

Introduction to Cost Accounting

Dr. Varadraj Bapat
Indian Institute of Technology,
Mumbai

varadraj@som.iitb.ac.in

9892413119

Dr. Varadraj Bapat

- **CA., CWA., M.Com., DISA, PhD.
School of Management**
- **Indian Institute of Technology, Mumbai**
- Teaching Interests: Financial Accounting, Management Accounting, Indian Economy
- Research Interests: Financial Accounting, Financial Inclusion, Corporate Finance
- Others: Yoga, Spirituality, Sanskrut, Bharatiya Sanskriti, ABVP

Cost Accounting

- ◆ Cost Accounting
- ◆ Cost
- ◆ Classification of Cost
- ◆ Product Cost
- ◆ Period Cost

STREAMS OF ACCOUNTING

- Financial Accounting, Cost Accounting and Management Accounting
- the similarities and difference in these three streams of accounting



FINANCIAL ACCOUNTING

- Recording of Financial Transactions
- Summerising
- Reporting - Preparation of Financial Statements
- Targeted to External Users



COST ACCOUNTING

- Recording of Costs
- Analysis of Costs
- Preparation of Cost Statements
- Targeted to Internal Users



MANAGEMENT ACCOUNTING

- Recording of Financial & other data
- Analysis of Financial and other information
- Preparation of Statements for Managerial Decisions



Cost Accounting

Cost accounting involves recording, controlling, estimating and reporting for costs.

Cost Accounting

Cost accounting process begins with the recording of expenditure or the bases on which they are calculated and ends with the preparation of statements for ascertaining and controlling costs.

Objectives:

The main objectives of Cost Accounting are as follows:

1. Ascertainment of cost
2. Cost control and cost reduction

Cost Accounting Objectives:

3. Assisting management in decision-making including pricing, profit planning, budgeting

Advantages

1. Helps in identifying unprofitable activities, losses or inefficiencies in any form.
2. Application of cost reduction techniques, operation research techniques and value analysis technique

COST

Anything incurred during the production of the good or service to get the output into the hands of the customer.



Factory



Production



Consumer

WHAT IS COST?

A cost can be defined as the amount of resources given up in exchange for any goods or service.

COST

e.g.

Material cost, Labour cost,
electricity cost, fuel cost etc.

COST

Capitalised Cost:

The cost incurred on fixed assets are capitalised cost. E.g. cost incurred to purchase machineries. These cost are not covered here, except which is subsequently treated as expenses (depreciation).

Cost Classification

- By elements
- By function
- As direct and indirect
- By controllability
- By normality
- By variability
- By relevance

By Nature or Element

Under this classification the costs are divided into three categories i.e. material cost, labour cost and expenses.

ELEMENTS OF COST



Material



Labour



Expenses

Material

The cost which is incurred on physical substance or thing.

e.g. Components or raw materials purchased

Labour

The cost incurred on human efforts. e.g.
??

Labour

The cost incurred on human efforts. e.g.

Salary, Wages, Bonus,
Incentives, Retirement Benefits,
Perquisites

Expenses

The cost incurred for services.

Expenses are other than material and labour are covered here.

e.g. ??

Expenses

The cost incurred for services.

Expenses are other than material and labour are covered here.

e.g. Electricity expenses, Rent, Telephone

By Function

In this classification costs are divided according to the function for which they have been incurred. They include ??

By Function

In this classification costs are divided according to the function for which they have been incurred. E.g. production cost, office & administration cost, selling & distribution costs

By Function

Production cost: materials, direct labour, stores overheads etc.

Office & administration cost: cost of formulating policy, directing the organisation and controlling the operations. E.g ??

By Function

Selling and distribution expenses or marketing cost: expenditure incurred generating demand, on moving articles to prospective customers etc.

DIRECT COST

Direct costs are costs which can be easily attributed to a particular cost center/ product.
e.g.- the cost of hard disks while assembling an PC.

INDIRECT COST

Cost that must be allocated in order to be assigned to a product or department. This cannot be assigned directly to any particular cost centre.

e.g. ??

INDIRECT COST

Eg.

Costs incurred by the computer maintenance and support group, wages paid to security staff, storage cost of units produced.

By Variability

According to variability classification cost are classified into three groups viz. fixed, variable and semi-variable.

