

Assignment BF-2

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youva

1. B

2. A

3. D

4. C

5. Sales : 2500

Tax rate : 40%.

Costs : 1500

r : 20%.

i. $2500 - 1500$

1000 ← PBT

$$\text{PAT} = 1000 - (0.4 \times 1000) \\ = 600$$

ii. $\text{NPV} = 2500 - 1500$

= 1000

iii. $2500 - 1000v$

1666.67

6.

The ratios to be used will be efficiency ratios such as

- Inventory turnover period
- Trade receivables turnover period

These give an insight into the effectiveness of the company's management of components of working capital.

7.

- It diverts attention from figures & statements themselves
- Comparisons 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.
- Statements could have been deliberately distorted by 'creative accounting'.

8.

i. Betas indicate the volatility of a stock's price in comparison to the overall stock market.

ii $\beta_a = 1.1$ $\frac{D}{E} = \frac{1}{2}$ $t = 30\%$

$\beta_e = ?$ $\frac{D}{E} = \frac{2}{2} = 1$

$$\beta_e = \beta_{uc} \left(1 + \frac{D}{E} (1-t) \right)$$

$$1.1 = \beta_{uc} \left(1 + \frac{1}{2} (1-30\%) \right)$$

$$= \beta_{uc} \left(1 + \frac{1}{2} (70\%) \right)$$

$$= \beta_{uc} (1.35)$$

$$\beta_{uc} = 0.8148$$

$$\beta_e = 0.8148 \left(1 + \frac{1}{1} (1-30\%) \right)$$

$$= 0.8148 (1 + 70\%)$$

$$= 1.3852$$

9. D

10.

1. The first part of the question is about the definition of a function. A function is a relation between a set of inputs (the domain) and a set of possible outputs (the codomain) such that each input is related to exactly one output.

2. The second part of the question is about the definition of a linear function. A linear function is a function of the form $f(x) = ax + b$, where a and b are constants.

3. The third part of the question is about the definition of a quadratic function. A quadratic function is a function of the form $f(x) = ax^2 + bx + c$, where a , b , and c are constants.

4. The fourth part of the question is about the definition of a cubic function. A cubic function is a function of the form $f(x) = ax^3 + bx^2 + cx + d$, where a , b , c , and d are constants.

5. The fifth part of the question is about the definition of a quartic function. A quartic function is a function of the form $f(x) = ax^4 + bx^3 + cx^2 + dx + e$, where a , b , c , d , and e are constants.

6. The sixth part of the question is about the definition of a quintic function. A quintic function is a function of the form $f(x) = ax^5 + bx^4 + cx^3 + dx^2 + ex + f$, where a , b , c , d , e , and f are constants.

7. The seventh part of the question is about the definition of a sextic function. A sextic function is a function of the form $f(x) = ax^6 + bx^5 + cx^4 + dx^3 + ex^2 + fx + g$, where a , b , c , d , e , f , and g are constants.

ii Beta is a measure of a stock's volatility in relation to overall market.

$$\beta = \frac{\text{cov}(r_i, r_m)}{V(r_m)}$$

where r_i = expected return on asset i

r_m = avg. expected rate of return on market.

iii Beta can be determined by dividing the product of covariance of the security's returns & the market's returns by variance of market's returns over a specified period.

iii As a risk averse investor who believes that in the long run, the market is only bound to go up, I will invest in a stock ~~with~~ with a beta of 1

iv Cash

$$12 \quad \frac{D}{E} = \frac{1}{1}$$

$$r_f = 7\% \\ \beta = 1.5$$

$$ERP = 5\% \\ t = 25\%$$

$$D_t = 9\%$$

$$i \quad WACC = r_e \times \frac{E}{D+E} + r_d \times \frac{D}{D+E}$$

$$r_e \text{ (CAPM)}$$

$$= R_f + ERP \times \beta$$

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

$$= 14.5\%$$

$$r_d = 9\% \times (1 - 25\%) \\ = 6.75\%$$

$$WACC = 14.5\% \times \frac{1}{2} + 6.75\% \times \frac{1}{2}$$

$$= 10.625\%$$

$$ii \quad \beta_e = \beta_{uc} \left(1 + \frac{D}{E} (1-t) \right)$$

$$1.5 = \beta_{uc} \left(1 + \frac{1}{1} (1 - 25\%) \right)$$

$$\beta_{uc} = 0.857$$

$$R_e = 7\% + 5\% \times 0.857$$

$$= 11.2857\%$$

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ii

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

Used to assess whether company will be able to pay its bills over the next few months.

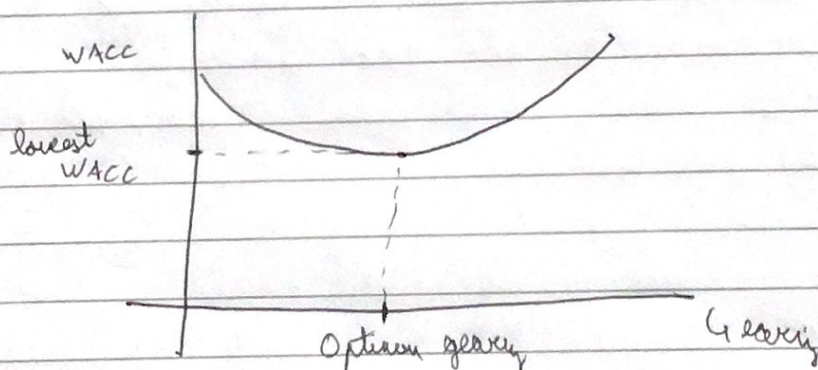
$$\text{Debtors Turnover} = \frac{\text{Trade receivables}}{\text{Period}} \times 365$$

A measure of the average length of time taken for debtors to settle their balance

$$\text{Inventory/Stock Turnover period} = \frac{\text{Inventories}}{\text{Cost of Sales}} \times 365$$

15 $\frac{P}{E} = \frac{1}{1}$ $\text{Tax } D_{\text{GROSS}} = 8\%$ $\text{Div. Yield} = 4\%$

- ii) Normally ~~the~~ Net Cost of Debt is cheaper than cost of equity, the CFO would want to increase weightage of debt in capital structure to decrease WACC. But never forget that as debt increases risk to investors also increases & their required returns increase too. Hence, initially when company borrows, WACC will decrease but beyond a point, WACC begins to increase.

