Lesson - 6

PERATING LEVERAGE AND BREAK - EVEN ANALYSIS

OBJECTIVES:

After studying this lesson, you will be able to understand :

- the concept of operating leverage
 - technique of break even analysis
- the approaches for determination of break even point
- the assumptions and limitations of break even analysis

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| 6.1 | Introduction |
|----------|--|
| 6.2 | Meaning of leverage |
| 6.3 | Types of leverages |
| | Concept of Break - even analysis |
| 6.5 0 | Effect of changes in variables on break - even point |
| . 6.6 | Utility and limitations of break - even analysis |
| 6.7 | Summary |
| 6.8 | Key Words |
| 6.9 | Self - assesment questions |
| | |

Further readings

6.1 Introduction:

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A firm can raise funds for its long - term requirements through equity or debt capital. The use of debt capital for the benefit of shareholders is known as financial leverage. Further, the firm uses assets involving some fixed operating cost that influences the earnings available to equity shareholders. This effect is indicated by operating leverage. In the present lesson, operating leverage and the technique of break - even analysis are explained. In lesson 7 you will have an understanding of financial leverage and EBIT - EPS analysis.

6.2 Meaning of leverage :

The term leverage refers to "an increased means for accomplishing some purpose". For example, leverage helps us in lifting heavy objects, which may not be otherwise possible. In financial management, the concept of leverage has a special meaning.

— Fininancial Management — 6.2 — Operating Leverage... —

Here leverage means the employment of an asset or rource of finance which involves some fixed operating cost or ficad return. This fixed cost or fixed return is the fulcrum of leverage. If a firm is not required to pay fixed cost or return, there will be no leverage. Thus, the Leverage influences the earnings of equity shareholders and the risk to them as well. A higher leverage results in higher earnings and greater risk and vice versa.

6.3. Types of leverages :

Leverages are of three types 1) Operating Leverage, 2) Financial Leverage 3) Combined/Composite Leverage.

6.3.1. Operating leverage :

Operating leverage refers to the use of fixed costs in the operation of a firm. If the firm's total cost comprises fixed cost which does not change with the volume of out put or sales, the operating leverage is said to exist. If there are no fixed costs, there will be no operating leverage.

If a firm has greater amount of fixed costs when compared to variable cost, it will have a higher degree of operating leverage and if the fixed cost is less, it will have a lower degree of operating leverage. Thus, operating leverage increases with fixed cost.

Operating leverage indicates the effects of a changes in sales on operating profit, also known as earnings before interest and taxes (EBIT). It is both favorable and unfavorable. A higher operating leverage indicates that even a small change in sales (increase or decrease) will cause a greater change in operating profit.

6.3.2. Measurement of operating leverage :

The existence of fixed costs in the total cost structure of a firm results in operating leverage. Operating leverage is a function of three factors : total fixed cost, contribution and sales volume. Degree of operations leverage is calculated as follows :

Operating leverage = $\frac{\text{Contribution}}{\text{Operatingprofit}} = \frac{\text{Sales-Variable operatingcosts}}{\text{EBIT}}$

Illustration 1

From the following information compute operating leverage and comment :

Fixed cost = Rs. 50,000; Variable cost = 70% of sales

Sales : Rs. 2,00,000 in the previous year

Rs. 2,50,000 in the current year

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|-------------------------|---|--|--|
| Solution | and of families | | |
| | Previous year Rs | Current year Rs | Percentage change |
| Sales | 2,00,000 | 2,50,000 | 25% |
| Less : Variable cost | 1,40,000 | 1,75,000 | |
| (70% of sales) | | | |
| Contribution | 60,000 | 75,000 | |
| Less : Fixed cost | 50,000 | 50,000 | |
| Operating Profit (EBIT) | 10,000 | 25,000 | 150% |
| Degree of Operating | g leverage = $\frac{\text{Con}}{\text{I}}$ = $\frac{60,0}{10,0}$ | $\frac{\text{tribution}}{\text{EBIT}} = 6$ | o bahaya ng matang ter ang datan Goldan akidishan akada terdi data aki na bahaya dita agab madana aka si terdi kasa terdi dita ang bahaya aka si terdi kasa terdi kasa si terdi |

Comment : The operating leverage of 6 in the above illustation indicates that if sales increase by 1% operating profit shall increase by 6%. Thus, 25% increase in sales has resulted in an increase of 150% in the operating profit.

