Name: Shailja Bhandari
Roll no: 35

classmate
Date
Page

Assignment 2 — Business Finance

1. D
2. A.
3. D.
4. D.

5.

i) Sales - Costs : EBIT : 2500 − 1500 : 1000
Less Taxes (40% of 500) : 400
NOPAT : 600

ii) PV of Inflow 600/1.2 : 500
NPV : PV of Outflow − PV of Inflow.

iii) NPV will go up.

6. For analysis any business efficiency, these ratios are uses:-

→ Inventory turnover period:

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

→ Trade receivable turnover period

The ratio measures average length of time 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.

→ Trade payable turnover ratio = Trade payable

This ratio indicates the average number of credit 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 supplier, which will be of benefits to its cash-flows

7. Limitations of Ratio Analysis

→ Ratio analysis does not consider the size of the company and can divert the attention from figures and statements.

→ Ratio analysis may not be useful in presenting appropriate comparision due to involvement of different accounting practice and external factors.

→ Ratio analysis may not show the true picture if there is an opportunity for management to apply bias towards the accounting policies and assumption which is called creative accounting.

→ The peculiarities of trade may make ratio analysis less useful because of difficulty to interpret few certain ratio

8.

i) We can compare individual stocks with the overall market by assessing the beta (β) of the stock.

for company i:

$$\beta_i = \frac{\sigma_{im}}{\sigma_m^2}$$

where σ_m^2 is the variance of the market index and σ_{im} the covariance between the individual stock's return and that of the market.

(ii) Different industry - inherent riskiness:

Geared Beta might be different because of different debt ratio. Brand value different. Some stocks are used more for speculative purposes hence more volatile.

(iii) Geared beta = Ungeared beta (1 + debt-equity ratio (1-tax))

1.1 = Ungeared beta + (1 + 1/2 * .7)

Ungeared beta = 0.8148

New geared beta = 0.8148 + (1 + 2/2 * .7)

= 1.385

9. Given.

NPV : 10
IRR : 21%.
Cost of cap (i) = 10%.
Initial investment = 100

list of cash flows : - 100
X positive cash
$10 = -100 + x(1+10\%)^{(-1)}$
$110 = x(1.1)^{(-1)}$
$X = 121$
The second cash flow is 121

If $i = 11\%$.
i) $NPV = -100 + 121(1.11)^{(-1)}$
$= 9009.$
ii) IRR remains constant as the cashflows don't change.

10)

I i) Systematic Risk:

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 correct asset allocation strategy.

Unsystematic risk:

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

ii) 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 organisation.

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 market, purchasing power, and interest rate and the common examples of such type of risk are inflation, price movements, fluctuation in interest rates 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 organisation. 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 organisation.

Unsystematic risk has the tendency to disrupt the wellbeing of an organisation. ~~Unsystematic risk~~ ? and sometimes the industry too.

The major sources of such 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.

11.

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

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

$$\beta_p = \frac{\sigma_{pm}}{\sigma^2_m}$$

where:

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

σ^2_m is the variance of the returns expected from the market

iii) The beta of the company may be measured by:

→ looking at the company's historical return on equity and comparing against market returns, but subject to significant variation for example dependent upon the time period considered.

→ considering the industry beta based on a range of companies undertaking similar activities

→ estimating, based on knowledge of the company and its industry and how the industry might react to changes in the market

iii) 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 would 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 If a downturn in the market is expected, low beta stocks may be attractive in the short to medium term

iv) Cash

12. i) Cost of equity = Risk-free rate + beta * Equity risk premium.

= 7% + 1.5 × 5%

= 14.5%

ii) 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) Ungeared beta needs to be computed.

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

1.5 = Ungeared beta × $\left(1 + \frac{1(1-25\%)}{1}\right)$

= Ungeared beta × 1.75

Ungeared beta = $\frac{1.5}{1.75}$ = 0.857143

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

= 7% + 0.857143 × 5%

= 11.29%

13) Following is the date on a capital project being evaluated by management of X Ltd.

