrow 5\%$

a.) When Beta = 1

$$R_E = R_F + MRP \times \beta = 6\% + (5\% \times 1) = 11\%$$

Cost of Equity = Exp. DY + Growth

$$R_E = \frac{10}{70} + 8\% = 22.2857\% \rightarrow R_E$$

$$R_E = 22.2857 = 6\% + 5\% \times \beta$$
$$\therefore \beta = \frac{16.2857}{5} \quad \boxed{\beta = 3.25714}$$

→ New Beta: Old + 80% of Old:

$$\text{New Beta} = 5.862852$$

$$\text{New } R_E = 6\% + (5\% \times 5.862852) = 35.31426\%$$

$$\therefore R_E = 35.31426 = \left(\frac{10 \times 100}{MPS} \right) + 8\%$$

$$\therefore \frac{10 \times 100}{MPS} = 27.81426$$

$$\therefore MPS = \frac{1000}{27.81426} = 36.6109$$

$$\therefore \boxed{\text{New MPS} \rightarrow 36.6109}$$

Q.11

- i.) Beta of a stock is the unit of measure of Systematic Risk. It shows the volatility of a stock in relation to overall stock market. Every Company has different Beta, as each company faces different kind & magnitude of financial risk.

$$\rightarrow \text{Beta of TCS} = \frac{\text{Cov}[\text{TCS Market}]}{\text{Var Mkt}} = \frac{\sigma_{\text{TCS}}}{\sigma_{\text{MKT}}} \times \text{Corr}_{\text{TCS Mkt}}$$

- ii.) Beta can be determined by dividing deviation of TCS/Company stock prices by deviation of market prices multiplied by correlation between the company & market prices.

- iii.) We should invest in company with B of 1. Any company with Beta as 1, will give returns equal to that of market (NIFTY & SENSEX). With Beta = -1, it means, company earns/grows when whole market is down.

- iv.) Government Bond or Treasury Bond, issued by government of any country are considered risk free with Beta of 0.

Q.12 $D:E = 1:1$ $R_F = 6\%$ $R_F = 7\%$ $E(M_R) - R_F = 5\%$
 Cost of Debt = 9% $\text{Beta} = 1.5$ $\text{Tax} = 25\%$

i.) $\text{WACC} = \text{Net Cost of Debt} \times \frac{\text{Debt}}{\text{Debt} + \text{Eq}} + \text{Net Cost of Equity} \times \frac{\text{Equity}}{\text{Debt} + \text{Equity}}$

A. Net Cost of Debt
 $= \text{Cost of Debt} \times (1 - \text{tax}) \rightarrow 9\% \times (1 - 25\%) = 6.75\%$ — (1)

B. Net Cost of Equity
 $R_E = R_F + \text{ERP} \times \text{Beta} = 7\% + (5\% \times 1.5) = 14.50\%$ — (2)

C. Weight of Debt = $\frac{1}{1+1} = \frac{1}{2}$

D. Weight of Equity = $\frac{1}{1+1} = \frac{1}{2}$

$$WACC = \left(6.75\% \times \frac{1}{2} \right) + \left(14.50\% \times \frac{1}{2} \right) = 3.375 + 7.25$$

* $\therefore WACC = 10.625\%$

ii When debt is repaid, there is only Equity.

$$WACC = NCD \times \frac{0}{1+0} + R_E \times \frac{1}{1+0} = R_E$$

$$\therefore R_E = R_F + ERP \times \beta$$

As there is no debt, we use ungeared beta

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

$$\rightarrow 1.5 = \beta_{\text{ungeared}} \times \left\{ 1 + \frac{1}{1} (1 - 25\%) \right\} = \beta_{\text{ungeared}} \times 1.75$$

$$\therefore \underline{\beta_{\text{ungeared}} = 0.85714}$$

$$\therefore R_E = R_F + ERP \times \beta_{\text{ungeared}} = 7\% + (5\% \times 0.85714)$$

$$R_E = 11.2857\% = WACC$$

Q14 a.) Current Ratio: It is the ratio of Current Assets to Current Liabilities. It is used to check whether there are sufficient assets available with the business to pay off all the creditors, if all come to ask for money, immediately together. If CR is very high, then too much stock tied up or too much credit sales, but cash not generated.

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

b.) Debtors Turnover Ratio: It measures the efficiency with which company is able to collect on its receivables from its creditors. It measures how many times a company's receivables are converted into cash.

$$DTR = \frac{\text{Net Credit Sales}}{\text{Average Receivable Amounts}}$$

ii.) To track on daily basis, manager can use Quick Ratio or Super Quick Ratio. It is a ratio of readily convertible current assets to current liabilities. It is used to check whether company has enough cash, bank balance, stocks to repay any current liability.

$$\text{Super Quick Ratio} \rightarrow \frac{\text{Cash, Bank, Stocks}}{\text{Current Liabilities}}$$

13.)