The degree of operating leverage may also be calculated in a different way. It may be defined as the ratio of percentage change in operating profit to the percentage change in sales. Thus, it is calculated as :

$$\frac{\text{Degree of operating leverage}}{\text{Percentage change in operations profits or EBIT}} = \frac{\frac{\text{Percentage change in operations profits or EBIT}}{\text{Percentage change in sales}}$$
$$= \frac{\Delta \text{EBIT}}{\text{EBIT}} \div \frac{\Delta \text{Sales}}{\text{Sales}}$$

If data from the above illustration is taken, the Degree of operating leverage is as under :

$$DOL = \frac{150\%}{25\%} = 6$$

6.3.4. Utility of operating leverage :

Operating leverage is very useful in ascertaining the effect of a change in sales on operating profit. A high degree of operating leverage indicates that even a small change in sales will have a large effect on EBIT. In other words, a small increase in sales will have larger increase in operating income. This leverage also adversely affects the earnings of the firm. In case of high degree of leverage, even a small fall in sales will result in a greater decrease in operating profit. Since it is very risky, no firm would like to operate under conditions of high degree of operating leverage.

6.3.5 Operating Risk

Opereting risk is the risk of the firm not being ahle to cover its fixed operating Casts. The lager the magnitude of feed operating costs the larger is the vdome of rales to cover all feed Costs. The higher the feed gereting costs, the higher the degree of operating liverage and the higher the Break even volume In this Contect the break even analysin is presented here under.

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6.4 Concept of Break - Even analysis :

Break - even analysis is a widely used technique to study cost, volume and profit relationships. This is a very useful technique that helps the management of a firm in profit planning. In a narrower sense, break - even analysis refers to the technique used for determining that level of activity where total cost equals total revenue. But in a broader sense, it refers to that technique which determines the probable profit at any level of activity. It portrays the relationship between cost of production, volume of production and selling price. Hence, it is also known as cost volume profit analysis (C-V-P Analysis).

Even though break - even analysis and CVP analysis are interchangeably used, there is a slight difference between the two. CVP analysis is broader and it includes the entire gamut of profit planning, while 'break - even analysis' is a techniane used in this process. Hence, CVP analysis is the more appropriate term to be used for studying the CVP relationships. However the term break - even analysis is so popular that these two terms are used as synonymous.

6.4.1. Assumptions of Break - Even analysis :

The technique of break - even analysis is subject to the following assumptions :

- 1. The total cost can be segregated into fixed and variable components.
- 2. Total fixed cost remains constant at all levels of output.
- 3. Variable cost per unit remains constant and total variable cost changes directly in proportion to sales volume.
- 4. Selling price per unit remains unchanged at all levels of output.
- 5. The firm produces, only one product or in case of multiple products, the sales mix remains constant.
- 6. There is synchronisation between production and sales. It means that there will be no opening or closing stock.

6.4.2. Meaning of Break - Even point and its Determination :

The break - even point may be defined as that level of sales volume at which total revenue is equal to total cost. It is a point of no profit or no loss. At this point of sales, the firm's total revenue breaks evenly with total cost, and hence the name. Any increase in sales beyond this point will fetch profits to the firm and if sales fall below this point, the firm will incur loss. Thus, the break - even point is:

Sales revenue = When Total Variable cost + Total fixed cost

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There are two approaches to compute the break - even point

- a) Algebraic Formula Approach, and
- b) Graphic or Chart Approach

a) The Algebraic formula approach :

By using algebraic formula, the break - even point can be computed, i) in terms of units of sales volume ii) in terms of money value of sales volume, and iii) as a percentage of estimated capacity.

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If

| | F | 27년 11일 년 11년 - 11일 년 11일 | Total fiad costs |
|-------|------------|------------------------------|---|
| | v | = | Variable cost per unit |
| | Ρ | - | Prica per unit |
| | Q | ~ 슬 기 가지 | quality reld |
| | TR | = | total revenue |
| | TC | = | Total cost |
| The | en• | | |
| | TR | | Price per unit x quality sold = $P.Q$ |
| | TC | · - · · · | Total variable cost + Total fiad cost |
| | | = | {Variable cost per unit x paantity old} + Total |
| If | | | |
| | F | | Totalfiard costs |
| | V | िलाज = २ | Variable cost per unit |
| | Р | = | Price Per unit |
| | Q |)= | Quantity rold |
| | TR | = | Total revence |
| | TC | | Total Cost |
| | Them | | |
| | TR | = | Price per unit X Quantity Sold P.Q |
| | TC | = | Total Variable cost + Total Fiad Cost |
| | | = | (Variable cost per unit X Quantity sold) + total fixed cost |
| | | n∰aara 1 | V.Q + F |
| at tl | n eak even | point of | sales total revence is iqual to total cost therefore |

