BUSINESS FINANCE ASSIGNMENT 2

1. Which of the following statements is NOT true about Internal Rate of Return (IRR) method of project appraisal

A. IRR may give multiple solutions.

B. IRR is less popular than Net Present Value as a measure of project worth.

C. IRR has the benefit of highlighting the return achieved by the project.

D. IRR is the most reliable means of choosing between mutually exclusive projects.

ANSWER1. D. IRR is the most reliable means of choosing between mutually exclusive projects.

2. Which one of the following is the correct formula for the price earnings ratio?

A. Market price of share/ Earning per share

B. Issue price of share/ Earning per share

C. Market price of share* Earning per share

D. Issue price of share* Earning per share

ANSWER2. A. Market price of share/ Earning per share

3. While calculating Inventory turnover period, Inventories include

A. Finished goods

B. Work-in-progress

C. Raw material

D. All of the above

ANSWER3. D. All of the above

4. The following figures were taken from a company's accounts:

	2018	2019
Operating Profit	10,00,000	8,00,000
Depreciation	1,00,000	1,20,000
Working Capital	3,50,000	2,50,000

(inventory + trade receivables – trade payables)

What is the company's cash inflow from operating activities for the year ended 2019?

A. 12,00,000

B. 11,00,000

C. 9,00,000

D. 10,00,000

ANSWER4. D) 1000000

5. The project generates 2500 in sales and 1500 in costs (excluding depreciation) at

date 1. The tax rate is 40%.

The discount rate for the project is 20%.

i) What is the cash flow from the project at date 1?

ii) What is the NPV of the project?

iii) Now assume (for this question only) that your suppliers allow you to pay them with a one-year delay, that is, at date 2. How does the NPV of the project change compared to the previous question?

ANSWER5. (i) There is a positive cash flow of 2500, two negative cash flow of 1500 and

[(2500-1500) * 0.4] 400 on date 1

(ii) NPV = 600*V1 = 600*(1-0.2) = 480

(iii) If the supplier allows to pay them at date 2 then the new NPV= 2500*V1 -

1500*V2 – 400*V

= 720

Hence, The NPV will increase

6. If you want to measure any business efficiency, what ratios you will analysis and why?

ANSWER6. There are four main groups of ratios:

• Those which measure profitability.

• Those which measure liquidity.

• Those which measure business efficiency.

• Those which relate to the business' financial structure

• If we want to measure the efficiency of a business, we need the following ratio Inventory turnover period

• The inventory turnover period is defined as:

$$\text{stock turnover period} = \frac{\text{inventories}}{\text{cost of sales}} \times 365$$

It tells us how efficient a business is in terms of sales. The lower this ratio is the more efficient is the business.

• Trade receivables turnover period-

$$\text{trade receivables turnover period} = \frac{\text{trade receivables}}{\text{credit sales}} \times 365$$

This is a measure of the average length of time taken for trade receivables to settle their balance: It is desirable for this period to be as short as possible. It will be better for the company's cash flow If those owing the company money pay as quickly as possible.

7. Briefly list down the limitation of ratio analysis.

ANSWER7. The major limitations of ratio analysis are

• It diverts attention from the figures and 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.

• The statements could have been deliberately distorted by so called creative accounting.

8. i) State possible reasons why stocks trade at different betas in the stock market.

ii) A company has a geared beta of 1.1 on a debt equity ratio of 1:2 and corporate tax

rate of 30%. Calculate the geared beta if the debt equity ratio is 2:2.

ANSWER8. (i) All companies are exposed to systematic risk because they are all exposed to the market. However, some companies are more exposed to the market than others and therefore are exposed to a greater proportion of the systematic risk in the market.

• When beta>1 : The stock has previously amplified the return of the whole market.

• When beta<1 : The stock's performance was counter-cyclical, hence offsetting the market experience.

• When beta is close to zero: The stock has provided a more stable return as compared to the market as a whole.

