BUSINESS FINANCE - 2

Assignment 1 - (Unit 1 & 2)

1. Which of the following is not true about the Internal Rate of Return (IRR) method of project appraisal.
   - D. IRR is the most reliable means of choosing between mutually exclusive projects.

2. Which of the following is the correct formula for the price earnings ratio?
   A. Market Price per Share / Earnings per Share.

3. While calculating Inventory turnover period, Inventories include
   D. All of the above.

4. The figures were taken from a Company's Accounts:-
   What is the company's cash flow from operating activities for the year ended 20192
   - C. 9,00,000.

5. The project generates 2500 in sales and 1500 in costs (excluding depreciation) at date 1.
   The tax rate is 20%.
   The discount rate is 20%.
   i. What is the cashflow from the project at date 1?
   - The cashflows on date 1 are as follows:-
   1) Positive cashflow - Sales of 2500
   2) Negative cashflow - Costs of 1500.

   ii. NPV
   The Net Present Value of the
   $NPV = 2500(1+0.2)^{-1} - 1500(1+0.2)^{-1}$
   $= 1833.33$

iii. $NPV = 2500(1+0.2)^{-1} - 1500(1+0.2)^{-2}$

$= 1041.66.$

We can see that as the costs are paid at date 2 the NPV ~~of~~ the increases

6. The ratios that help to analyse a business's efficiency are as follows:-

i) Inventory Turnover Period.

$$\text{Inventory Turnover Period} = \frac{\text{Inventories}}{\text{Cost of Sales}} \times 365.$$

i) This ratio helps us to understand how long on an average does the business hold its inventory.

ii) This ratio tries to assess how much stock (Inventory) does the business hold in relation to the scale of the company's operation.

iii) This ratio helps us to compare the efficiency of the business in holding optimum stock and to sell it with the industry (in a certain timeframe) Standard.

ii) Trade receivables turnover period

$$\text{Trade receivables Turnover period} = \frac{\text{Trade receivables}}{\text{Credit sales}} \times 365.$$

i) This ratio measures the average time in which the ~~ee~~ debtors i.e the trade receivables are being settled.

ii) In simple words, this ratio helps us to assess how much credit period is given on an average by the business to its debtors

iii) This ratio helps us to check ~~if the business receiv~~ in how many days the trade receivables are settled. A shorter period is usually desirable.

3) Trade payables turnover period.

$$\text{Trade payable turnover period} = \frac{\text{Trade payables}}{\text{Credit purchases}} \times 365$$

i) This ratio helps us to assess how much credit period does the company has on an average. ie in how many days the company makes the payment to its creditors.

ii) High ratio indicates a long credit period (which is favourable) and vice-versa

7 Limitations of Ratio Analysis

1) It diverts attention from the figures and statements themselves. - Ratios don't always reflect the entire picture. Ratios don't reflect the notes mentioned in the financial statements. So

2) Comparisions can be affected by different accounting policies or by other external factors.

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 accounting.

8. i) The possible reasons for the stocks to trade at different betas in the stock market are as follows:-

1) Beta is the measure of systematic risk. All companies face systematic risk, however some companies are exposed more to the market and thereby the risk than other. Due to this the beta of the stocks may vary.

2) Different companies have different capital structures. If the company is un-geared then its beta is different than the beta of a geared company.

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ii. Geared beta = 1.1

Debt: Equity ratio = 1:2

Corporate tax rate = 30%.

∴ To calculate:- Geared beta if the debt equity ratio is 2:2

∴ First we must calculate ungeared beta of the company.

$$\beta_G = \beta_{UG} \times \left(1 + \frac{D}{E}(1-t)\right) \quad \therefore$$

$$\therefore 1.1 = \beta_{UG} \times \left(1 + \frac{1}{2}(1-0.3)\right)$$

$$\therefore \beta_{UG} = \frac{1.1}{1.35} = 0.8148.$$

∴ For the debt: equity ratio of 2:2 beta (geared) is as follows.

$$\beta_G = 0.8148 \times \left(1 + \frac{2}{2}(1-0.3)\right)$$

$$\boxed{\beta_G = 1.385}$$

Q 9] Which of the following statement is true?

- B) In general, the market value of investment trust is higher than the net present value.

10] Companies exist to maximise shareholder wealth i.e the owners. However, there are certain problems associated ~~with~~ demonstrating that companies actually do work

to increase shareholder wealth.

They are as follows:-

1) Bad Business Practices.

- The Managers may want to increase shareholder wealth. But they may undertake practices that lead to short-term gains.

2) Forgetting about the customer

- Corporations may focus on maximising shareholder wealth, may lose sight of the wants of the customer.

ii) Current Market Price = Rs. 70.

The current dividend per share = Rs. 10

Risk-free rate = 6%. Market risk premium = 5%.

11. i)

1) Shareholders face two types of risk i.e systematic risk and specific risk. The systematic risk can be minimised by diversification by the shareholders, but the systematic risk cannot be hedged by diversification.