X	+40	+40	+40	+40
+				
0	1	2	3	4

→ As we using IRR, $PV \text{ of Inflow} = PV \text{ of Outflow}$.

$$PV \text{ of Inflow} = 40000 \times AF @ 15\% \rightarrow 40,000 \times \left\{ 1 - \left(\frac{1}{1.15} \right)^4 \right\}$$

$$PV \text{ of inflow} = ₹ 1,14,200 = PV \text{ of Outflow}$$

$$\text{Outflow} = \text{Initial Investment} = \text{Cost of Project} = ₹ 1,14,200$$

0.15

$$ii) PI = \frac{PV \text{ of Inflow}}{\text{Cost of Project}} = 1.064 = \frac{PV \text{ of In}}{114200} \cdot PV \text{ of Inflow}$$

$$= 121508.8$$

$$NPV = PV \text{ of Inflow} - PV \text{ of Outflow} = 121508.8 - 114200 = ₹ 7308.8$$

$$\text{iii Cost of Capital} \rightarrow \frac{121508.8}{114200} = 3.037725$$

By referring Act. Table: Cost of Capital = 12%.

2V.) $\rightarrow$

-114200	+40	+40	+40	+40
0	1	2	3	4

↓
120000

$\rightarrow$ 120000 recovered in 3 years.

114200 recovered in x yrs.

$$x = \frac{114200 \times 3}{120000} = 2.85 \text{ yrs.}$$

Q.15 i.) $D:E = 1:1$

Div Yield = 4%

GRY = 8%

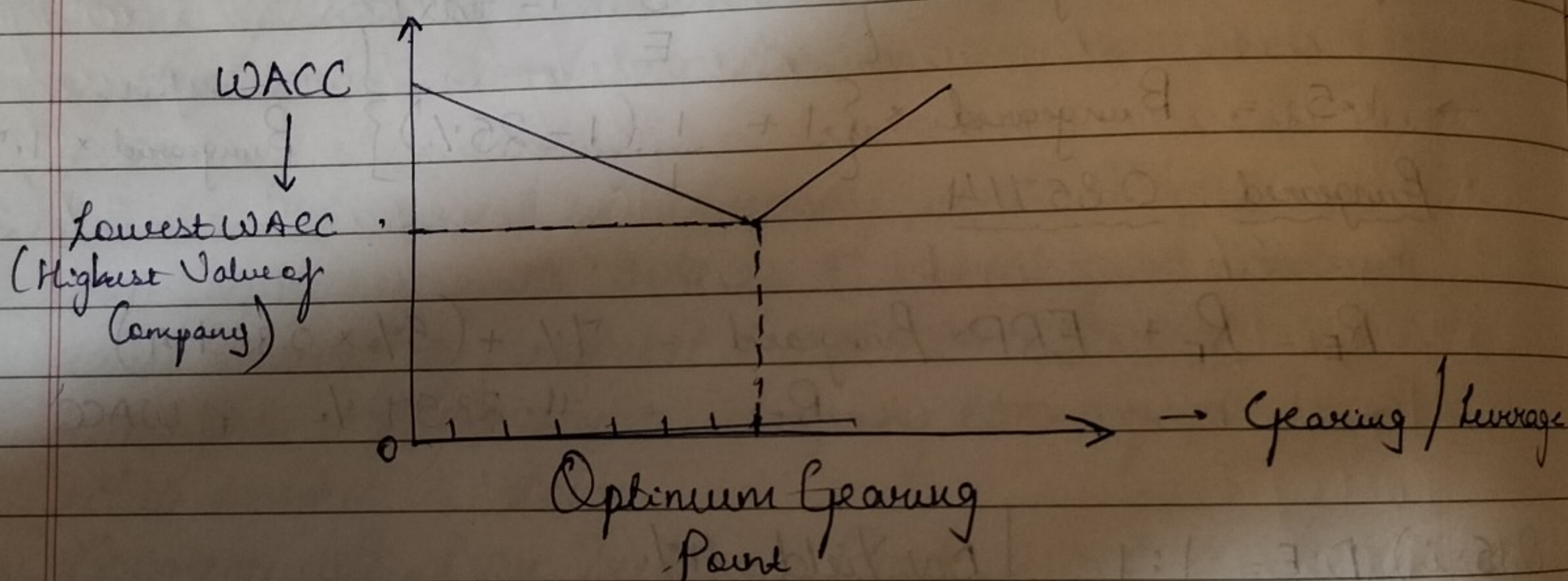
→ Investors should buy share as it has a manageable D:E ratio. It also has a good dividend yield. ie. for Market price of ₹100, it gives ₹4 as dividend.

$$WACC = NCD \times \frac{D}{D+E} + R_E \times \frac{E}{D+E} \rightarrow \left(8\% \times \frac{1}{2} \right) + \left(4\% \times \frac{1}{2} \right) = 6\%$$

Cost of Capital = 6%

* Assumption: i) No Tax involved
ii) Growth % not considered.