(ii) B(geared) = B(Ungeared) x (1+ D/E(1-t))

Geared beta=1.1

Debt to equity ratio=1:2

Tax Rate=30%

Therefore, for new geared data, we need ungeared data first.

$$\left(1 + \left(\tfrac{1}{2}\right)(1 - 0.3)\right)$$

1.1* = B(Ungeared)

B(Ungeared) =

(1+( )(1−0.3)) 2

=0.815

1 1.1

Now,

Geared Beta = (0.815)(1 +

( )(1 – 0.3) Hence, New

Geared Beta= 1.385

9. A project having a life of one year is started with initial investment of 100 lakhs with 10% cost of capital. It's NPV and IRR is found to be 10 lakhs and 21%. If cost of capital is changed to 11% then calculate NPV and IRR?

ANSWER9. Given,

NPV= 10

IRR=21%

Cost of cap (i)=10%

Initial investment= 100

List of cash flows

-100

X positive cash flow

10 = -100 + x (1+10%) ^ -1

110=x(1.1)^-1

X=121

The second cash flow is 121

If I = 11%

(i) NPV = -100+121(1.11)^-1

= 9.009

(ii) IRR remains constant as the cash flows don't change

10. i) Define Systematic Risk and Specific Risk.

ii) Distinguish between systematic risk and specific risk and explain their relevance to capital project appraisal.

ANSWER10. (i)

• Systematic Risk is the risk of losing investments due to large scale factors,

such as political risk and macroeconomic risk, that affect the performance

of the overall market.

• Specific Risk is the risk of losing an investment due to company or industry

related issues. Unlike systematic risk, an investor can only mitigate against

unsystematic risk through diversification.

(ii)

Systematic Risk Specific Risk

• Risk that an investor takes by investing by just investing in Equities

• Risk that an investor takes by investing in my company

• This is a risk that all companies in a Market will be exposed to

• Any risk that my company is specifically exposed to is known as Specific Risk

• E.g. Business Cycle (Recession / Boom)

• E.g. Debt Structure

11. i) Explain the beta of a stock along with formula.

ii) How can beta be determined?

iii) As an active stock market investor, would you invest in a stock with a beta of 1 or-1?

iv) Name a financial instrument that is likely to have a beta of 0.

ANSWER11. (i) Beta is a numeric value that measures the fluctuations of a stock to changes in the overall stock market. In simple words, beta can be used to measure the volatility of a stock.

Formula= Covariance of the individual Company Variance of the market

(ii) Beta can be determined using the formula i.e dividing the Covariance of the individual company's returns by Variance of the Market returns.

(iii) A beta of 1 means that the stock is strongly correlated to the market and hence moves with the same pace of the market. Whereas, A stock with a beta of -1 means that the stock is inversely correlated to the market. I think that investing in a stock with either beta is equally risky. However personally, I would invest in a stock with beta -1.

(iv) Treasury Bills and Government issued Bonds are some financial instruments that have zero beta value.

12. ABC Pvt. Ltd. has a debt: equity ratio of 1:1. The risk-free rate of return is 7%, the equity risk premium derived from the market is 5% and the gross cost of debt is 9%. Its beta is 1.5 and assume any profit is taxed at 25%.

i) Calculate its weighted average cost of capital.

ii) ABC is concerned about its high debt: equity ratio. If ABC were to repay all debt,

what would be the required return to equity?

ANSWER12. (i) wacc = {(cost of equity) *(% equity) + (cost of debt) *(% debt)}/equity +debt)

Cost of equity = rf + Beta*(rm – rf) = 7% + 1.5*5% =0.145

Cost of debt = Cost of debt depending on rating of company × (1 – tax rate)

WACC = 0.145*0.5 + 9%*0.5*(1-25%) =10.625%

(ii) Ungeared beta needs to be computed.

