

Business Finance - Assignment 2
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1. d) IRR is the most reliable means of choosing between mutually exclusive projects.

2. a) Market price of share/ Earning per share

3. d) All of the above

4. b) 1000000

5. i) $(2500-2500)(1-0.4)$

= 600

ii) NPV

=600v

=600(1-0.2)

=480

iii) Since costs can be paid one year later, NPV will be higher.

6. To measure efficiency, we use the Trade Payables turnover period, Trade Receivables turnover period and the Inventory turnover period. These ratios help us calculate the cash conversion cycle of a business which is the time taken by the business to convert its investments in inventory and other resources into cashflows from sales. The inventory turnover period tells us how long the business takes to convert inventory into sales. The trade receivables turnover period tells us how long trade receivables take to settle their balance, and the trade payable turnover period tells us how long a company takes to pay off its creditors.

7. a) Ratio analysis uses historical information that may not give the true picture about the current state of the business. Hence, it does not account for inflation as well.

b) Ratio analysis relies heavily on the reports provided by the company, so if the reports are found to be misleading then the analysis may also be deemed fallacious.

c) It does not consider the human element of a firm. Ratio analysis cannot predict how well the company will do based on its leadership and the decisions that will be taken by them in the future.

d) Changes in accounting policies of a firm from one year to the next will deem it difficult to compare ratios from past years to the latest.

e) Ratio analysis relies on financial statements as and when published by the firm, so it does not consider the seasonal changes in business.

8. i) β measures the volatility of a stock in relation to the market. Different stocks tend to have different β values as various businesses will have varying levels of profit, desirability, and price movements in the market. Stocks can trade at different β as:

a) They may be of different industries.

b) The two companies will have different business strategies and

c) Market sentiment towards stocks.

d) Varying degree of performance.

e) Demand for the stock.

Geared beta = Ungeared beta + $(1+D/E * (1-Tax))$ 1.1 = Ungeared beta + $(1+1/2 * 0.7)$ Ungeared beta = 0.8148 New geared beta = $0.8148 + (1+2/2 * .7) = \underline{1.385}$

9. NPV

$$=-100+x(1/1+i)$$

$$\text{Therefore } x= 110(1,1)$$

$$=121$$

Hence when cost of capital is 11%, then,

$$NPV = -100 + 121/1.11$$

$$= 9.009$$

$$IRR = 21\%$$

10. i) Specific risks are risks that are specific to companies and can be mitigated by diversification. Example: A company has a bad quarter. Systematic risks apply to the market or the industry as a whole and cannot be mitigated through diversification. Example: Interest Rates are raised; Rate of inflation is higher than expected etc.

ii) Systematic risks are risks that apply to the entire market and are tougher to mitigate than specific risks that apply to individual firms. The type of risk being carried by a project has a role to play in its viability, as project managers always try and minimise risk to the highest possible extent. Risk analysis is carried out in many ways (risk matrices, scenario analysis, simulations etc.) and gives the manager an overview of how viable the project is. Metrics like the NPV and IRR are then calculated by considering the identified risks and the viability of the project determined.

11. Beta is the measure of a calculating systematic risk; it compares the returns a company has generated against the market. It measures how a particular stock will perform in relation to the market.

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

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

- 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

- 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

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

iii) Cash

12. 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 = $0.5 * 14.5\% + 0.5 * 6.75\%$

$$= 10.625\%$$

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

Annual Cost Saving	40,000
Useful Life	4 years
I.R.R.	15%
Profitability index (PI)	1.064
NPV	?
Cost of capital	?
Cost of project	?
Pay back	?
Salvage value	0

Find the missing values considering the following table of discount factor only.

Discount factor	15%	14%	13%	12%
1 year	0.869	0.877	0.855	0.893
2 years	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
 $1.064 = \frac{\text{Present Value of Cash Inflows at cost of capital}}{1,14,200}$

Present Value of Cash Inflows at cost of capital = ₹1,21,509.

Net Present Value at cost of capital = ₹1,21,509 – ₹1,14,200 = ₹7,309

III. Cumulative P.V.A.F at cost of capital (1 - 4) = $\frac{\text{Present Value of Cash Inflows}}{\text{Annual Cash Inflows}}$
 $= \frac{1,21,509}{40,000} = 3.038$

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

IV. Payback Period = $\frac{1,14,200}{40,000} = 2.855$ years.

14. a)

Current Ratio:

Current ratio = current assets/ current liabilities

UTILITY:

- 1) 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

Debtors Turnover period = debtors/ credit sales × 365

UTILITY:

- 1) 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.

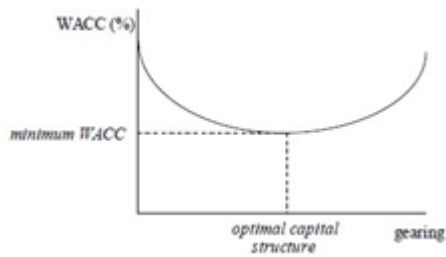
ii. The finance manager should track the quick ratio

Quick ratio = current assets- inventory/ current liab

15.1i) Given that the business is risky to invest in as it has a debt-equity ratio of 1, an investor might invest in the company to obtain a steady and marginally higher dividend payments. Another reason to invest in the company would be that the investor expects growth in the future, given a lot of the financing is using debt, the company may still be in its infancy and the investor can expect the dividends as well as the share price of the company to increase in the future.

A good cost of capital would be to include an equity risk premium as well on top of the 8% cost of debt depending on the riskiness of the investment.

ii)The traditional view was focussed on determining the amount of debt that a company can carry until it goes bankrupt. As debt is cheaper than equity, as the amount of debt increases the average cost of capital should fall. This is not the case because, as the amount of debt increases, so does the riskiness of investment in the business and subsequently the costs of debt and equity (as a company borrows more, investors demand a higher return for the additional risk and creditors tend to increase the cost of debt finance for the same reason as well). Therefore, after a certain level the positive effect that increasing debt has on the average cost of capital sees a complete turnaround due to the increasing costs of debt and equity.



iii)

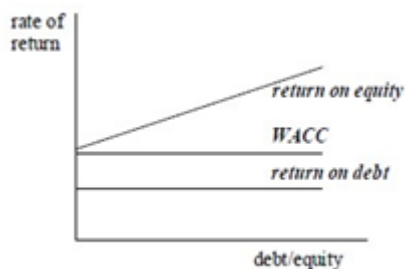
First proposition of Modigliani and Miller: The market value of any firm is independent of its capital structure.

The following are the assumptions:

- There are no taxes in the economy
- Unlimited personal and company borrowing is possible 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)

$$= 6\% + 1.4 * 5\%$$

$$= 6\% + 7\% = 13\%$$

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

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

$$\text{Geared equity beta} = 1.4 * [1 + (0.5/0.5) * (1 - 0.3)]$$

$$= 1.4 \cdot (1 + 0.7)$$

$$= 1.4 \cdot 1.7$$

$$= 2.38$$

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

$$= 6\% + 2.38 \cdot 5\% = 17.9\%$$