

Business Finance Assignment 2

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Question & Answer

Q1. Which of the following statements is NOT true about Internal Rate of Return (IRR) method of project appraisal?

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

Q2. Which one of the following is a correct formula for the price earnings ratio?

Ans: A. Market price of share/ Earning per share

Q3. While calculating inventory turnover period inventories include?

Ans: D. All of the above

Q4. 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

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

Ans: D. 10,00,000

Q5. The project generates 25000 in states 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?

Ans. Sales – Cost = EBIT = 2500-1500 = 1000

Less Taxes (40% of 500) = 400

NOPAT = 600

ii) What is the NPV of the project?

Ans. PV of Inflow 600/1.2 = 500

NPV = PV of Outflow – PV of Inflow

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

Ans: NPV will go up

Q6. If you want to measure any business efficiencies, what ratio will you use for analysis and why?

Ans: For analysis any business efficiency, following are the three ratios:

- a. Inventory turnover period = $\text{Inventories} \times 365 / \text{Cost of sales}$

This ratio indicates to show how long inventory is held for an average. An inventory turnover period that is less rapid than other companies in the same industry might indicate an inefficiently large inventory holding.

- b. Trade receivable turnover period = $\text{Trade receivables} \times 365 / \text{Credit sales}$

This ratio measures average length of time taken for trade receivable to settle their balance. It is desirable for this period to be as short as possible as it will be better for the company's cash-flow.

- c. Trade payable turnover period = $\text{Trade payables} \times 365 / \text{Credit Purchases}$.

This ratio indicates the average number of credits that a company has from its suppliers. A high ratio may indicate that the company is able to obtain a long credit period from its suppliers, which will be of benefits to its cash-flows.

Q7. Briefly list down the limitation of ratio analysis.

Ans. Following are the limitations of ratio analysis:

- a) Ratio analysis does not consider the size of the company and can divert the attention from figures and statements.
- b) Ratio analysis may not be useful in presenting appropriate comparison due to involvement of different accounting practice and external factors.
- c) Ratio analysis may not show the true picture if there is an opportunity for management to apply bias towards few accounting policies and assumption which is called creative accounting.
- d) The peculiarities of trade may make ratio analysis less useful because of difficulty to interpret few certain ratios.

Q8. i) State possible reasons why stocks trade at different betas in the stock market.

Ans: Following are the possible reasons:

- i. Some stocks and industries are affected by the market to a greater extent than others.
- ii. New companies like start-ups are more volatile than their established counterparts.
- iii. The capital structure of a company plays a role in determining its beta, and companies can have different capital structures.

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 gear beta if the debt equity ratio is 2:2.

Ans: Geared beta = $\text{Ungeared beta} + (1 + D/E \times (1 - \text{Tax}))$

$$1.1 = \text{Ungeared beta} + (1 + 1/2 \times .7)$$

$$\text{Ungeared beta} = 0.8148$$

$$\text{New geared beta} = 0.8148 + (1 + 2/2 \times .7) = 1.385$$

Q9. A project having a life of one year started with initial investment of 100 lakhs with 10% cost of capital. Its NPV and IRR is found to be 10 lakhs and 21%. If cost of capital is changed to 11% then calculate NPV and IRR?

Ans:

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 cashflows don't change

Q10. i) Define systematic risk and specific risk

Ans. Systematic risk refers to the risk inherent to the entire market or market segment. Systematic risk, also known as "undiversifiable risk," "volatility" or "market risk," affects the overall market, not just a particular stock or industry. This type of risk is both unpredictable and impossible to completely avoid. It cannot be mitigated through diversification, only through hedging or by using the correct asset allocation strategy

Unsystematic risk refers to the probability of a loss within a specific industry or security

ii) Distinguish between systematic risk and specific risk and explain the relevance to Capital Project Appraisal

Ans. Systematic risk can be defined as a type of total risk that arises as a result of various external factors such as political factors, economic factors, and sociological factors. Systematic risk is non-diversifiable in nature. This means that this type of total risk cannot be controlled or minimized or avoided by the management of an organization. A systematic risk has the tendency to disrupt not just the whole of the market but an economy too. The major sources of systematic risk are risks related to the market, purchasing power, and interest rate and the common examples of such type of risk are inflation, price movements, fluctuation in interest rates, rise in unemployment, etc.