2) Beta (β) is the measure of systematic risk associated with a particular stock.

3) The shareholders require a return for taking on systematic risk and the beta of the stock helps to understand the systematic risk associated with the company.

Formula.

$$\beta = \frac{\sigma_{im}}{\sigma^2_m}$$

σ^2_m - variance of the market index.

σ_{im} is the covariance between, the individual stock's return and that of the market

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7i) $\beta_i = \rho_{im} \times \frac{\sigma_i}{\sigma_m}$

- ρ_{im} is the correlation coefficient between the individual company's stock return and that of the market.
- σ_i and σ_m are the standard deviation of the company's stock and market index.

ii) Beta can be determined as follows:-

First method The beta is a ratio between the covariance of the stock returns and the returns of the overall market and the variance of the market index.

$$\beta_i = \frac{\sigma_{im}}{\sigma^2_m}$$

Second method Here beta is calculated by dividing the standard deviation of the stock's return by the standard deviation of the return on the market index and multiplying it with the correlation coefficient between the company and the market.

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

iii) As an active stock investor, I would personally prefer to invest in a stock with beta 1.

A beta of 1 indicates that the stock has given an amplified return as compared to the market. This can be in the positive as well as negative direction. However it is better than a company with beta of -1 i.e the company that performs in a counter-cyclical manner (differently than the overall market experience).

iv) 1. Market index linked bond

The above financial instrument is likely to have a beta close to 0

Q.12] Debt: Equity ratio = 1:1

Risk-free rate of return = 7%.

Equity risk Premium = 5%.

Gross cost of debt = 9%.

Beta = 1.5

Tax rate = 25%.

∴ WACC is given by

$$WACC = \frac{\text{Market value of debt}}{\text{Market value of debt + equity}} \times \text{Net cost of debt} + \frac{\text{Market value of equity}}{\text{Market value of equity + debt}} \times \text{Cost of Equity.}$$

Cost of Equity = risk-free rate + beta x (equity risk premium)

= 7% + 1.5 x 5%.

= 14.5%.

Net Cost of Debt = Gross cost of debt x (1-t)

= 9% x (1 - 25%.)

= 6.75%.

$$\therefore WACC = \frac{1}{2} \times 6.75\% + \frac{1}{2} \times 14.5\% = 10.625\%.$$

ii) If the company were to repay all of its debt then the ~~ht~~ required return to equity changes.

To calculate the revised cost of equity, ~~it is important~~ we need to calculate the ungeared beta.

$$\beta_g = \beta_{ua} \times \left(1 + \frac{D}{E}(1-t)\right)$$

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

$$\beta_{ua} = \frac{1.5}{1.75} = 0.8571$$

$\therefore$ Cost of Equity = Risk free rate + β x (Equity risk premium)

= 7% + (0.8571 x 5%)

= 11.285%

Q.13]

i) NEW Cost of Project

At IRR, Present value of Cash outflows = Present value of Inflows.

$\therefore$ Cost of Project = $40,000(1+0.15)^{-1} + 40,000(1+0.15)^{-2}$

$+ 40,000(1+0.15)^{-3} + 40,000(1+0.15)^{-4}$

$= 40000\left[(1.15)^{-1} + (1.15)^{-2} + (1.15)^{-3} + (1.15)^{-4}\right]$

$= 40,000 \times 2.855$

$= 1,14,200$

ii) NPV

$$\text{Profitability Index} = \frac{\text{P.V of Cash inflows at COC}}{\text{P.V of Cash outflow}}$$

$\therefore$ P.V of cash flow at #COC = $1.064 \times 1,14,200$

$= 1,21,509$

$\therefore$ NPV = $1,21,509 - 114,200$

$= 7309$

14. i)

a) Current Ratio

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

- Current ratio is a liquidity ratio. It helps to assess the liquidity of a business.
- This ratio is used to assess whether the company will be able to pay its bills over the next few months.

b) Debtors turnover period

$$\text{Debtors turnover period} = \frac{\text{Trade receivables}}{\text{Credit Sales}} \times 365.$$

- This ratio is also known as Trade receivables turnover period
- This ratio measures the average time in which the debtors settle their balance.

ii) The company has a high inventory turnover period. In order to check whether the company would be able to meet its short term liabilities, the finance manager should keep an eye on the Quick Ratio.

$$\text{Quick Ratio} = \frac{\text{Current Assets} - \text{Inventory}}{\text{Current Liabilities.}}$$

This ratio is aimed at looking at short-term liquidity
The quick ratio considers what would happen, if all creditor and debtor accounts were settled immediately.

15. Debt Equity ratio = 1:1

GRY of debt = 8%.

Dividend yield = 4%.

Approximate WACC = $8\% \times \frac{1}{2} + 4\% \times \frac{1}{2}$

= 6%.