Annual cost Saving	40000
useful life	4 years
I.R.R.	15%
Profitability ~~ratio~~ index (PI)	1.064
NPV	?
Cost of capital	?
Cost of project	?
Pay back	?
Sawage value	0

Discount factor	15%	14%	18%	12%
1 year	0.869	0.877	0.855	0.893
2 year	0.756	0.769	0.783	0.797
3 years	0.658	0.675	0.693	0.712
4 years	0.572	0.592	0.613	0.636
Total	2.855	2.913	2.974	3.03

I. At IRR Present Value of Cash outflows = Present value of Cash Inflows
Hence, cost of Project = 40,000 × 2.855 = ₹ 1,14,200.

II. Profitability index at cost of capital = 1.064.

1.064 : Present value of Cashflows at cost of capital
1,14,200

Present value of Cash inflows of cost of capital : 121509
Net Present value of cost of capital = ₹ 121509 - ~~₹ 114200~~ 114200
= 7309.

III Cumulative P.V at cost of capital (1-4)

$$= \frac{\text{Present Value of Cashflows}}{\text{Annual cashflows}}$$

$$= \frac{121529}{40000} = 3.038$$

Reference to Cumulative P.V AF table gives us the cost of capital 12%.

IV Payback Period : $\frac{114200}{40000}$: 2,855 years

14.

i) a) Current Ratio:

Current Ratio = Current Assets / Current liabilities

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

b) Debtors turnover period:

Debtors Turnover period = (debtors (trade recievables) / credit sales) x 365

Utility → this is a measure of the average length of time taken for debtors (trade recievables) to settle their balance. It is desirable for this period to be as short as possible

ii)
The finance manager should track the quick ratio

Quick ratio = $\frac{\text{current assets} - \text{inventories (stock)}}{\text{current liabilities}}$

15.

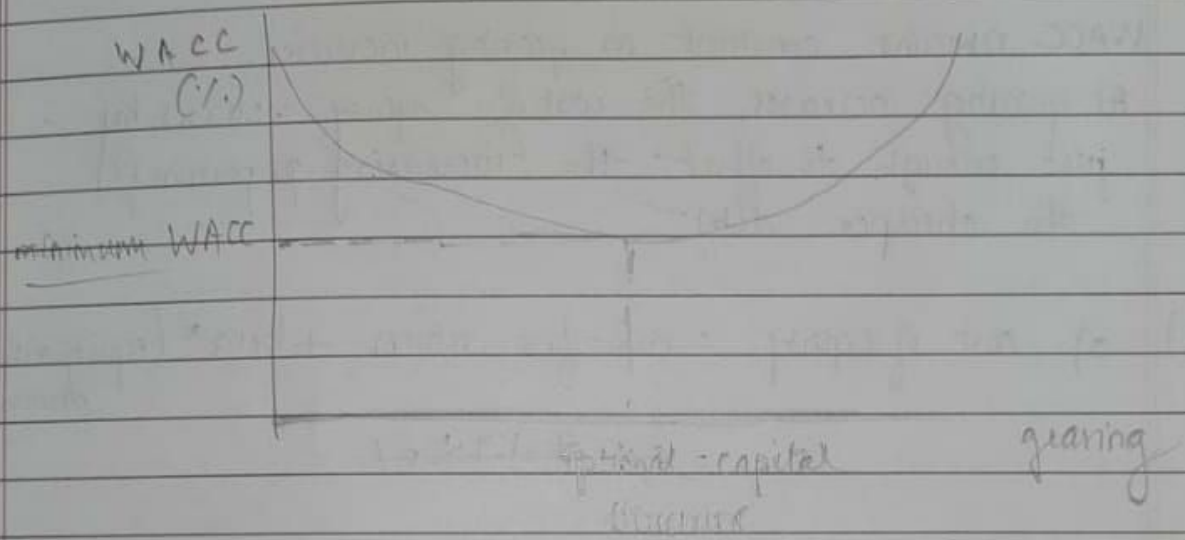
i) Investors will invest in the shares of this company:
→ To diversify the portfolio (minimise systematic risk)
→ To maximise return as they would be believing in earning higher returns (increasing idiosyncratic risk)
→ other reasons specific to the investor eg, strategic holding, personal attachment with the company, own faith and beliefs.

