

- 1) d 2) A 3) D 4) d

5) Sales = 2500 Cost = 1500 $t = 40\%$ $i = 20\%$

$$NPV = 1500(1.2)^{-1} - 2500(1.2)^{-1} = -833.3$$

$$NPV' = 2500(1.2)^{-1} - 1500(1.2)^{-1} = 1041.67$$

8) i) Different companies have different level of systematic risk. Therefore they have different value of beta.

ii) gear $B_{\text{gear}} = 1.1$ $\frac{D}{E} = \frac{1}{2}$ $t = 30\%$ find B'_{gear} when $\frac{D}{E} = 2/1$

We know,

$$B_{\text{gear}} = B_{\text{ungear}} \left(1 + \frac{D}{E} (1-t) \right)$$

$$1.1 = B_{\text{ungear}} \left(1 + \frac{1}{2} (0.7) \right) \quad \left[B_{\text{ungear}} = 0.8148 \right]$$

$$B'_{\text{gear}} = B_{\text{ungear}} \left(1 + \frac{2}{1} (1-0.3) \right) = 0.8148 (1 + 0.7)$$

$$B'_{\text{gear}} = 1.385$$

9) ~~A~~ i) Communication can be a major problem

ii) Short term goals cannot be the main goal of company, which senior traders want to focus on

iii) Problems b/w manager and board members.

ii) $P_v = 70$ Div = 10 $R_D = 8\%$ $R_E = 8\%$ $R_F = 6\%$ $ERP = R_M - R_F = 5\%$
 $B = 0.8$

Share Price = $\frac{\text{Div}}{r_{\text{Cost of equity - growth rate}}} = \frac{10}{(6\% + 5\%(0.8)) - 8\%}$
 $= \frac{10}{0.02} = 500$

11) i) Beta (β) - Measure of systematic risk of a company's stock market

$$\beta = \frac{\sigma_{im}}{\sigma_m} \rho_{im} \frac{\sigma_I}{\sigma_m} = \frac{\sigma_{im}}{\sigma_m^2}$$

ii) $\beta_{gear} = \beta_{ungear} \left(1 + \frac{D}{E} (1-t) \right)$

iii) As an investor, i will invest on stock with $\beta = 1$

iv) Govt Bonds is likely to have $\beta = 0$

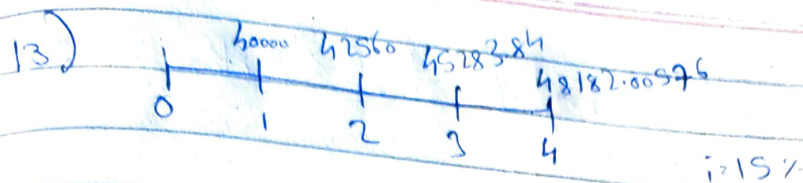
12) $\frac{D}{E} = \frac{1}{1}$ $R_f = 7\%$ $ERP = 5\%$ $t = 25\%$ $\beta = 1.5$
Gross Cost of debt = 9%

i) $WACC = R_e \left(\frac{M_e}{M_e + M_d} \right) + R_D^N \left(\frac{M_D}{M_e + M_D} \right)$
 $= (7\% + 5\% (1.5)) \left(\frac{1}{2} \right) + 9\% (1 - 25\%) \left(\frac{1}{2} \right)$
 $= (0.145) \left(\frac{1}{2} \right) + 0.0675 \left(\frac{1}{2} \right) = 0.10625$

ii) Find β_{ungear} , RoE

$1.5 = \beta_{ungear} \left(1 + \frac{1}{1} (75\%) \right) = 1.75 \beta$ $\beta_{ungear} = 0.857$

$RoE = 7\% + 5\% (0.857) = 0.1129 = 11.29\%$



i)
$$NPV = 40000(1.15)^{-1} + 40000(1.064)(1.15)^{-2} + \dots + 40000(1.064)^3(1.15)^{-4}$$

$$= 40000(1.15)^{-1} \left(1.064(1.15)^{-1} + \dots + (1.064)^3(1.15)^{-3} \right)$$

$$= 34282.6087 \left(2.57325585 \right) = 89504.55253$$

ii)

15) i) $\frac{P}{E} = \frac{1}{1}$ $R_d = 8\%$ $\text{div yield} = 4\%$

$$\text{CoC} = 4\% \left(\frac{1}{2} \right) + 8\% \left(\frac{1}{2} \right) = 6\%$$

v) a) $R_E = 6\%$ $ERP = 5\%$ $\beta = 1.4$

$$R_e = 6\% + 5\% (1.4) = 13\%$$

b)
$$\beta_{\text{gear}} = 1.4 \left(1 + \frac{1}{1} (1 - 30\%) \right) = 2.38$$

c)
$$\text{Coe} = 6\% + 5\% (2.38) = 17.9\%$$