TR = TC P.Q = V.Q + F PQ - VQ = F

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Q[P-V] = F

$$Q = \frac{F}{P - V} = \frac{F}{C}$$

Here, Q is the break even rales

F is the total Final cost

P is the Price per unit

V is the Variable cost per unit

C is the Cantritution per unit

i) Break - Even point (in units) :

Break - even point is a point of no profit or no loss. It can be calculated with the help of the following formula:

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- Operating Leverage... -

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11

Break - even point (in units) = $\frac{\text{Fixed cost}}{\text{Contribution per unit}}$

Where, contribution per unit = Selling price per unit - Variable cost per unit

Since total contribution is equal to total fixed cost at break - even point, fixed cost is divided by contribution per unit to get the break - even point in units.

ii) Break - Even point (in rupees) :

Break - even point in rupee value can be calculated with the help of following formula :

a) Break - even point (in rupees) =
$$\frac{F}{P-V} = P$$

Where, F = Fixed cost

P = Selling price par unit

 υ = Variable cost per unit

b) Break - even point can also be calculated as follows

Break - even point (in rupees) = $\frac{\text{Fixed cost}}{\text{P/V Ratio}}$

Where, P/V Ratio

It is a ratio between contribution and sales. Which is also known as conntribution ratio This ratio indicates the extent to which sales will contribute to meet fixed cost up to break - even point and to total profit of the firm after break - even point. It is calculated as :

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$$P/V$$
 Ratio = $\frac{P-V}{P} \ge 100$ or $\frac{C}{P} \ge 100$

Where, P = Price, V= Variable cost C = P - V = Contribution

Since, C = P - V and $\frac{V}{S}$ represents variable cost to sales ratio, the P/V ratio can also be calculated as below :

6.7

P/V Ratio = $1 - \frac{V}{P}$ or 1-Variable cost ratio.

Thus, if variable cost ratio is 60% or .6, then P/V ratio will be 40% or .4.

Illustration 2:

Calculate the break - even point in units and in sales value from the following data :

| Sales | = | 3000 units |
|-------------------------|-------------------------------------|------------|
| Selling prince per unit | | Rs. 30 |
| Variable cost per unit | | Rs. 20 |
| Fixed cost | . 1997 - 19 19 - 1 9 - 19 | Rs. 20,000 |

Solution :

Fixed cost Break - even point (in units) = $\frac{1}{2}$ er unit

$$=\frac{\text{Rs } 20,000}{\text{Rs } 30-20}$$

$$=\frac{\text{Rs } 20,000}{10} = 2000 \text{ Units}$$

Break - even point in rupees $= \frac{\text{Fixed cost}}{S - V} \times S$ $S = Selling price per unit_...$ Where

V = Variable cost per unit

:. Break – even sales =
$$\frac{\text{Rs } 20,000}{30 - 20} \times 30$$

= Rs.60.000

= 2000 units x Rs 30

= Rs 60,000

iii) Break - Even point as a percentage of estimated capacity :

Break - even sales can also be expressed as a percentage of estimated capacity of the firm. It is calculated as :

Break - even point (as percentage of capacity) = $\frac{\text{Break} - \text{even sales}}{\text{Estimated capacity}} \times 100$

Illustiation 3 :

Total estimated capacity = 1,00,000 units,

Break - even point = 60,000 units, then find out

break - even point as percentage of estimated capacity.

Solution :

Break - even point (as percentage of capacity) =
$$\frac{\text{Break} - \text{even point}}{\text{Estimated capacity}} \ge 100$$

= $\frac{60,000 \text{ units}}{1,00,000 \text{ units}} \ge 100$
= 60%

b) Graphic or Chart Approach :

The break - even point can also be shown graphically. A break - even chart portrays a pictorial view of the relationship between costs, volume and profits. The break - even chart shows that the break - even point occurs where the total cost line and total revence, line intersect each other. This chart also shows not only the break - even point but also the profit or loss at various levels of sales.