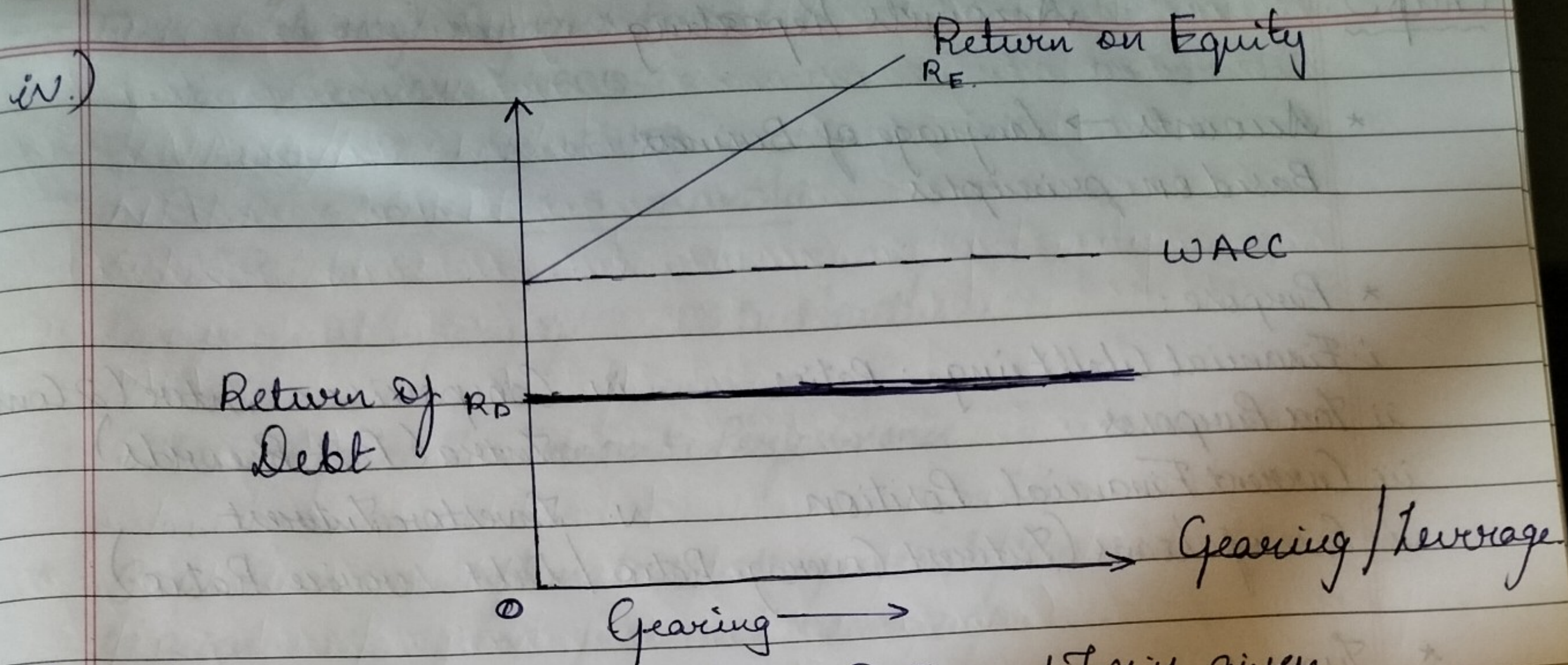
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- ii. Generally Cost of Debt is cheaper than Cost of Equity
- CFO would want to increase weight of debt as this will reduce the WACC, hence valuation will increase.
 - But, as we increase the debt in company, existing shareholders will feel more risky and thus their return need will also increase - i.e. Cost of Equity increases.
 - Hence, initially, with increase in debt, WACC will decrease, till a specific leverage only. With any increase in leverage then, the WACC starts increasing again.



iii.) M&M's first irrelevance proposition states that, the valuation of company is independent of its capital structure, and it's based on the investing decision and not raising decisions.

→ Assumptions:

- Perfect Information
- Capital Structure Irrelevant
- No Tax on debt
- No Agency Cost
- Loan available to company & investors, both at same rate of interest.



v.) A] As no information about D:E and Tax is given, we assume $\beta_{\text{ungeared}} = \beta_{\text{geared}} = 1.4$

$$R_E = R_F + ERP \times \beta = 6\% + (5\% \times 1.4) = \boxed{13\% = R_E}$$

B.] Total Market $\rightarrow 100 \text{ Mn}$ $\rightarrow$ Debt MV = 50%.
 tax = 30% $\rightarrow$ Eq. MV = 50%.

$\rightarrow D:E = 1:1$

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

$$= \beta_{\text{geared}} = \frac{(1.4)}{(13\%)} \times [1 + 1(0.7)]$$

$$= \frac{1.4}{13\%} \times (1.7) = 1.4 \times 1.7 = \boxed{2.38 \rightarrow \beta_{\text{geared}}}$$

$\rightarrow R_E = R_F + MRP \times \beta_{\text{geared}}$

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

$$\boxed{R_E = 17.9\%}$$