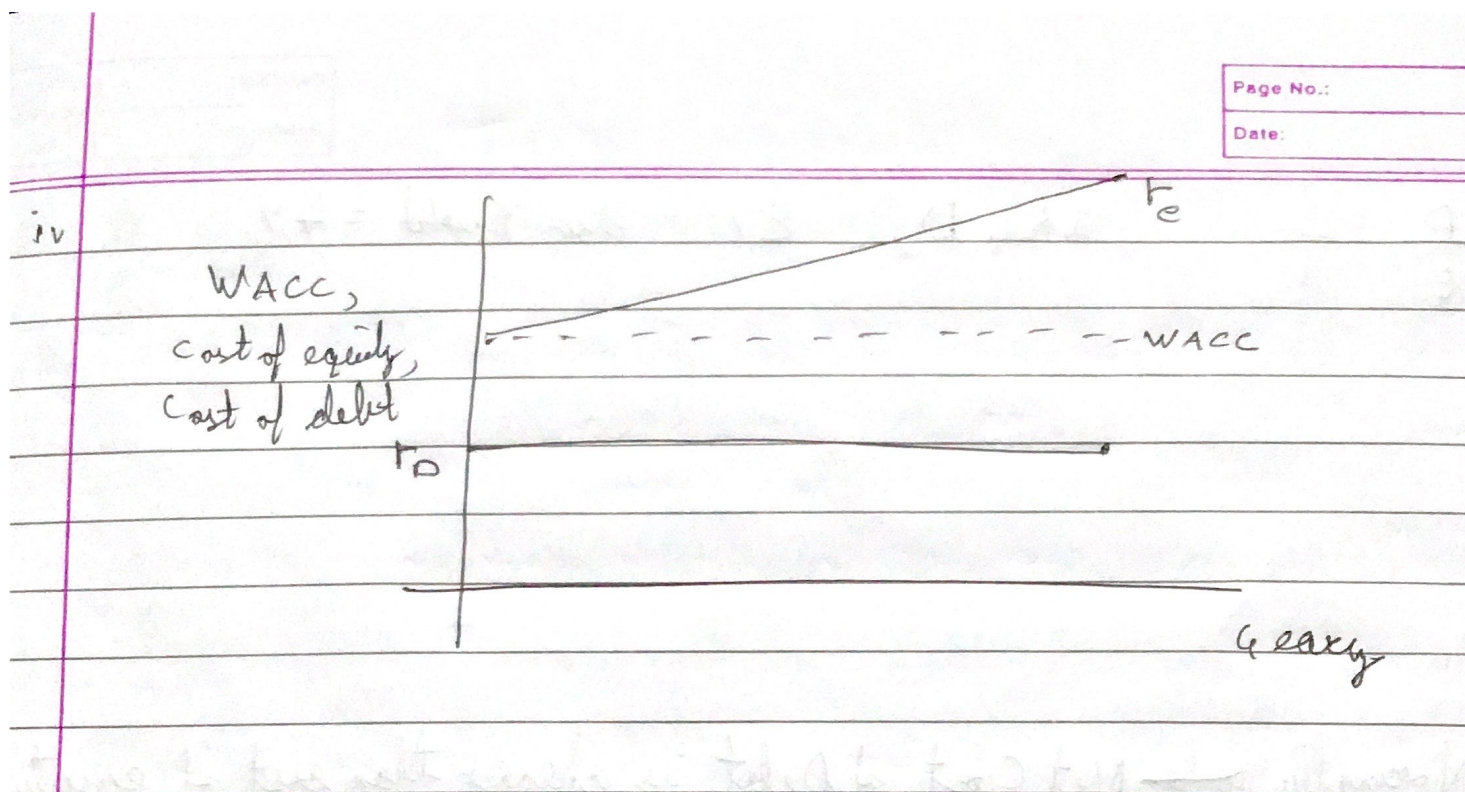


- iii) Under certain assumptions, leverage will be irrelevant to value of company & thereby WACC. MM proposed market value of company is primarily dependent upon its investment decisions (not financing decisions).
Assumptions:

- No taxes
- Unlimited borrowing allowed to corporations as well as individual investors at same rate of interest.
- Debt is risk free
- Perfect market

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$$V_a \quad R_f = 6\% \quad ERP = 5\% \quad \beta_{unl} = 1.4$$

CAPM

$$\begin{aligned} r_e &= R_f + ERP \times \beta \\ &= 6\% + 5\% \times 1.4 \\ &= 13\% \end{aligned}$$

$$b \quad M_{cap} = 100m \quad t = 30\%$$

$$\begin{aligned} \beta_G &= \beta_{unl} \left(1 + \frac{D}{E} (1-t) \right) \\ &= 1.4 \left(1 + \frac{1}{1} (1-30\%) \right) \\ &= 1.4 \left(1 + 1(70\%) \right) \\ &= 1.4 (1.7) \\ &= 2.38 \end{aligned}$$

c

$$\begin{aligned} r_e &= R_f + ERP \times \beta \\ &= 6\% + 5\% \times 2.38 \\ &= 17.9\% \end{aligned}$$