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

1.5 = Ungeared beta * (1 + 1/1 *(1-25%))

= Ungeared beta * 1.75

Ungeared beta = 1.5 / 1.75 = 0.857143

New cost of equity = Risk-free rate + Ungeared beta * Equity risk premium

= 7% + 0.857143 * 5%

= 11.29%

13. Calculate for Project M:

i. NPV

ii. Cost of Capital

iii. Cost of Project

iv. Payback

ANSWER13. (i) At IRR, present value of cash outflow= present value of cash inflow, hence cost

Of Project = 40,000*2.855(cumulative discounting factor for 4 years at IRR)

=1,14,200

(ii) cost of capital = $(160000/121509)^{1/4} -1$

=7.129%

(iii) profitability index at cost of capital= 1.064

1.064= present value of cash inflow at cost of capital/114200

Present value of cash inflow at cost of capital = 121509

Net present value at cost of project = 121509- 114200= 7309

(iv) cost of capital payback period= 114200/40000 = 2.855

14. i) Define the following ratios and state its use:

a) Current ratio

b) Debtors turnover period

ii) Xylo Ltd deals in goods with a high inventory turnover period. Its finance manager wishes to ascertain whether the company would be able to meet its short term liabilities. Explain which ratio should he track on a regular basis and state the equation for the ratio suggested.

ANSWER14. (i)

(a) Current Ratio- One of the liquidity ratios that can measure a company's ability to pay its short-term loans. To achieve a high current ratio, Companies require high current assets and/or low current liabilities or short-term loans.

(b) The Debtors Turnover Ratio shows how quickly the credit sales are converted into the cash. This ratio measures the efficiency of a firm in managing and collecting the credit issued to the customers.

(ii) A high turnover ratio indicates the company has a low amount of inventory for sale, which may cause it to lose potential sales. Since this is the case, I think we should judge the company's ability to pay its short-term loans using quick ratio because it takes into account the inventory the company holds.

15. i) A company has debt to equity ratio of 1:1, the gross redemption yield on debt is 8% and the dividend yield is 4%. Explain why an investor might buy shares in this company, and suggest a suitable cost of capital for the investor, assuming the debt is held till maturity

ii) Explain the traditional view of the effect of gearing on the cost of capital, including why the cost of equity increases with an increase in gearing. You should include an appropriate diagram to illustrate your answer.

iii) Identify Modigliani and Miller's first irrelevance proposition, and describe its underlying assumptions.

iv) Draw a diagram showing the effect of gearing on the cost of capital using Modigliani and Miller's first proposition.

v) Beta is a measure of the risk of investing in a security.

a)If the risk-free rate of return is 6% and the equity risk premium is 5%, what is the cost of equity for a company with Beta (ungeared) of 1.4?

b) The total market capitalisation of a company is 100m, whose debt has a book value of 40% and a market value of 50%. The tax rate is 30%. Determine the geared beta of the company.

c) Determine the cost of equity of the company

ANSWER15.

(a) Investors may invest in the shares of this company:

• To Diversify the portfolio

• To maximize return (increasing idiosyncratic risk)

• To execute strategies like Strategic Holding, Personal Attachment to the company etc.

The Suitable cost of capital is anything higher than 6%

(8%*0.5 + 4%*0.5)

(b) On increase of the company gearing, WACC remains constant. Since cost of debt is cheaper than cost of equity, the latter increases just as much so as to offset the increased proportion of the cheaper debt.

The Modigliani Miller proposition states that for companies with equal earnings, the WACC remains the same irrespective of the gearing.
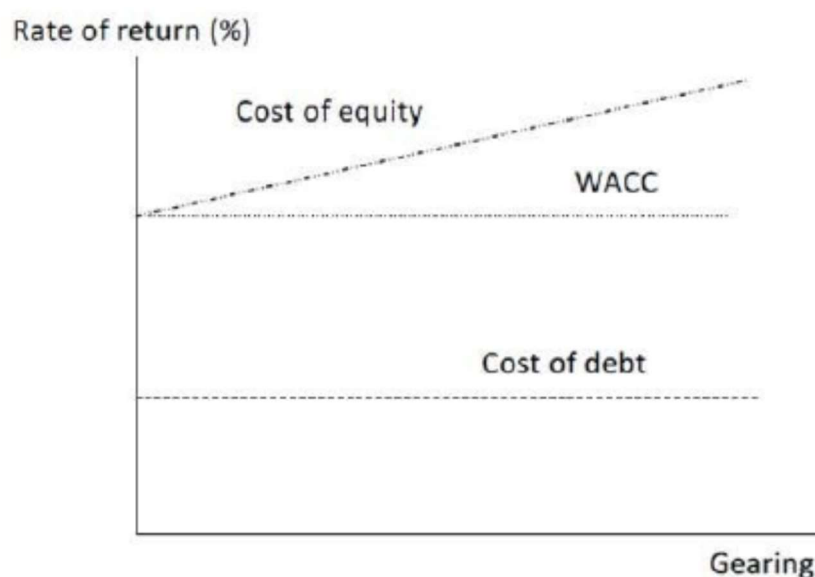
(c) First irrelevance proposition –