On the other hand, unsystematic risk can be defined as a type of total risk that arises as a result of various internal factors taking place within an organization. Unsystematic risks are diversifiable in nature. This means that these types of risks can be controlled, minimized and even avoided by the management of an organization. Unsystematic risk has the tendency to disrupt the wellbeing of an organization and sometimes the industry too. The major sources of such risks are risks pertaining to finances, business, and insolvency and the common examples of the same are a higher rate of operational costs, a rise in labour turnover, etc.

Q11. i) Explain the beta of a stock along with formula

Ans: The beta of a project is a measure of the systematic risk of the project relative to a diversified portfolio of all risky assets (i.e., the market). The market would have a beta of 1.

The beta of the company (β_p) is given by the following formula:

$$\beta_p = \frac{\sigma_{pm}}{\sigma_m^2}$$

where:

σ_{pm} is the covariance between the returns expected from the company and the return expected from the market

σ_m^2 is the variance of the returns expected from the market

ii) How can beta be determined?

Ans. The beta of the company may be measured by:

- i. looking at the company's historical returns on equity and comparing against market returns, but subject to significant variation for example dependent upon the time period considered.
- ii. considering the industry beta based on a range of companies undertaking similar activities.
- iii. estimating, based on knowledge of the company and its industry and how the industry might react to changes in the market.

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

Ans. A stock with a beta of 1 implies that the stock behaves in line with the market. Depending on expectations of market movements, as an aggressive investor, I may wish to invest in stocks with higher positive beta to maximize short-term gains.

A stock with a negative beta of 1 signifies that the stock behaves opposite to the market. If the market index improves, the stock will lose value and vice-versa. Is a downturn in the market is expected, low beta stocks may be attractive in the short to medium term.

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

Ans. Cash

Q12. ABC private limited 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 that is 9%. Its beta is 1.5 and assume any profit is taxed at 25%.

i) Calculate its weighted average cost of capital

Ans. Cost of equity = Risk-free rate + beta * Equity risk premium = 7% + 1.5 * 5% = 14.5%

Cost of debt = Cost of debt * (1-Tax Rate) = 9% * (1 - 25%) = 6.75%

WACC = 0.5 * 14.5% + 0.5 * 6.75% = 10.625%

ii) ABC is concerned about its high debt equity ratio. If ABC were to repay all debt, what would be the required return of equity?

Ans: Ungeared beta needs to be computed.

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

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%

Q13. The following data relates to a capital project being evaluated by the Management of X Ltd.

	Project M
Annual Cost Saving	Rs. 40,000
Useful Life	4 Years
I.R.R	15%
Profitability Index (PI)	1.064
Salvage Value	0

Calculate for Project M:

- i) NPV
- ii) Cost of Capital
- iii) Cost of Project
- iv) Payback

Ans. $40000(1/1.15 + 1/1.15^2 + 1/1.15^3 + 1/1.15^4) = 114200$

Payback = $114200/40000 = 2.855$

PI = PVIF / Cost

PVIF = PI * Cost = $1.064 * 114200 = 121509$

NPV = PVIF – Cost = $121509 - 114200 = 7309$

Cost of capital (i): $121509 = 40000(1/(1+i) + 1/(1+i)^2 + 1/(1+i)^3 + 1/(1+i)^4) \dots i = 12\%$

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

a) Current Ratio

Ans.

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

Uses: To assess whether the company will be able to pay its bills over the next few months. It provides a comparison of an estimate of the amount of money due to be received in the short term with an estimate of the amount of money to be paid over the same period.

b) Debtors turnover period

Ans.

$$\text{Debtors Turnover period} = \frac{\text{debtors (trade receivables)}}{\text{credit sales}} * 365$$

Uses: This is a measure of the average length of time taken for debtors (trade receivables) to settle their balance. It is desirable for this period to be as short as possible.

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

Ans. The finance manager should track the quick ratio.

$$\text{Quick ratio} = \frac{\text{current assets} - \text{inventories (stocks)}}{\text{Current Liabilities}}$$

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 what 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

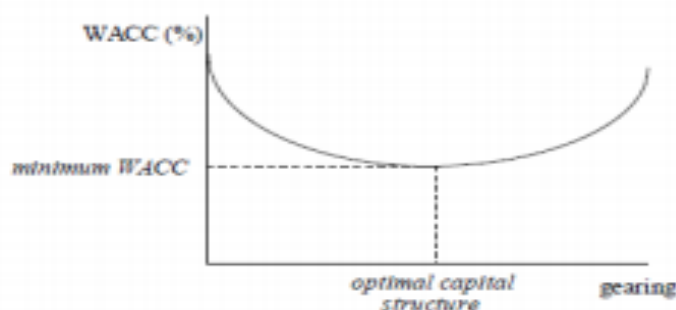
Ans. Investors will invest in the shares of this company:

- i. To diversify the portfolio (minimise systemic risk)
- ii. To maximise return as they would be believing in earning higher returns (increasing idiosyncratic risk)
- iii. Other reasons specific to the investor e.g., strategic holding, personal attachment with the
- iv. company, own faith and beliefs.