The suitable cost of capital is anything slightly higher than 6%.

(∵ 3% × 0.5 + 9% × 0.5)

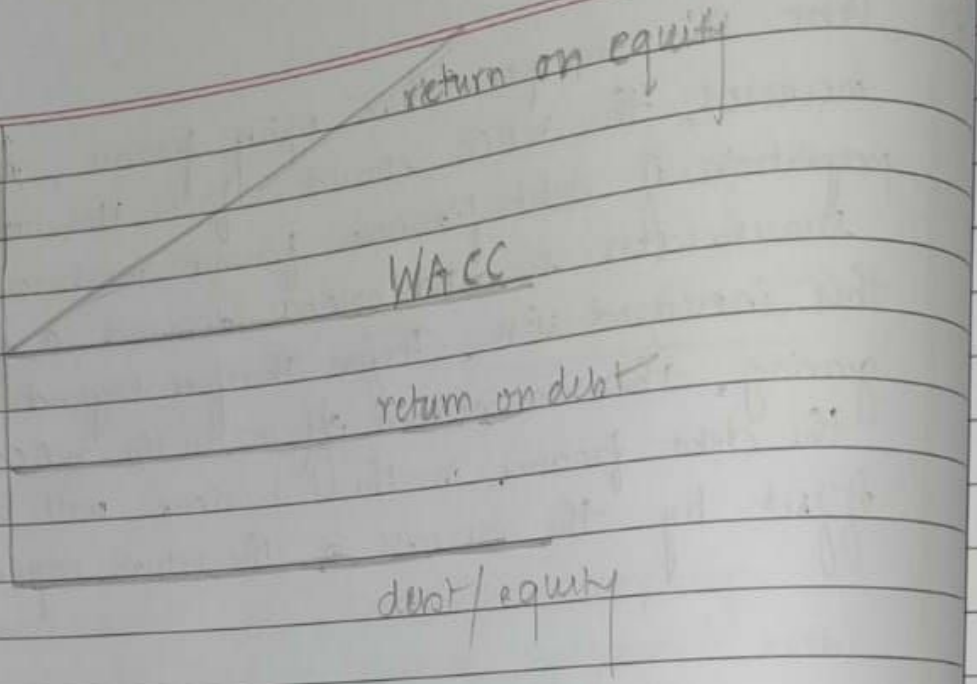
ii)

ii) Debt is cheaper than equity finance, so as gearing increases, the WACC should fall. However, increasing the proportion of debt ~~finance~~ finance increases the risk to shareholders so shareholders demand a greater return for this increased risk. Therefor 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) first proposition of modigliani and miller :-
The market value of any firm is independent of its capital structure.
The following are the assumptions:
- → there are no taxes in the economy.
- → Unlimited personal, and company borrowing is posible at the same rate of interest
- → Debt is risk-free
- → There are no agency costs
- → there are no information asymmetries.

iv)



WACC remains constant as gearing increases.
As gearing increases, the cost of equity increases by just enough to offset the increasing proportion of the cheaper debt

v) a) cost of equity = risk-free return + beta * (equity risk premium)

~~= 6% + 1.4 x 5%~~

= 6% + 1.4 x 5%

= 6% + 7% = 13%

b) Geared equity beta = Ungeared Beta X [1 + (Debt : Equity (1-t)]

→ Debt : Equity ratio is based on market capitalization, therefore,

Geared equity beta = $1.4\left[1+\left(\frac{0.5}{0.5}\right)\times(1-0.5)\right]$

= 2.38

c) Cost of equity = risk-free return + beta x (equity risk premium)

= 6% + 2.38 x 5%

= 17.9%