**CORPORATE FINANCE 2015 SOLUTIONS**

**QUESTION 1**

1. Break-even analysis – decision making and planning by management do not involve only the determination of cost behavior. Business planning and decision making also involve an examination of how costs and sales volume relate to profit. Thus, the break-even analysis is concerned with how total costs, total revenues, and total profits are related to sales volume. The analysis can therefore be used to answer very important questions in relation to business planning, including predicting the effects of changes in costs and sales volume on profit.

The break-even analysis is based on the following relationship

Profit = Revenues – Total costs

**P** = px – (a + bx)

Where,

**P** is profit for the period

p is selling price per unit

x is level of outputproduced and sold during the period

a is level of fixed costs for the period

b is variable cost per unit produced and sold

1. Application of break-even analysis by managers

* Managers can know the level of output at which total revenues just cover total costs, i.e. the level at which an organisation will break-even. This information can be useful to the organisation in assessing the probability of making a profit in the coming year
* Managers can assess the effects of changes in costs and sales on profit, i.e. increases in fixed costs will raise the break-even point, increases in unit variable costs will also raise break-even point and increases in unit selling price will lower the break-even point.
* Managers can assess by how much sales can fall below budget before making a loss. A low margin of safety will warn the managers that a slight short-fall in achieving the sales budget will bring about a loss. And so the managers may have to make revised forecasts to raise the MOS.

1. Limitations of break-even analysis

* It assumes that production volume and sales volume are the same. In practice , significant variances in stocks will occur
* It assumes that selling price per unit will be constant as se by management decision over the entire relevant range of output. In practice, the selling price may be influenced by many factors outside the control of management.
* It assumes that firm’s total costs can be separated into their fixed and variable components. However, like we have already seen, it is seldom immediately obvious which costs are fixed and which are variable and quite sophisticated techniques may be needed to segregate costs into appropriate categories for decision making purposes.

**Question 2**

1. Disadvantages of payback methods are as follows:

* takes no account of time value of money
* arbitrary selection of cut-off date
* the payback approach is inherently short-terms and discriminates against those projects which have long lives
* payback is not a sensible means by which to make investment decision since it is not consistent with the goals of the organisation

1. Calculation of NPV for Project X

|  |  |  |  |
| --- | --- | --- | --- |
| **TIME** | **CASH FLOW** | **DISCOUNT FACTOR** | **PRESENT VALUE** |
| 0 | -150,000 | 1 | -150,000 |
| 1 | 60,000 | 0.935 | 56,100 |
| 2 | 60,000 | 0.873 | 52,380 |
| 3 | 60,000 | 0.816 | 48,960 |
| NPV |  |  | **7,440** |

The NPV of this project is MK7, 440. As NPV is positive, project X should be undertaken as it will increase shareholders’ wealth

**QUESTION 3**

1. Theoretical Ex-rights Price

Price for 4 shares before rights issue (4 X 1,500) 6,000

Price for taking up one right issue 1,000

Total **7,000**

Theoretical Ex-rights price therefore = 7,000/ (4 + 1)

=$1,400

1. If James buys the rights issue

Number of shares for James 2,000

Rights offer 2,000/4 500

Total holding after issue 2,500

Total value of holding after rights issue 2,500 X $1,400

$3,500,000

Less: Cost of rights issue (500 x 1,000) $ 500,000

$3,000,000

ii. If James does not exercise his rights issue

Value of holding after rights issue (2,000 x 1400) 2,800,000

Sale of rights {500 x 400(1400-1000)} 200,000

Total value 3,000,000

iii. If James allows rights offer to Lapse

Then the value will be 2000 X 1400 $2,800,000

From the scenario above it is evident that the option to lapse the offer is not the right one for James as the other two would give him a better position if right issue is taken or if the rights are sold as both give the same outcome.

1. Bonus issue involves issuing new shares to existing shareholders in proportion to their existing shareholdings. However, shareholders do not have to pay for the new shares issued.

**Question 4**

1. Factors influencing cost of capital

* General economic conditions: it determines the supply and demand of capital within the economy, i.e. higher inflation means the fall in purchasing power and investor required rate of return
* Risk: firm’s operating and financial decisions. The higher the risk the higher the required return for the investor
* Capital structure: a significant increase in the firm’s gearing by raising additional debt finance may cause equity shareholders to demand increased returns because of the increased exposure to financial risk.

1. Step 1

Calculate the market value of the debt & equity and the weightings/proportions of equity and debt

Market Value Weight

MK’m

Equity (5m x $3) 15 0.75

Debt (50,000 x $98) 4.9 0.25

Total Market value 19.9 1.00

Step 2

Calculate WACC

= 0.25(10%) x 1-0.30) + 0.75 (12%)

= 1.7% + 9%

= 10.75%

**QUESTION 5**

1. Debt and equity are different in the following ways:

* Equity denotes ownership whereas debt is a legal obligation of the company to repay borrowed funds
* Debt securities rank senior to equity securities in that all current payments must be made before equity holders can receive any dividends
* Debt holders must be repaid in full before equity holders can receive anything in the event of the company being liquidated.

