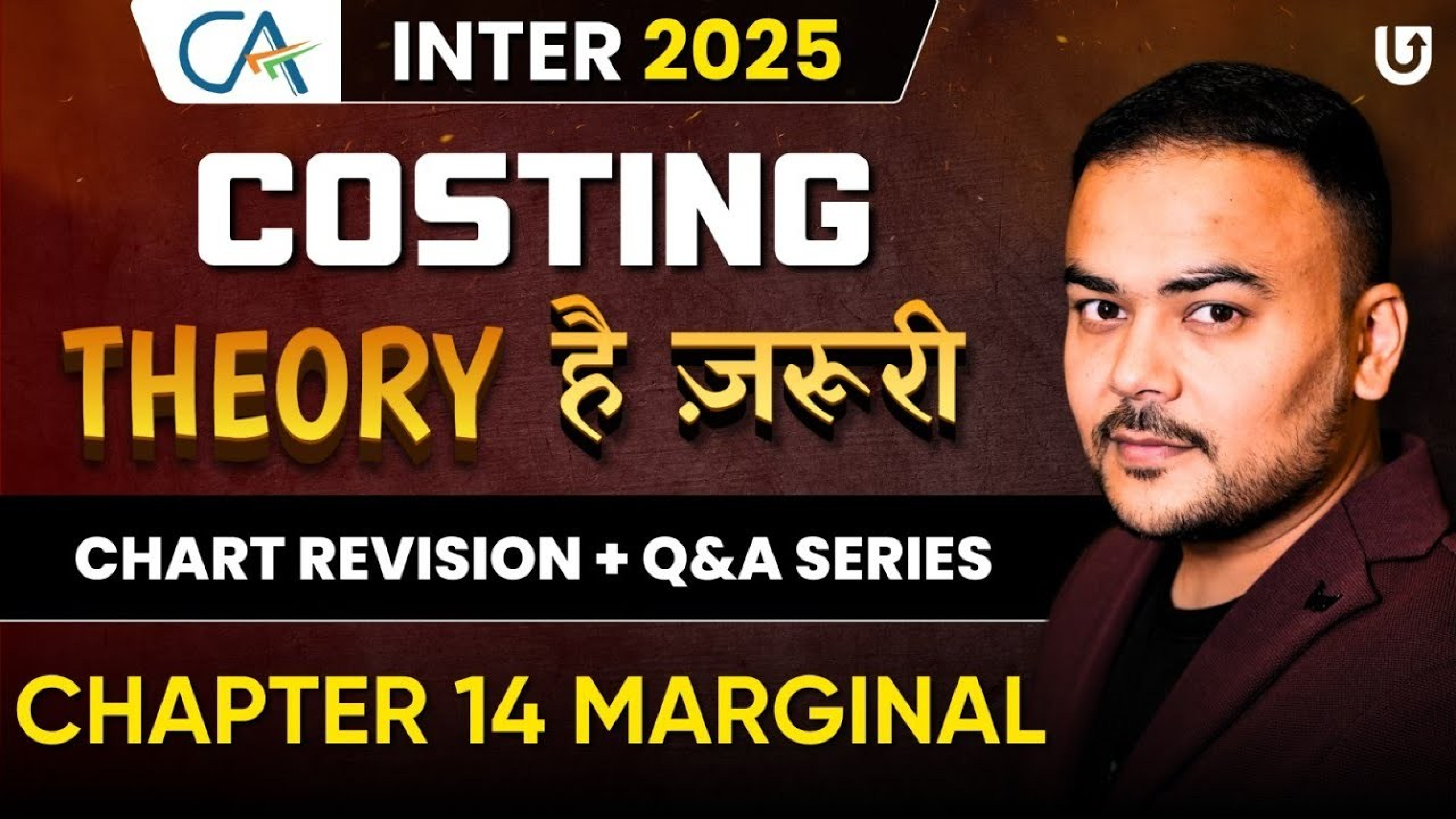
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COSTING
THEORY है ज़रूरी
CHART REVISION + Q&A SERIES
CHAPTER 14 MARGINAL

Theory Chart

Chp14 Marginal

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BASICS

Marginal Cost

Marginal cost as understood in economics is the incremental cost of production which arises due to one-unit increase in the production quantity.

Marginal Cost = Variable Cost per unit

Marginal Costing

- It is technique of cost and management accounting which is used to analyse relationship between cost, volume and profit
- It is a costing system where products or services and inventories are valued at variable costs only.
- Costs are classified on the basis of behavior of cost (i.e. fixed and variable) rather functions as done in absorption costing method

Use of Marginal Costing

Marginal costing is used to provide a basis for the interpretation of cost data to measure the profitability of different products, processes and cost centres in the course of decision making

CHARACTERISTICS OF MARGINAL COSTING

The main characteristics of marginal costing are as follows:

- All elements of cost are classified into fixed and variable components. Semi-variable costs are also analyzed into fixed and variable elements.
- The marginal or variable costs (as direct material, direct labour and variable factory overheads) are treated as the cost of product.
- Under marginal costing, the value of finished goods and work-in-progress is also comprised only of marginal costs. Variable selling and distribution are excluded for valuing these inventories. Fixed costs are not considered for valuation of closing stock of finished goods and closing WIP.
- Fixed costs are treated as period costs and are charged to profit and loss account for the period for which they are incurred.
- Prices are determined with reference to marginal costs and contribution margin.
- Profitability of departments and products is determined with reference to their contribution margin.