The break - even chart is drawn by following the steps given below :

1. Volume of output sales (units or rupees) is presented on horizontal axis or x- axis

2. Costs and sales revenue are plotted on vertical or y- axis

3. Fixed cost line is drawn parallel to x-axis as fixed costs remain constant at all levels of activity.

- 4. Total cost line is drawn starting at fixed cost line touching the y- axis
- 5. Total revence line is drawn starting at the origin of the two axes.

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The mechanism of constructing the break - even chart can be illustrated by using the following data :

Price Per unit = Rs 2

Variable cost : Rs 1.20

Fixed $cost = Rs \ 40,00,000$



Fig. 6.1 Break Even Chart

Fig.1 shows that the break even point occurs at the point of intersection between total revence and total cost lines. The break - even point for the above firm occurs at sales level of Rs. 5 Lakhs Units. The area to the left of the break - even point represents loss zone and the area to the right represents profit zone.

Angle of Incidence : The angle formed at the point of intersection between total cost line and total sales line is known as the angle of incidence. This angle is significant because it gives us an idea about the profitability of the firm after break - even point. If this angle is larger, the break - even point will be lower and the profitability will be greater after break - even point and vice versa.

Margin of safety :

The excess of actual or budgeted sales over the break - even sales is known as the margin of safety In the above illustration, margin of safety is 5 lach units, it acted sales is 10 lach units

The margin of safety can be expressed as a percentage of sales :

The margin of safety indicates the extent to which sales may fall before the firm incurs a loss. A high margin of safety indicates a high degree of safety for the firm.

Illustration 1

From the following particulars, calculate i) P/V Ratio ii) Break - even point (in units), and iii) Break - even point (in rupees.)

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| Fixed costs | : | Rs. 1,50,000 |
|------------------------|---|--------------|
| Variable cost per unit | : | Rs.10 |
| Selling price per unit | : | Rs. 15 |

Solution :

i) P/V Ratio =
$$\frac{\text{Contribution}}{\text{Sales}} \times 100$$

Contribution = Selling price - Variable cost per unit

$$= Rs 15 - Rs 10 = Rs 5$$

: P/V Ratio =
$$\frac{\text{Rs.5}}{\text{Rs.15}} \times 100 = 33\frac{1}{3}\%$$

| ::) Devel- and against in white | _ Fixed cost | |
|---------------------------------|-----------------------|--|
| ii) Break - even point in units | Contribution per unit | |
| | _ Rs. 1,50,000 | |
| | Rs 5 | |
| | = 30,000 Units | |

Fixed cost

P/V Ratio

iii) Break - even point (in rupees)

Illustration 2

From the following particulars calculate :

- 1) Break even point
- 2) Margin of safety
- 3) Sales required to earn a profit of Rs. 1,50,000

4) Profit when sales are of Rs. 10,00,000

5) Margin of safety available, if the company is earning a profit of Rs. 2,00,000

| Fixed costs | í .: ¹ | Rs. 1,50,000 |
|-------------|-------------------|--------------|
| Profit | • | Rs. 1,00,000 |
| Sales | : | Rs. 5,00,000 |

Solution :

1) Break - even point (in rupees) = $\frac{\text{Fixed cost}}{\text{P/V Ratio}}$

 $P/V \text{ Ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100$

Contribution = Fixed cost + Profit = 1,50,000 + 1,00,000 = 2,50,000

:. P/V Ratio = $\frac{2,50,000}{5,00,000} \times 100 = 50\%$

Hence, break - even point = $\frac{\text{Rs. } 1,50,000}{50\%}$ or $\frac{1,50,000}{50}$ = Rs 3,00,000 2) Margin of safety = Total sales Break - even sales = Rs 5,00,000 - Rs 3,00,000 = Rs. 2,00,000

3) Sales required to earn a profit of Rs. 1,50,000-

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Sales to earn targeted profit =
$$\frac{\text{Fixed cost} + \text{Target profit}}{\text{P/V Ratio}}$$

 $= \frac{\text{Rs. } 1,50,000 + 1,50,000}{50\%}$ $= \frac{\text{Rs. } 3,00,000}{50} \times 100$ = Rs 6,00,000

6.12

- Operating Leverage... -

4) Profit when sales are Rs. 10,00,000

Profit = (Sales x P/V Ratio) - Fixed cost
= (Rs 10,00,000 x
$$\frac{50}{100}$$
) - Rs. 1,50,000
= Rs 5,00,000 - Rs. 1,50,000
= Rs. 3,50,000