An investor may invest in this firm because as debt is taken, WACC falls and the company has a higher valuation. The return generated by the company will also be higher.

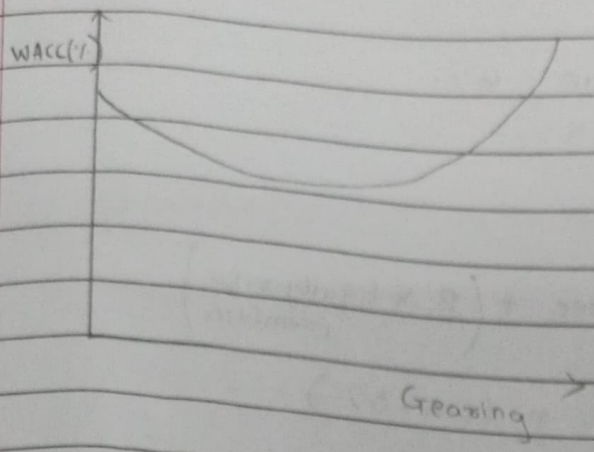
ii) In the traditional school the emphasis was on determining the amount of debt a company could safely carry without risking bankruptcy in a severe recession.

Debt is cheaper than equity finance. ~~This is because debt~~ Debt also has a tax-saving ability. So As gearing increases, the WACC should fall.

However, the increasing debt proportion increases the financial risk of shareholders. Therefore they demand a greater return for the increased risk

Therefore beyond a certain level of gearing, the downward effect on the WACC by increasing the debt finance in the business will be more than offset by the increase in return required by shareholders.

In this case the graph of WACC against gearing would be U-shaped.



ii) ..

Miller and Modigliani who held that gearing was irrelevant and that each increase in debt carried a compensating increase in the cost of the equity.

MM's first irrelevance proposition:-

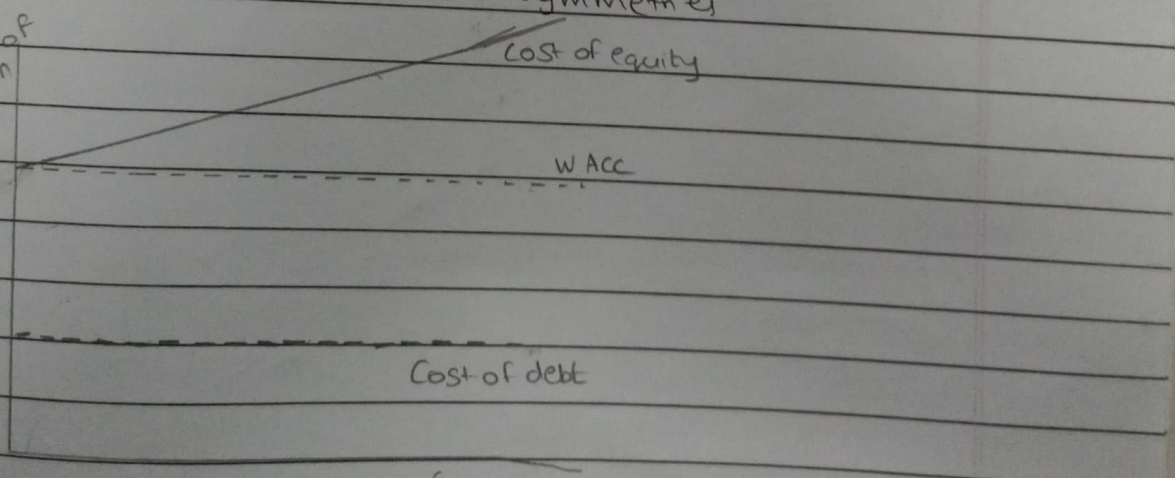
1. The market value of any firm is independent of its capital structure.

Modigliani and Miller argued that, under certain assumptions, gearing has no effect on the value of the company.

The assumptions made by them were as follows:-

1) There are no taxes
2) Unlimited personal and company borrowing is possible at the same rate of interest.
3) Debt is risk-free
4) There are no agency costs
5) There are no information asymmetries

iv)



V.

a. Risk-free rate of return = 6%.

Equity risk premium = 5%.

$\beta_{(UG)}$ = 1.4.

$$\text{Cost of Equity} = \text{Risk-free rate} + (\beta \times \text{Equity risk premium})$$

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

$$= 13\%$$

b. The ungeared beta = 1.4.

As debt has a book value of $10%.

$$\therefore \beta_{(\text{Geared})} = \beta_{(\text{Ungeared})} \times \left(1 + \frac{D}{E}(1-t)\right)$$

$$= 1.4 \times \left[1 + \frac{4}{6}(1 - 30\%)\right]$$

$$= 2.053$$

c. $$\text{Cost of Equity} = \text{Risk-free rate} + (\beta_{\text{Geared}} \times \text{Equity RSK Premium})$$

$$= 6\% + (2.053 \times 5\%)$$

$$= 18.65\%$$