1. Factors to consider when choosing the source of financing:

* Cost: cost of different sources of finance will vary over time due to changes in interest rates
* Duration: principle of the maturity matching. i.e. asset and liability maturities should be matched and finance should be raised according to the maturity of the asset(s) to be purchased.
* Borrowing capacity: the firm’s ability to borrow additional loan
* Risk: how uncertain is the environment in which the business operates?
* Flexibility: how flexible is the source of finance?
* Ownership: desire to retain control of the company’s activities may well mean that borrowing is preferred
* Size of industry: firms will be limited in their access to finance due to their size or industry

1. Debt finance is cheaper than equity finance in the following ways:

* Interest is paid out before dividends are paid so there is greater certainty of receiving a return than there would be for equity holder
* If the firm goes into liquidation the holders of the debt type of financial security are paid back before shareholders receive anything
* Low risk and therefore low return

**Question 6**

1. A Merger is a process whereby the assets of the two or more companies are combined into one company. A new company is usually formed, the acquired companies cease to exist as separate entities and the shareholders of the new company are the shareholders of the original companies

An acquisition (or take over) is a transaction in which a company known as the offeror or acquire gains control of the management and assets of another company known as the offeree or target, either directly by becoming the owners of these assets or indirectly by obtaining control of management or by acquiring the majority of the shares.

1. Benefits/expected gains from mergers and acquisitions

* Synergy: if company X is contemplating acquiring company Y the acquisition will be beneficial if the combined company has a value that is greater than the sum of the values of the separate firm
* Revenue enhancement: the combined firms may generate revenues than two separate firms. Increase in revenue may come from market gains, strategic benefits, market power
* Cost reduction: a combined firm may operate more efficiently than two separate firms in several different ways, i.e. economics of scale, economics of vertical integration, complementary resources, lower financing cost
* Lower Taxes: tax gains are powerful incentive for some acquisitions. The possible tax gains from the acquisition include; net operating losses, unused debt capacity, asset write ups, reduction in capital needs

1. Arguments in favour of a purchase of assets includes but not limited to:

* Requires formal vote of the shareholders
* In terms of section 38 of the company’s act, a company is not permitted to provide any form of financial assistance to a buyer of its shares. This may prompt the buyer to buy assets rather than equity of the company
* If assets are purchased the company saves on paying stamp duty on shares
* If the offeror has a low or zero tax rate it may choose to buy the assets
* If the buyer borrows in order to finance the asset the interest on the loan is normally tax deductible
* Assets can be resolved at a higher value and the firm benefits from the lower taxes because of the increased depreciation.

**QUESTION 7**

**To**: Board of Directors

**From**: Finance Manager

**Briefing document**

**Issues that might influence capital structure strategy**

Capital structure strategy is concerned with the relative proportions of equity and debt financing a company’s operations

1. **Features of debt**

**Advantages of debt**

* It has a cheaper direct cost than equity, as it is less risky to the funds provider
* It attracts corporate tax relief, which lowers the costs

**Disadvantages**

* Returns to equity become more volatile, indicating an increase in equity systematic risk (gearing or leverage). As result cost of equity increases.
* At high levels of gearing the company is at high risk of financial distress: the probability of bankruptcy increases, too much management time is used up managing financial emergencies.

1. **Effect on company valuation**

**Modiglian and miller**

This theory shows that under the perfect capital market assumptions that they make, the cheap direct cost of debt will be exactly counter-balanced by the increased cost of equity due to borrowing. It suggests that the only advantage of borrowing is tax relief

**Limitation of M & M**

However in practice at high levels of gearing any further fall in WACC is limited by increases to the costs of both equity and debt that set in because of financial distress. The situation is also complicated by the existence of different personal tax treatment for equity and debt investments that cause the investors to have a preference for one or other type of capital which varies over time and location.

**Traditional theory and optimal gearing level**

Overall, however, the theory’s predictions are not far from those of the traditional view, which predicts that the WACC falls with increasing borrowing at low gearing levels, reaches a minimum and then rises as borrowing exceeds the safety level. If this is true then there should be an optimum level of gearing for each company at which its cost of capital is lowest and in theory companies should aim for this gearing

**Limitations of traditional view**

In practice companies often have lower gearing than would be predicted by these theories. The existence of an optimal gearing is difficult to prove or disprove because a company’s level of borrowing is limited by other factors.

1. **Managers view point**

This is concerned with managerial decision making, human behavior, and existence of information asymmetry between management and shareholders.

**Perking order theory**

Managers use the most convenient sources of funds first. Retained earnings and sale of securities are preferred because no explanation has to be given to shareholders about their use

**Management attitude**

Capital structure can be affected by the attitude of the managers to risk. i.e. a risk averse management may prefer low borrowing

**Conclusion**

Capital structure has been widely debated for half the century and in general there are no easy conclusions. It is clear, though, that provided the basic risks of debt are understood and that funds are obtained at competitive costs, the gains or losses from varying capital structure are not really significant compared with those that result from capital investment decisions.

**QUESTION 9**

1. Calculation of Mean return

0.085 x 0.35 = 0.002975

0.11 x 0.10 = 0.011

0.135 x 0.30 = 0.0405

0.160 x 0.25 = 0.04000

Total 0.12125

**12.125%**

1. Calculating Standard deviation

(0.085 – 0.12125)^2 x 0.35 = 0.00045992

(0.11 – 0.12125)^2 x 0.10 = 0.00001266

(0.135 – 0.12125)^2 x 0.30 = 0.00005672

(0.16 – 0.12125)^2 x 0.25 = 0.00037539

Total 0.00090469

Standard deviation = 0.00090469^1/2

=3.008%

1. **Commentary**

The standard of this asset portfolio is slightly over 3% and a mean return is 12.125%. the 3% is a reflection of the risk inherent in the portfolio. It is a measure of the extent to which the possible outcomes are likely to be different form the mean outcome and finance assumes that this is risk