VARIABLE COST

Variable Costs are those costs that vary directly and proportionately with the output. There is a constant ratio between the change in cost and change in the level of output.

Examples

VARIABLE COST

Examples of variable cost are direct wages, direct material, Petrol cost for vehicle.

FIXED COST

Fixed Cost is a cost which does not change in total for a given time period despite wide fluctuations in output or volume of activity.

Examples

FIXED COST

Fixed Cost

Examples are rent, property,
taxes

FIXED AND VARIABLE COSTS

Cost	In Total	Per Unit
Variable	Changes as activity level increases.	Remains constant as activity level increases
Fixed	Remains constant as activity level increases	Reduces as Activity level increases

Semi-variable Cost

These costs contain both fixed and variable components and thus partly affected by fluctuation in the level of activity.

Examples

Semi-variable Cost

Examples of semi variable costs are telephone bill, electricity, Maintenance.

Example

A company has prepared budget for July and Aug 2013.

Particulars	1000 Units	2000 Units
Direct Material	50000	100000
Direct Labour	28000	56000
Rent of the factory	75000	75000
Power	35000	50000
Maintenance	17000	26000

By Controllability

Costs here may be classified as controllable and un-controllable cost. Controllable costs are the cost which can be influenced by an action of the specified member of the undertaking. Uncontrollable cost are those which are not controllable.

By Controllability

The distinction between controllable and uncontrollable costs is not very sharp.

In fact no cost is uncontrollable; it is only in relation to a particular individual that we may specify a particular to be either controllable or uncontrollable.

By Controllability

For example, expenditure incurred by tool room is controllable by foreman in-charge of that section but share which is apportioned to machine shop can not to be controlled by machine shop foreman.

By Normality

According to this basis cost may be categorized as normal Cost and abnormal cost. Normal cost is normally incurred at a given level of output under the conditions in which that level of output is normally attained.

By Normality

And cost which is abnormally incurred is called as abnormal cost.

e.g. cost of material which is evaporated is normal loss where as goods lost by fire or theft is treated as abnormal loss.

By relevance

Relevant costs are those future costs which differ between alternatives. Relevant costs may also be defined as the cost which are affected and changed by a decision.

By relevance

Sunk costs are all costs incurred in the past that cannot be changed by any decision made now or in the future. Sunk costs should not be considered in decisions.

e.g. cost incurred on research of a product will be irrelevant while

By relevance

making decision whether to undertake production or not, in make or buy (the raw materials) decision cost of the material, wage rate will be relevant on the other hand factory rent will be irrelevant

DIFFERENTIAL COSTS

Differential cost is the difference between any two alternatives. Differential costs are equal to the additional variable expenses incurred in respect of the additional output, plus the increase in fixed costs if any

OPPORTUNITY COSTS

Opportunity cost is the cost of opportunity lost. It is the cost of selecting one course of action in terms of opportunity which are given up to carry out that course of action. Opportunity cost is the benefit lost by rejecting the best competing alternative to one chose.

The benefit lost is usually the net earnings or profit that might have been earned from rejected alternative.

For example

if we invest 1 lakh in a business then the opportunity cost would be the amount of interest that money would have earned if it was in bank,

An individual is earning Rs. 2.5 lakhs in year, now if he think to start his own proprietary business of computer maintenance, his opportunity cost will be 2.5 lakhs per annum.

MARGINAL COSTS

Marginal cost is the extra cost incurred to produce one additional unit

AVERAGE COSTS

Average cost is the total cost to produce a quantity divided by the quantity produced.

PRODUCT COST

Product Cost is the cost incurred to make or manufacture the product and sell it. These are also known as inventoriable costs.

eg

PERIOD COSTS

Period Costs are the costs which are charged as expenses against the revenue of the period in which they are incurred. These costs are treated as expenses of the period in which they are incurred.

eg

Module 12.

