

Business Finance

Assignment 2

1. d
 2. a
 3. d
 4. b
- 5.
- i) $(2500 - 1500)(1 - 0.4) = 600$
 - ii) $NPV = 600 v = 600 * (1 - 0.2) = 480$
 - iii) This means that costs can be paid with a one-year delay and will be incurred at date 2. Therefore,
$$NPV = [2500 * (1 - 0.2) - 1500 * (1 - 0.2)^2] * (1 - 0.4) = 624$$
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.
- ii) $\beta_g = \beta_u [1 + (Debt - Equity Ratio (1 - tax rate))]$
 $\Rightarrow \beta_u = 1.1 / (1 + (0.5(1 - 0.3))) = 0.815$
 $\beta_{g(new)} = 0.815 (1 + (1(1 - 0.3))) = 1.385$

9. Solving:

$$NPV = 10 = -100 + X \left(\frac{1}{1+i} \right)$$

$$\Rightarrow X = 110 (1 + 0.1) = 121$$

Therefore, when cost of capital is 11%:

$$NPV = -100 + \frac{121}{1+0.11} = 9.009$$

IRR will remain the same in both the cases at 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.

- i) 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.

$$\beta = \frac{\text{cov}(i, m)}{\sigma_m^2}$$
$$= \rho_{im} \left(\frac{\sigma_i}{\sigma_m} \right) \text{ where, } i \text{ represents the company values and } m \text{ the market.}$$

- ii) Beta is calculated by dividing the covariance between the company and market returns and dividing it by the variance of market returns.
- iii) I think it is better to invest in a stock that has a beta of 1, as this means that the stock moves perfectly in line with the beta. This would mean that I get returns that are the same as the market returns.
- iv) Government Bonds are likely to have a beta of zero.

12.

i) $\beta_g = 1.5(1 + (1 - 0.25)) = 2.625$

$$\text{Cost of Equity} = 0.07 + 2.625(0.05) = 0.201$$

$$WACC = \frac{\text{Cost of Debt (Market Value of Debt)} + \text{Cost of Equity (Market Value of Equity)}}{\text{Market Value of Debt} + \text{Market Value of Equity}}$$

$$\Rightarrow WACC = \frac{0.09 + 0.201}{2} = 14.5625\% \left(\because \frac{\text{Debt}}{\text{Equity}} = 1:1 \right)$$

- ii) If all Debt is repaid Debt/Equity = 0

$$\Rightarrow \beta_g = \beta_u$$

$$\therefore \text{Cost of equity} = 0.07 + (1.5 \cdot 0.05) = 14.5\%$$

$$13. (40 \times a_{41}^{@15\%}) - X = 0$$

$$\Rightarrow X = 114.199$$

Now,

$$\text{Profitablility Index} = \frac{\text{Present Value of future cashflows}}{\text{Initial Investment}}$$

$$\Rightarrow \text{Present Value of Cashflows} = 1.064 * 114.199 = 121.507$$

$$i) \quad \text{Net Present Value} = 121.507 - 114.199 = 7.309$$

$$ii) \quad 121.507 = 40 \cdot a_{41}^{@i\%}$$

$$\Rightarrow i = \text{Cost of Capital} = 11.99\%$$

$$iii) \quad \text{Cost of Project} = 114.199$$

$$iv) \quad \text{Payback Period} = \frac{114.199}{40} = 2.85 \text{ years} \approx 3 \text{ years}$$

14.

i)

- a. Current Ratio: The current ratio measures a firm's ability to pay off its current debt obligations. It provides a comparison between the estimates of money receivable in the short term to the money due in the short term. It is defined as:

$$\text{Current Ratio} = (\text{current assets} / \text{current liabilities})$$

- b. Debtors Turnover Period: The trade payables turnover period measures how long a firm takes to pay off its creditors on average.

$$\text{Trade Payables Turnover Period} = \frac{\text{Trade Payables}}{\text{Credit Purchases or Cost of Sales}} \times 365$$

- ii) As Xylo Ltd. Has a high inventory turnover period, the manager may find it tough to meet their short-term debt obligations as their inventories do not turn into cash in hand fast enough. Hence, it would be advisable to deal with creditors who allow for leeway in payment times and offer a longer payback period.

It would be advisable to use the quick ratio on a regular basis as it would give the manager a better idea of the actual assets in hand to meet short term obligations.

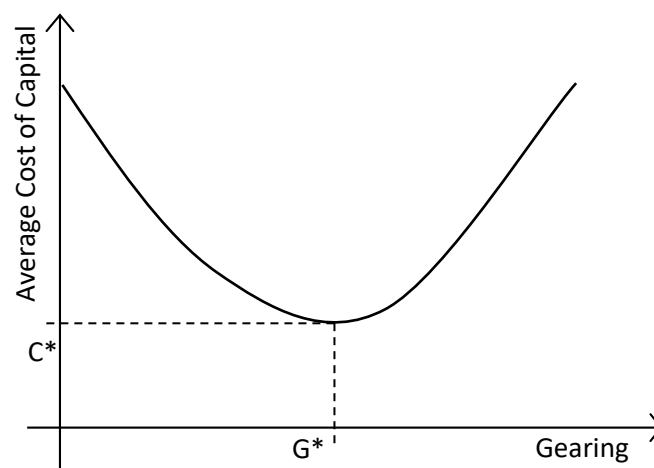
$$\text{Quick Ratio} = \frac{\text{Current Assets} - \text{Inventories}}{\text{Current Liabilities}}$$

15.

- i) 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.

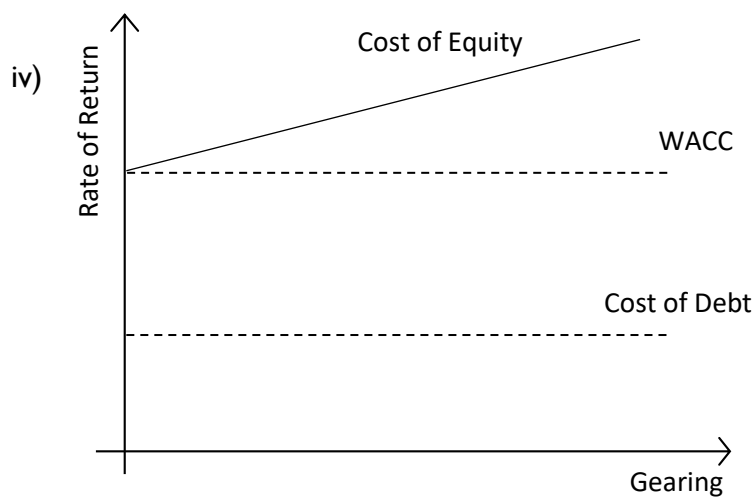
- ii) The traditional view was focussed on determining the amount of debt that a company can carry until it goes bankrupt. As debt is cheaper than equity, as the amount of debt increases the average cost of capital should fall. This is not the case because, as the amount of debt increases, so does the 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) Modigliani and Miller's first irrelevance proposition states that:

The value of a firm is independent of its capital structure and assumes the following:

- I. There are no taxes.
- 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.



v)

a) $r_i = r_f + \beta (\text{Equity Risk Premium})$
 $\Rightarrow r_i = 6\% + (1.4 \times 5\%) = 13\%$

b) Using market values for debt and equity, we have:

$$\frac{\text{Debt}}{\text{Equity}} = \frac{100m}{50m} = 0.5$$

Therefore,

$$\beta_g = 1.4 \left(1 + (0.5 (1 - 0.3)) \right) = 1.89$$

c) $\text{Cost of Equity} = 6\% + (1.89 \times 5\%) = 15.45\%$