FACTS ABOUT MARGINAL COSTING

- **Not a distinct method:** Marginal costing is not a distinct method of costing like job costing, process costing, operating costing, etc., but a special technique used for managerial decision making. It can be used in conjunction with the different methods of costing such as job costing, process costing, etc., or even with other techniques such as standard costing or budgetary control.
- **Cost Ascertainment:** In marginal costing, cost ascertainment is made on the basis of the nature of cost.
- **Decision Making**: In traditional costing, fluctuating manufacturing activity, and consequently the variations in the total cost from period to period or even from day to day, poses a serious problem to the management in taking sound decisions. Hence, the application of marginal costing has been given wide recognition in the field of decision making.

CVP ANALYSIS

CVP Meaning

It is a managerial tool showing the relationship between various ingredients of profit planning viz., cost, selling price and volume of activity

Assumptions under CVP

- Selling Price p.u., Variable Cost p.u. and Total Fixed Cost will remain constant
- Total Cost can be separable into Fixed and Variable
- Total Revenue and Cost are graphically linear
- In case of multiple products, sales mix is constant
- Revenues and Costs are added without considering time value of money

Importance of CVP

It provides the information about the following matters:

- The behavior of cost in relation to volume.
- Volume of production or sales, where the business will break-even.
- Sensitivity of profits due to variation in output.
- Amount of profit for a projected sales volume.
- Quantity of production and sales for target profit

Impact of various changes on Profit

CVP analysis is extremely useful to management in budgeting and profit planning. It elucidates the impact of the following on the net profit:

- Changes in selling prices
- Changes in volume of sales
- Changes in variable cost
- Changes in fixed cost

Break-Even Analysis

It is generally used method to study CVP Analysis:

- In narrow sense it is concerned with computing the break-even point. At this point of production level and sales there will be no profit and loss i.e. total cost is equal to total sales revenue.
- In broad sense this technique is used to determine the possible profit/loss at any given level of production or sales.

Break-Even Analysis can be conducted by two methods:

- **Algebraic computations:** in order to break even the amount of contribution generated should be exactly equal to the fixed costs incurred.
- **Graphic presentations:** Break-even Chart, Contribution Break-even Chart, PV Chart

Margin of Safety

- The margin of safety can be defined as the difference between the expected level of sale and the breakeven sales.
- The larger the margin of safety, the higher is the chances of making profits.

GRAPHICAL BEP

Break Even Chart

- A breakeven chart records costs and revenues on the vertical axis and the level of activity on the horizontal axis.
- Fixed Cost, Total Cost and Revenue Lines are shown
- The breakeven point is that point where the sales revenue line intersects the total cost line.
- Other measures like the margin of safety and profit can also be measured from the chart.
- Limitation: Contribution cannot be shown in this chart

Contribution Break Even Chart

- Similar to Break even chart except Variable Cost Line is shown instead of Fixed Cost Line so that contribution can be presented
- Area between Sales line and Variable cost lines shows contribution
- Other points are same as Break Even Chart

Profit Volume Chart

- This is also useful for find Breakeven point
- In this chart the vertical axis represents profits and losses and the horizontal axis is drawn at zero profit or loss.
- In this chart each level of activity is taken into account and profits marked accordingly.
- The breakeven point is where this line interacts the horizontal axis.
- **Advantage**: The biggest advantage of the profit-volume chart is its capability of depicting clearly the effect on profit and breakeven point of any changes in the variables.

APPLICATION OF CVP ANALYSIS IN DECISION MAKING

Framework for Decision Making

- **Step 1:** Identification of Problem – Example: Arnav Ltd. wants to become cost leader but problem is how produce at lower costs
- **Step 2:** Identification of Options – Example: Options to lower the costs can be like Purchasing Local or Import, Make or Buy, Bulk Purchase, Make or Outsource, Old Machine vs New Machine, Product Mix Decisions etc.
- **Step 3:** Evaluation of the Options – To assess impact of each option by identifying cost and benefits
- **Step 4:** Selection of the Option - After evaluation of the options, the best option is selected and implemented.

Principles for identifying cost and benefits

- **Controllability:** Those cost and benefits which arise due to choice of an option. In other words, benefits received, and cost incurred are directly related with the choice of the option. Thus, the costs and benefits which are controllable are considered for measurement for making decision.
- **Relevance:** The costs which are controllable need to be relevant for decision making. This means all controllable costs are not relevant for decision making unless it differs under the two options
- Thus, a cost is treated is relevant only if (a) it is a future cost and (b) it differs under two options under consideration.
- **Relevant Cost:** Opportunity Cost, Notional Cost/ Imputed Cost, Shut Down Costs
- **Irrelevant Cost:** Historical Cost, Sunk Cost, Committed Cost etc.