Cost Volume Profit Analysis

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Cost Volume Profit (CVP)

- Introduction
- Fixed costs
- Variable costs
- Semi variable costs
- Contribution margin
- Break even point
- PV Ratio

CVP Analysis

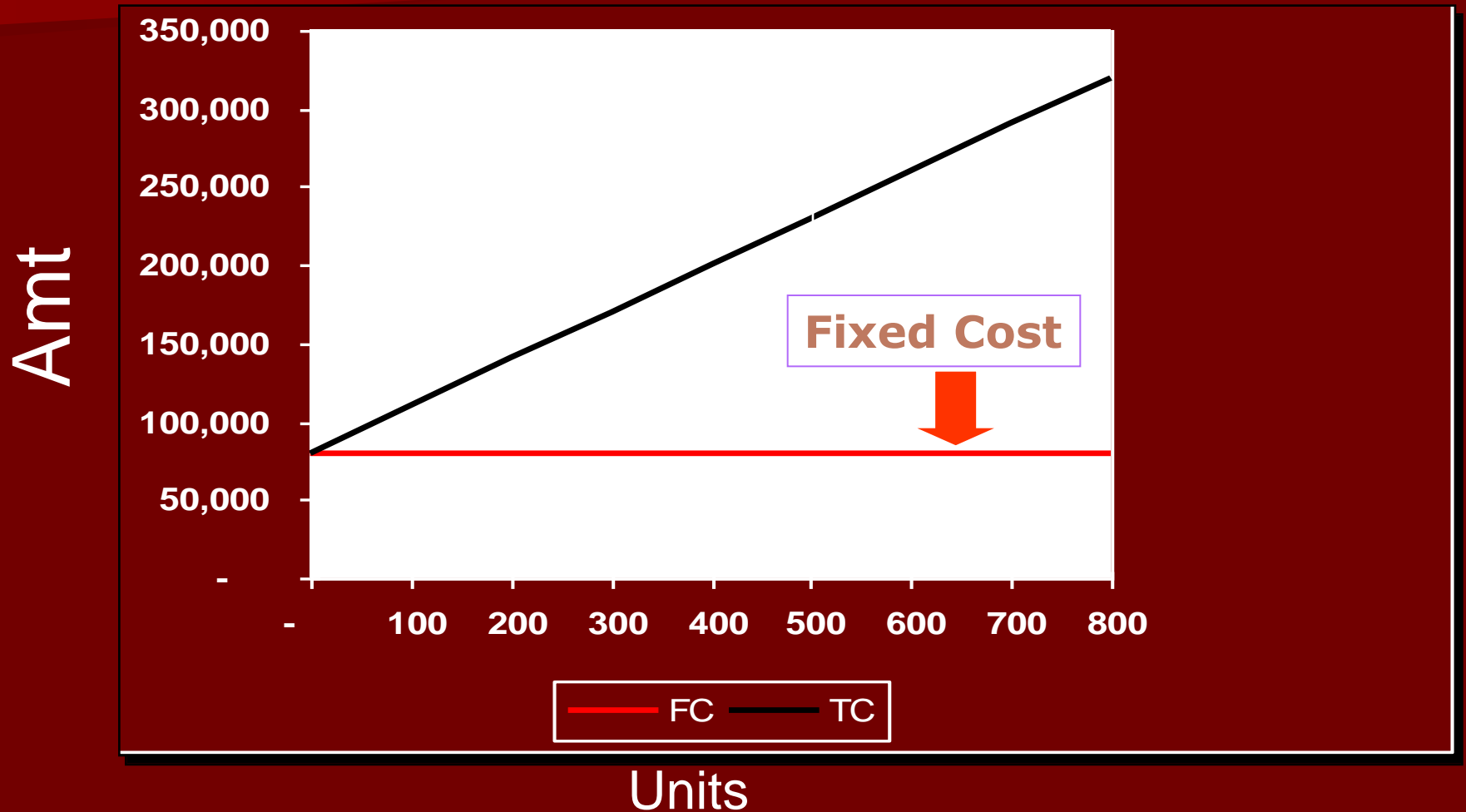
CVP analysis is the analysis of three variable viz. cost, volume and profit. Such analysis explores the relationship existing amongst costs, revenue, activity level and resulting profit. It aims at measuring variation of cost with profit.

Fixed Cost

These are the costs which incurred for a period and which within certain output and turnover limits, tend to be unaffected by fluctuations in the levels of activity (Output or turnover).

For example: Rent, insurance of factory building etc. remain the same for different levels of production.