5) Margin of safety when profit is Rs. 2,00,000

Margin of safety =
$$\frac{\text{Profit}}{\text{P/V Ratio}}$$

= $\frac{\text{Rs. } 2,00,000}{50} \times 100$
= $\text{Rs. } 4,00,000$

Illustration 3

The following figures of sales and profits for two periods are available in respect of a firm :

| | Sales | Profit |
|-----------|------------|--------|
| Period I | . 1,00,000 | 15,000 |
| Period II | 1,20,000 | 23,000 |

You are required to calculate :

a) P/V-Ratio

b) Break - even point

c) Sales required to earn a profit of Rs. 20,000

d) Profit at estimated sales of Rs. 1,50,000

e) Margin of Safety at a profit of Rs 50,000

6.13

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Solution :

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a) P/V Ratio =
$$\frac{\text{Change in profits}}{\text{Change in Sales}} \times 100$$

$$= \frac{23,000 - 15,000}{1,20,000 - 1,00,000} \times 100$$
$$= \frac{8000}{20,000} \times 100 = 40\%$$

b) Break - even point $= \frac{\text{Fixed cost}}{P/V \text{ Ratio}}$

As fixed cost is not given, it should be computed. Take data of one period and calculate the fixed cost in the following manner.

Profit = (Sales x P/V Ratio) - Fixed cost \therefore Fixed cost = (Sales x P/V Ratio) - profit = (1,00,000 40%) - 15,000 = 40,000 - 15,000 = 25,000

: Break - even point =
$$\frac{\text{Rs. } 25000}{40\%}$$

= $\frac{25000}{40} \times 100$
= Rs. 62,500

c) Sales required to earn a profit of Rs. 20,000

Sales for targeted profit = $\frac{\text{Fixed cost} + \text{Desired profit}}{P/V \text{ Ratio}}$ $= \frac{\text{Rs} 25,000 + 20,000}{40\%}$ $= \frac{45,000}{40} \text{ x 100 = Rs. 1,12,500}$

d) Profit when sales are Rs. 1,50,000

Profit = (sales x P/V Ratio) - Fixed cost

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$$= (1,50,000 \times \frac{40}{100}) - 25,000$$
$$= 60,000 - 25,000$$
$$= \text{Rs. } 35,000$$

e) Margin of safety at a profit of Rs. 50,000

Margin of safety =
$$\frac{\text{Profit}}{\text{P/V Ratio}}$$

$$=\frac{50,000}{40\%}$$
 = Rs.1,25,000

6.5 Effect of changes in Fixed cost :

Break - even point of a firm are is affected by the changes in fixed cost.

An Uncrease is Fieed cost results is the lercrease of break even point. The minimum quantity required to recover all costs rises

6.14



Operating Leverage... -

- C.D.E -

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In Fig 6.2 TC, is the imitial to tal cost, TR is the to the revece and BEO is break even quantity when fieed cost is F_1 .

6.15

When fieed cost uncreased from F_1 to F_2 the total cost carve shifted free TC₁ to TC₂. Break even point nereed to point 'B' from 'A' Break even quantity increased from BEO₁ to BEO₂

Similary, if fieed cost decreased from F_2 to F_1 the total cost carve shifts free TC_2 to TC_1 movery the break even ponto BEO₁ from BEO₂

Effect of changes in fixed costs :

A change in fixed costs does not affect P/V ratio. Other factors remaining constant, a decrease in fixed costs will lower the break - even point and raise the profits. On the other hand, an increase in fixed costs will result in a higher break - even point and lower amount of profits.

The effect of the changes in these factors can be shown with the the help of the following illustration:

Illustration 4:

ABC Ltd has prepared the following budget estimates for the year 2003 - 2004 :

| Sales | : | 15,000 units |
|----------------|---|---------------|
| Fixed expenses | : | Rs. 34,000 |
| Sales | • | Rs. 1,50,000 |
| Variable costs | | Rs 6 per unit |

You are required to :

i) find out the P/V Ratio, break - even point and margin of safety.

ii) Show the effect of increase in fieed cost by Rs 6000 break - even point and margin of safety :

Solution :

| i) When the $F = Rs 34,000$ | | | |
|-----------------------------|--------------|---|--------------|
| Sales | | : | Rs. 1,50,000 |
| Less Variable cost (15000 | x Rs 6) | | 90,000 |
| | Contribution | • | 60,000 |
| | Rs | | |
| Price per unit | : 10 | | |
| Legs Varable cost per unit | : 6 | | |
| Cantribution per unit | : 4 | | |