Principles for estimation of cost and benefits

- After identification of the costs and benefits, it is now required to be quantified i.e., the cost and benefit should be measured and estimated.
- **Variability:** Variability means by how much a cost or benefit increased or decreased due to the choice of the option. Variable costs are the cost which differs under the different volume or activities. On the other hand, Fixed costs remain same irrespective of volume and activities.
- **Traceability:** Traceability of cost means degree of relationship between the cost and the choice of the option. Direct costs are directly assigned to the option on the other hand indirect costs needs to be apportioned to the option on some reasonable basis.

Short Term Decision-Making using CVP

Decisions related with excess supply, such as:	• Processing of Special Order • Determination of price for stimulating demand • Local vs Export sale • Determination of minimum price for price quotations • Shut-down or continue decision etc.
Decisions related with excess demand, such as:	• Make or Buy/ In-house-processing vs Outsourcing • Product mix decision under resource constraints (limiting factors) • Sales mix decisions • Sale or further processing etc.
Limiting Factor	Limiting factor is anything which limits the activity of an entity. The factor is a key to determine the level of sale and production, thus it is also known as **Key factor.**

Cost Indifference Point

- It is the particular level of activity at which two options under consideration will give same profitability.
- At activity level below the indifference points, the alternative with lower fixed costs and higher variable costs should be used.
- At activity level above the indifference point alternative with higher fixed costs and lower variable costs should be used.

MARGINAL VS ABSORPTION COSTING

Product Cost and Period Cost

- The technique of marginal costing is based on the distinction between product costs and period costs.
- Only the variables costs are treated as the costs of the products while the fixed costs are treated as period costs which will be incurred during the period regardless of the volume of output.

Contribution

- Contribution or contribution margin is the difference between sales revenue and total variable costs irrespective of manufacturing or non-manufacturing.
- The contribution concept is based on the theory that the profit and fixed expenses of a business is a 'joint cost' which cannot be equitably apportioned to different segments of the business.
- The word contribution has been given its name because of the fact that it literally contributes towards the recovery of fixed costs and the making of profits.

Absorption Costing

- Absorption Costing is the practice of charging all costs, both variable and fixed to operations, processes or product.
- In absorption costing the classification of expenses is based on functional basis whereas in marginal costing it is based on the nature of expenses.
- In absorption costing, the fixed expenses are distributed over products on absorption costing basis

Advantages of Marginal Costing

- **Simplified Pricing Policy:** The marginal cost remains constant per unit of output whereas the fixed cost remains constant in total. Since marginal cost per unit is constant from period to period within a short span of time, firm decisions on pricing policy can be taken.
- **Proper recovery of Overheads:** In absorption, fixed overheads are included on the basis of pre-determined rates, there will be under-recovery of overheads if production is less or if overheads are more. In marginal complete fixed overheads is charged as perdiod costs
- **Shows Realistic Profit:** Advocates of marginal costing argues that under the marginal costing technique, the stock of finished goods and WIP are carried on marginal cost basis and the fixed expenses are charged to PNL as period cost. This shows the true profit of the period.
- **How much to produce:** Marginal costing helps in the preparation of breakeven analysis which shows the effect of increasing or decreasing production activity on the profitability of the company.
- **More control over expenditure:** Segregation of expenses as fixed and variable helps the management to exercise control over expenditure. The management can compare the actual variable expenses with the budgeted variable expenses and take corrective action through analysis of variances.
- **Helps in Decision Making:** Marginal costing helps the management in taking a number of business decisions like make or buy, discontinuance of a particular product, replacement of machines, etc.
- **Short term profit planning**: It helps in short term profit planning by B.E.P charts.

Limitations

- Difficulty in classifying fixed and variable elements: Most of the expenses are neither totally variable nor wholly fixed.
- **Dependence on key factors:** Contribution of a product itself is not a guide for optimum profitability unless it is linked with the key factor.
- **Scope for Low Profitability**: Sales staff may mistake marginal cost for total cost and sell at a lower price; which will result in loss or low profits. Hence, sales staff should be cautioned while giving marginal cost.
- **Faulty valuation:** Overheads of fixed nature cannot altogether be excluded particularly in large contracts, while valuing the work-in- progress. In order to show the correct position, fixed overheads have to be included in work-in-progress.
- **Unpredictable nature of Cost:** Some of the assumptions regarding the behaviour of various costs are not necessarily true in a realistic situation.
- **Marginal costing ignores time factor and investment:** The marginal cost of two jobs may be the same but the time taken for their completion and the cost of machines used may differ. The true cost of a job which takes longer time and uses costlier machine would be higher. This fact is not disclosed by marginal costing

Absorption Costing vs Marginal Costing

MARGINAL COSTING	ABSORPTION COSTING
Only variable cost are considered for costing of product and inventory valuation	Both Fixed and Variable Costs are considered for costing of product and inventory valuation
Fixed Costs are considered as Period Costs	Fixed costs are charged to production
Performance of products is judged by PV Ratio	Performance of products is judged by Net Profit
The difference in the value of opening and closing stock do not affect unit cost of production	The difference in the value of opening and closing stock affect the unit cost of production due to impact of related Fixed Cost