Fixed Cost Graph

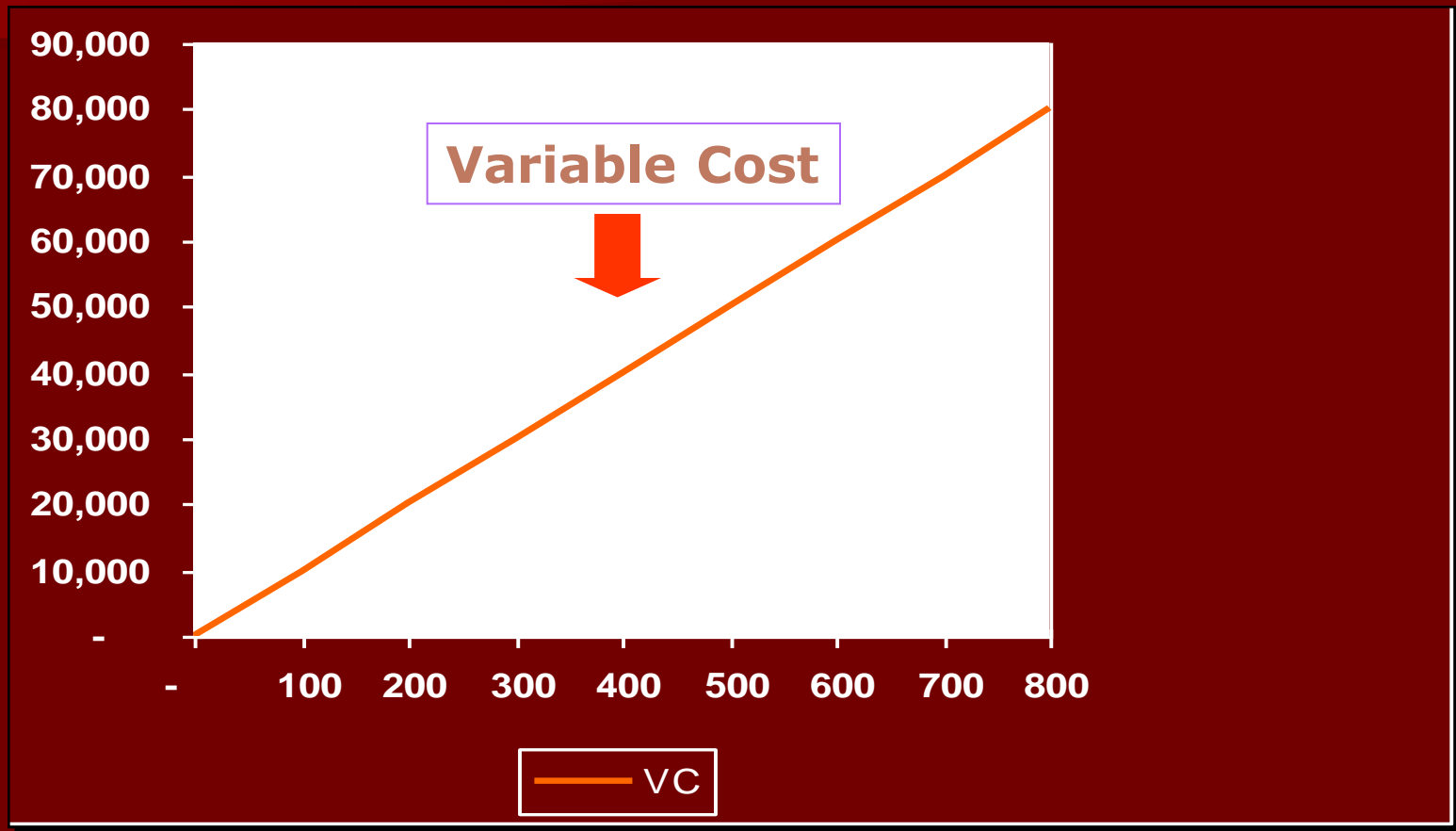


Variable Cost

These costs tend to vary with the volume of activity. Any increase in activity results in an increase in the variable cost and vice versa.

For example: Cost of direct labour, direct material, etc.