- Fininancial Management -

- Operating Leverage... -

Break even antity = $\frac{F}{P-V}$ = $\frac{34000}{10-6}$ = 8500 Units

Margine of Safcty

= Actual Sales - Break Evesn Seles

6.16

= 15000-8500

= 6500 units

(ii) when to Fincreases by Rs 6000

 $BE\phi = \frac{40000}{4} = 10,000$ Units

Marging Sagety = Actiul Sales - Break even Sales

= 15000 - 10000

= 5000 units

When the fieed cost uncreesed fran Rs 34000 toRs 40000 the break even point also rose from 885000 units to 10,000 units. The nearger of safety decreesed from 6500 units to 5000 units similarly, if fieed cost decreases from Rs 40,000 to Rs 36000, break even quantity decreases from 10000 units to 8500 units.

6.6 Utility and limitations of Break - Even analysis :

Break - even analysis is a very useful technique of profit planning and control for managers. It has the following advantages.

- 1) It is a simple technique to understand the accounting data for those business executives who are unable to understand financial statements.
- 2) It helps the management in identifying causes of increasing break even point and falling profits and the measures to be taken
- 3) It provides the basic information that enables the management to further investigate the ways for profit improvement.
- 4) It helps in considering the risk implications of alternative actions of profit planning.

Limitations :

Break - even analysis is a useful technique which helps the management in its profit planning. But, it is based on certain assumptions which limit the utility and the applicability of this technique. These limitations should be considered while using this technique to get meaningful results. The CVP analysis suffers from the following limitations :

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1) One important assumption of break - even analysis is that costs can be separated into fixed and variable components. But this classification is not always possible. Most of the expenses belong to mixed category.

6.17

- 2) Total fixed costs do not remain constant at different level, of output. In practice, they are constant over a relevant range of output and would increase in a step wise fashion.
- 3) The assumption of a constant variable cost per unit is unrealistic. Total variable costs do not change proportionately to output.
- 4) The assumption of a constant selling price may be valid under conditions of perfect competition. But under imperfect market conditions selling price should be reduced to sell more units of output.
- 5) The break e_1 en analysis is best suited for a single product firm. But it is difficult to use this technique for a multi product firm. The break even point for a multi product firm as a whole is valid only if the sales mix is constant.
- 6) The break even analysis is short term technique of profit planning and has a limited use in long range planning.
- 7) The break even analysis is a static tool. It shows the relationship between costs, volume and profit of afirm at a given point of time assuming that costs and sales to be static.

6.7 Summary :

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In financial management, leverage refers to the employment of an asset or source of funds for which the firm pays a fixed cost or return. Leverages are of three types - operating leverage, financial leverage and composite leverage.

Operating leverage refers to the use of fixed costs in the operation of a firm and indicates the effect of a change in sales on EBIT.

Break - even analysis or CVP analysis shows the relationship between costs, volume and profit. Break - even point is that level of activity or volume of output at which there is no profit or loss. Break - even analysis is a very useful technique to help the management in profit planning. In spite of its limitations, it is a very popular technique in ascertaining cost, volume and profit relationships.

6.8 Key words :

Leverage : The employment of an asset or source of funds for which a fixed cost or return paid.

Operating leverage : The existence of fixed costs in the cost structure of the firm.

Degree of operating leverage : The percentage change in operating income in response to a percentage change in sales

Break - even point : The level of activity or output at which there is no profit or loss.

P/V Ratio : A ratio between contribution and sales.

— Fininancial Management — 6. 18)

- Operating Leverage... -

Margin of safety : The difference between total sales and break - even sales. It indicates the quantum of sales, the firm can afford to lose before incurring any loss.

Angle of incidence : The angle formed at break - even point between total sales and total cost lines. It indicates the profit making capacity after break - even point.

6.9 Self - assessment Questions :

1) What is Operating Leverage ? How does it help in magnifying earnings of a firm ?

2) What is break - even analysis ? Explain the assumptions and limitations of the technique.

3) What is break - even point ? How is it calculated ?

4) What is break - even chart ? Explain different methods of constructing break - even chart.

5) Explain the following concepts ?

a) P/V Ratio b) Margin of safety c) Angle of incidence

6.10 Further readings :

| 1. | James C. Van Horne | Financial Management |
|----|--------------------|----------------------|
| 2. | Khan and Jain | Financial Management |
| 3. | Pandey I.M. | Financial Management |