• Market value of the firm is independent of its capital gearing structure

Assumptions – •

Debt is risk free

• No taxes

• No agency costs

• Unlimited personal and corporate borrowing at same rate of interest

• No information asymmetry

(d) WACC Remains constant as gearing increases. Upon increase of gearing,

The cost of equity increases just enough to offset the increasing proportion of the cheaper debt.

Rate of return (%)
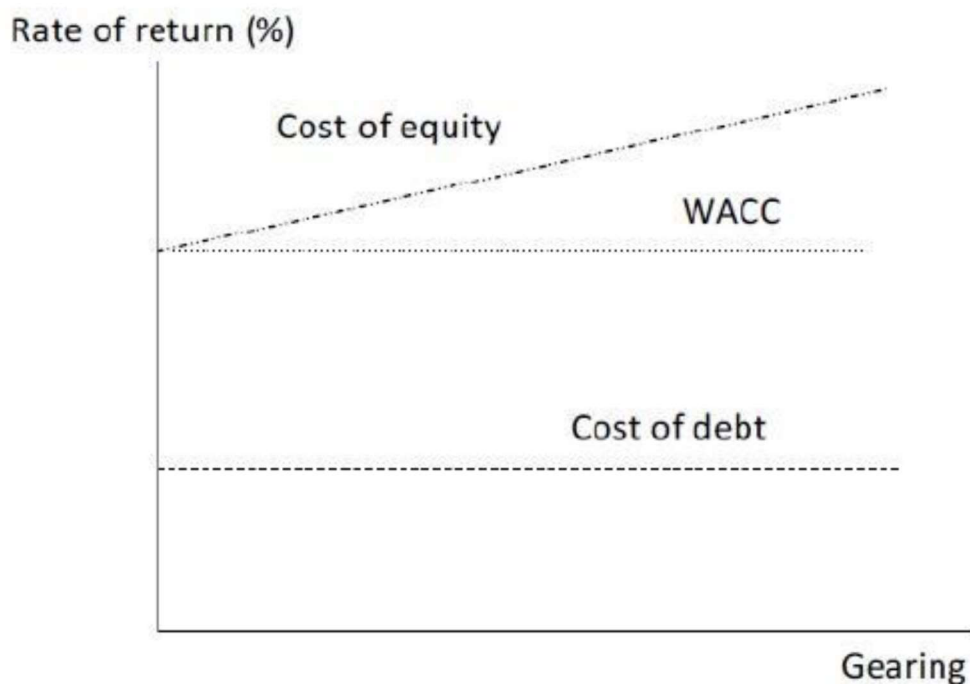
(e) Beta is a measure of volatility of a security.

(i) Rf = 6%

Equity Risk Premium = 5%

Beta = 1.4

Cost of Equity (Ke) = Rf + B(Equity Risk Premium)

= 6% + 1.4(5%)

Cost of Equity (Ke) = 13%

(ii) Market cap = 100mn

Debt/Equity Ratio = 0.5/0.5 = 1

Geared Beta= $\text{Ungeared Beta} * (1 + (\underline{\quad\quad}^{\text{Debt}}) * (1 - \text{Tax})]$
$$\frac{}{\text{Equity} \quad \text{Ratio}}$$

= 1.4*[1+1*0.7]

= 2.38

(iii) New Ke = Rf + Geared Beta*(Equity Risk Premium)

= 6% + 2.38(5%)

= 17.9%