The suitable cost of capital is anything slightly higher than 6% ($8\% \times 0.5 + 4\% \times 0.5$)

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.

Ans. Debt is cheaper than equity finance, so as gearing increases, the WACC should fall. However, increasing the proportion of debt finance increases the risk to shareholders so shareholders demand a greater return for this increased risk. Therefore, beyond a certain level of gearing, the downward effect on the WACC of increasing the debt finance in the business will be more than offset by the increase in the return required by shareholders.



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

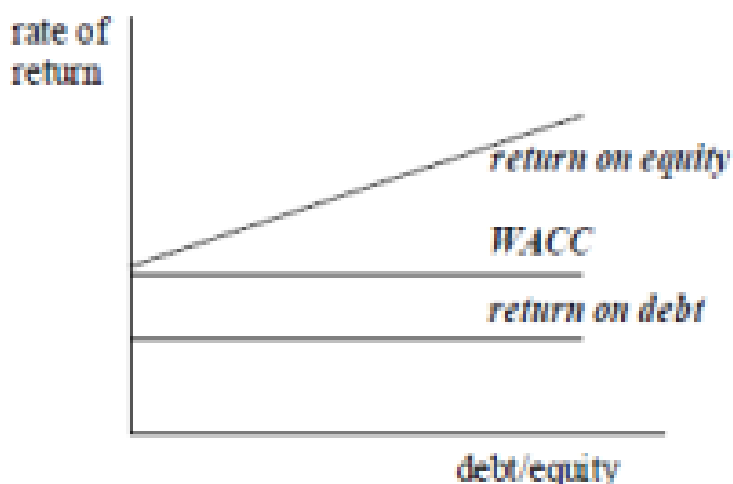
Ans. First proposition of Modigliani and Miller: The market value of any firm is independent of its capital structure.

The following are the assumptions:

- i. There are no taxes in the economy
- ii. Unlimited personal and company borrowing is possible at the same rate of interest
- iii. Debt is risk-free
- iv. There are no agency costs
- v. There are no information asymmetries.

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

Ans.



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?

Ans. cost of equity = risk-free return + beta * (equity risk premium) = 6% + 1.4 * 5% = 6% + 7% = 13%

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

Ans. Geared equity beta = Ungeared Beta * [1 + (Debt : Equity ratio) * (1 - t)]

Here the Debt: Equity ratio is based on market capitalisation, therefore,

Geared equity beta = 1.4 * [1 + (0.5/0.5) * (1 - 0.3)] = 1.4 * (1 + 0.7) = 1.4 * 1.7 = 2.38

d. Determine the cost of equity of the company.

Ans. Cost of equity = risk-free return + beta * (equity risk premium) = 6% + 2.38 * 5% = 17.9%

15.

Profit and loss account for the year ended 31st march 2019

Revenue (55,000+2,000+1,000)		58000
Gross Profit		<u>58000</u>
Administrative Expenses		
Depreciation On Laptop And Office Equipment	5041	
Office Supplies	1000	
Rent	14207	
Employee Salary	14000	
Office Electricity Bill	4000	
Mobile And Interest Bill	583	(38831)
Operating Profit		<u>19169</u>
Finance Cost And Income		0
Profit Before Tax		<u>19169</u>
Tax Payable		(3000)
Profit For The Year Attributable To Shareholders		<u>16169</u>

Statement of financial position as on 31st march 2019

Non Current Asset		
Laptop	31792	
Office Equipment	18167	49959
Current Asset		
Inventory Of Office Supplies	1000	
Trade Receivables	3500	
Cash	1000	
Bills Receivable	5000	
Prepaid Rent	1710	12210
Total Assets		<u>62169</u>
Equity		
Share Capital	32000	
Unearned Fees Reserve	9000	
Retained Earnings	11169	52169
Current Liability		
Outstanding Salary	4000	
Trade Payables	3000	
Tax Payable	3000	10000
Total Equity And Liabilities		<u>62169</u>

Statement Of Retained Earnings

Profit For The Year	16169
Dividend Paid	(5000)
Retained Earnings	<u>11169</u>