Variable Cost Graph



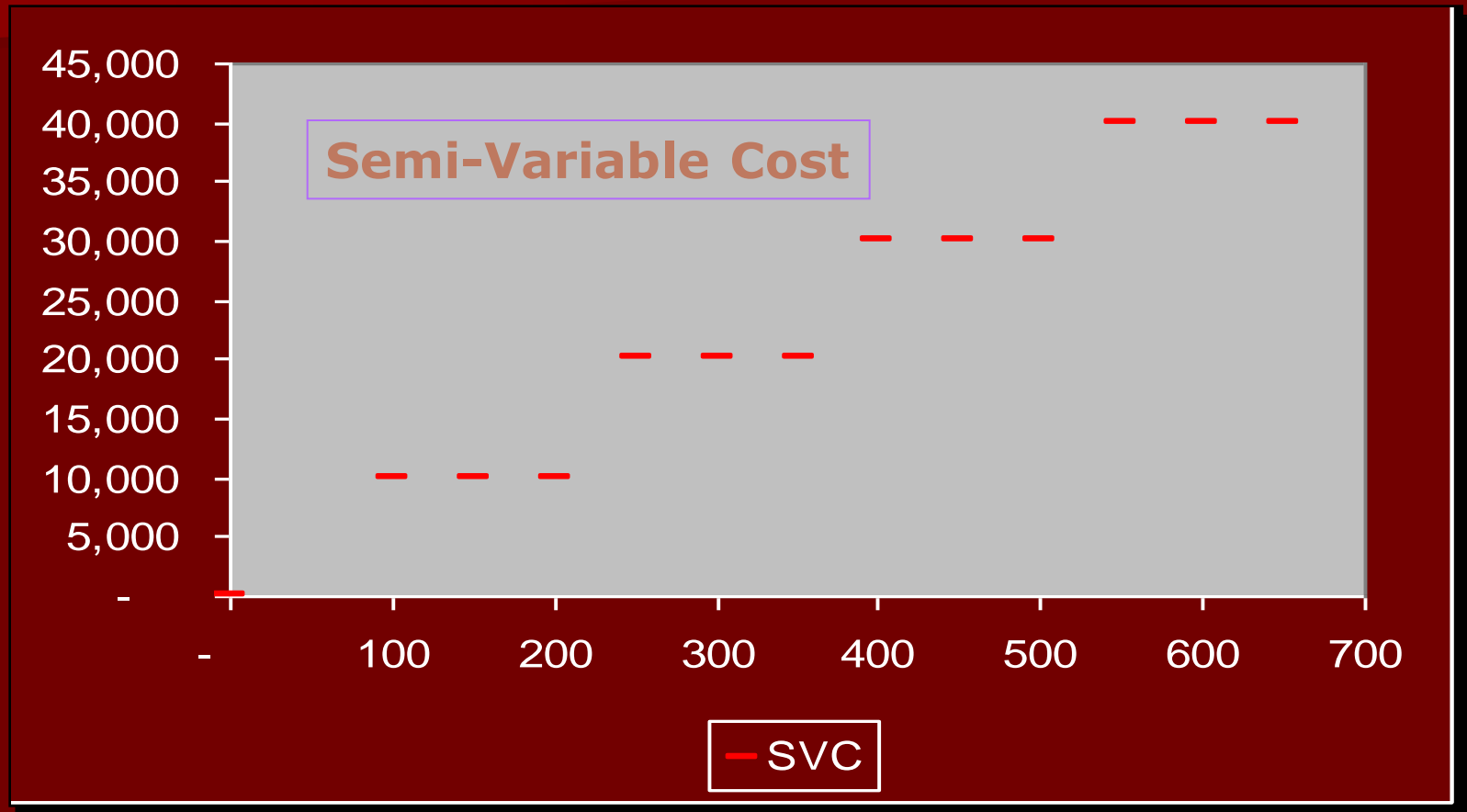
Units

Semi-Variable Cost

These costs contain both fixed and variable components and thus partly affected by fluctuation in the level of activity.

Examples of semi variable costs are telephone bill, gas and electricity etc.

Semi-Variable Cost Graph



Units

Cost-Volume-Profit Analysis

CVP analysis:

- Takes into account
 - the total costs (fixed and variable)
 - the total sales revenues
 - desired profits vis-a-vis the sales volume

It is used for forecasting or predicting how the changes in costs and sales volume affect profit. It is also known as 'Break-Even Analysis'. CVP analysis could be helpful in the following situations:

Budget planning: for forecasting profit by considering cost and profit relation, and volume of production volume. This will help in determining the sales volume required to make a profit.

–To make decisions regarding pricing and sales volume.

Determining the sales mix of different products, in what proportions each of the products can be sold.

- Preparing flexible budget considering costs at different levels of production

Objectives of CVP Analysis

- Understand the interaction among
 - Prices of products
 - Volume or level of activity
 - Per unit variable cost
 - Total fixed cost
 - Mix of product sold

Assumptions of CVP Analysis

- Expenses can be classified as either variable or fixed.
- CVP relationships are linear over a wide range of production and sales.
- Sales prices, unit variable cost, and total fixed expenses will not vary within the relevant range.

- Volume is the only cost driver.
- The relevant range of volume is specified.
- Inventory levels will be unchanged.
- The sales mix remains unchanged during the period.

Calculations

❖ Profit Equation and Contribution Margin

1. Profit = Sales - Total costs

2. Profit = Sales - Total variable costs -
Total Fixed costs

3. Contribution margin = Total revenue –
Total variable costs

Sales	XX
-Variable Cost	<u>(XX)</u>
Contribution	XX
-Fixed Cost	<u>(XX)</u>
Profit	XX

- Profit = $(S-V)*Q - FC$
- $Q = \frac{(FC + \text{Expected Profit})}{(S-VC)}$
- Q is the no. of units required to be sold to obtain target profit.
- S=Selling Price p.u. VC=Variable cost p.u. FC=Fixed Cost

Example:

Suppose that Super Games wants to produce a new toy bike and has forecast the following information.

- Price per bike = ₹ 800
- Variable cost per bike = ₹ 300
- Fixed costs related to bike production = ₹ 55,00,000
- Target profit = ₹ 2,00,000
- Estimated sales = 12,000 bikes

We determine the quantity of bikes needed for break even and the target profit as follows:

We determine the quantity of bikes needed for the target profit as follows:

- Break Even $Q = 11000$ bikes
- $Quantity = (\text{₹}55,00,000 + \text{₹}2,00,000) / (\text{₹}800 - \text{₹}300) = 11,400$ bikes

Profit Volume Ratio (PV)

The contribution margin ratio (CMR) i.e. PV ratio is the percentage by which the selling price (or revenue) per unit exceeds the variable cost per unit, or contribution margin as a percentage of revenue.

Example

For Hero1, we could use the forecast information about volume (12,000 bikes) to determine the contribution margin ratio.

- Total revenue = `800 * 12,000
= ` 96,00,000

- Total variable cost
 $= ₹ 300 * 12,000 = ₹ 36,00,000$
- Total contribution margin =
 $₹ 9,600,000 - ₹ 3,600,000 =$
 $₹ 6,000,000$
- Contribution margin ratio =
 $₹ 6,000,000 / ₹ 9,600,000 = 0.625$

BEP analysis

- Breakeven analysis is used to find the minimum level of production required
- Evaluates both fixed and variable costs

■ Uses:

1. To find a suitable product mix
2. To find the sales required to reach a desired revenue.
3. The profits at certain price level and sales

Break even Point (BEP)

- A CVP analysis can be used to determine the BEP, or level of operating activity at which revenues cover all fixed and variable costs, resulting in zero profit.
- In other words this is the point where no profit or losses have been made

Break even Applications

- Pricing decisions:- Enables to study the effect of changing price and volume relationship on total profits.
- **Make or Buy Decision:-**
- **Temporary Shut Down:-**

- **Modernizations or automation decisions:-** Analysis the profit in implication of a modernization or automation programme.
- **Expansion Decisions :-** studies the aggregate effect of a general expansion in production and sales.
- **New Product decisions :-** Enables to determine the sale volume required for a firm (or an individual product) to breakeven , given expected sales price and expected costs.

Formulae

- BEP in units =
$$\frac{\text{Total fixed costs}}{(\text{Sales price} - \text{variable cost p.u.})}$$
$$= \frac{\text{Fixed cost}}{\text{Contribution per unit}}$$
- BEP in sales value =
$$\frac{\text{Fixed cost}}{\text{PV Ratio}}$$

Example

- Sales 5000 units
- Sales price per unit Rs. 50
- Variable cost per unit Rs. 30
- Fixed cost Rs. 35000
- Therefore, contribution per unit = $50 - 30 = \text{Rs. } 20$

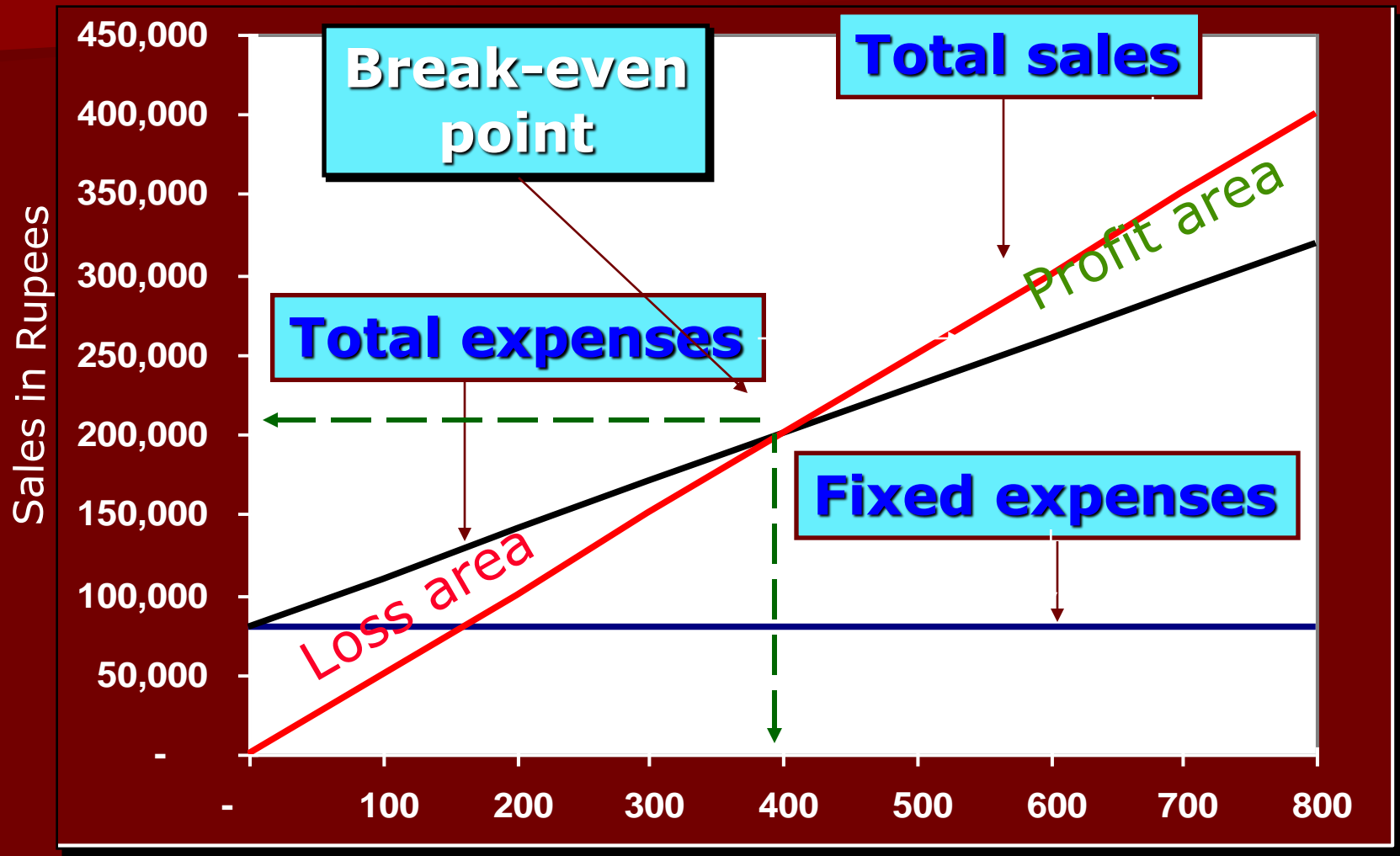
$$\begin{aligned}\text{BEP in units} &= 35000/20 \\ &= 1750 \text{ units}\end{aligned}$$

$$1750 * 50 = \text{Rs. } 87500$$

- BEP in sales value = $1750 * 50 =$
Rs. 87500

- $= 35000 * 20 / 50$
 $= \text{Rs. } 87500$

Cost-Volume-Profit Graph



Margin of safety

- Represents the strength of the business
- $\text{Margin of Safety} = \text{Actual Sale} - \text{BEP Sale}$
- $\text{Margin of safety}\% = (\text{Sales} - \text{BEP}) / \text{Sales} \times 100$

- Margin of safety = $\frac{(5000-1750)}{5000}$
=65%
- Hence even if the sales decrease by 65%, the business wont face any loss

Thank You!