



MANAGERIAL ECONOMICS

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Lecture No - 22 : Theory of Cost

Recap from last Session

- The Long-Run Cost-Output Relations
- Break-Even Analysis: Linear Cost and Revenue Functions.
- Break-Even Analysis: Non-Linear Cost and Revenue Function

Session Outline

- Contribution Analysis
- Learning Curve

Contribution Analysis

Analysis of incremental revenues and incremental cost of business activity .

Breakeven charts can also be used for measuring contributions made by business activity towards covering fixed cost.

In a graph, variable cost plotted below the fixed cost.

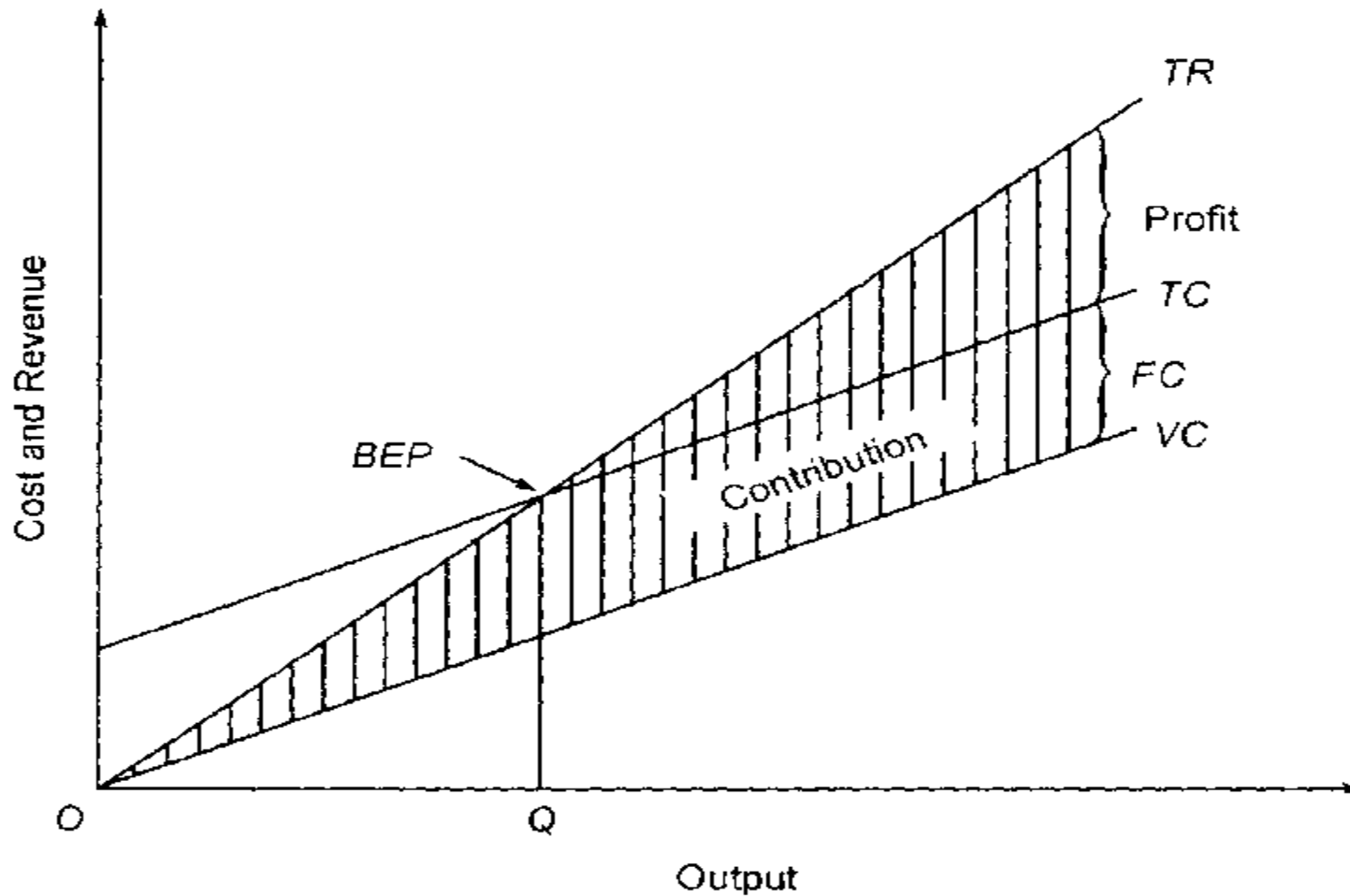
Contribution Analysis

Fixed costs are a constant addition to the variable costs.

Total cost line will run parallel to variable cost line.

The contribution is the difference between total revenue and variable cost arising out of business decision.

Contribution Analysis



Contribution Analysis

OQ, the breakeven level of output, contribution equals fixed cost.

Below the output OQ, the total contribution is less than fixed cost- This amount to loss.

Beyond output OQ, contribution exceeds fixed cost – the difference is a contribution towards profits resulting from a business decision.

Contribution Analysis

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Contribution Analysis

Contribution over the time period under review is plotted in order to indicate the commitment that the management has made to fixed expenditure and to find the level of output from which it will be recovered and profit will begin to emerge.

At output level OQ, contribution equals fixed cost. Beyond output OQ, Contribution includes net profit.

The Profit Volume (PV) Ratio

The PV ratio is another useful tool for finding the Break-Even Point (BEP) of sales, especially for multi-purpose firms.

The PV ratio is defined by the following formula:

$$\text{PV Ratio} = \frac{S - V}{S} \times 100$$

Where S = Selling price; and, V = average Variable cost.

The Profit Volume (PV) Ratio

For instance, if the selling price, $S = \text{Rs } 5$ per unit, and average variable cost, $V = \text{RSs } 4$ per unit, then:

$$\text{PV Ratio} = \frac{5 - 4}{5} \times 100 = 20 \text{ percent}$$

The Break-even point (BEP) in sales value is calculated by dividing the fixed expenses (F) by the PV ratio.

$$\text{BEP (Sales value)} = \text{Fixed Expenses} / \text{PV Ratio} = F / (S - V) / S$$

Margin of Safety

It represents the difference between the sales at breakeven point and the total actual cost.

Margin of Safety = Profit * Sales/PV ratio

Margin of Safety = Profit/ PV ratio

Margin of Safety = $S_a - S_b/S_a * 100$, S_a – actual sales, S_b = sales at BEP - Example

Margin of Safety

It can be increased by increasing selling price, provided the sales are not seriously affected.

It can happen only when demand for the product is inelastic.

It can also be increased by increasing production and sales up to the capacity of plant even by reducing selling price provided the demand is elastic.

Margin of Safety

The other methods include reduction in fixed expenses, reduction in variable expenses or having a product mix with greater share of one that assures greater contribution per unit or which has a higher PV ratio.

Profit Volume Analysis Chart

Cash Break Even Analysis

Limitation of breakeven Analysis

Can be applied to only a single product system

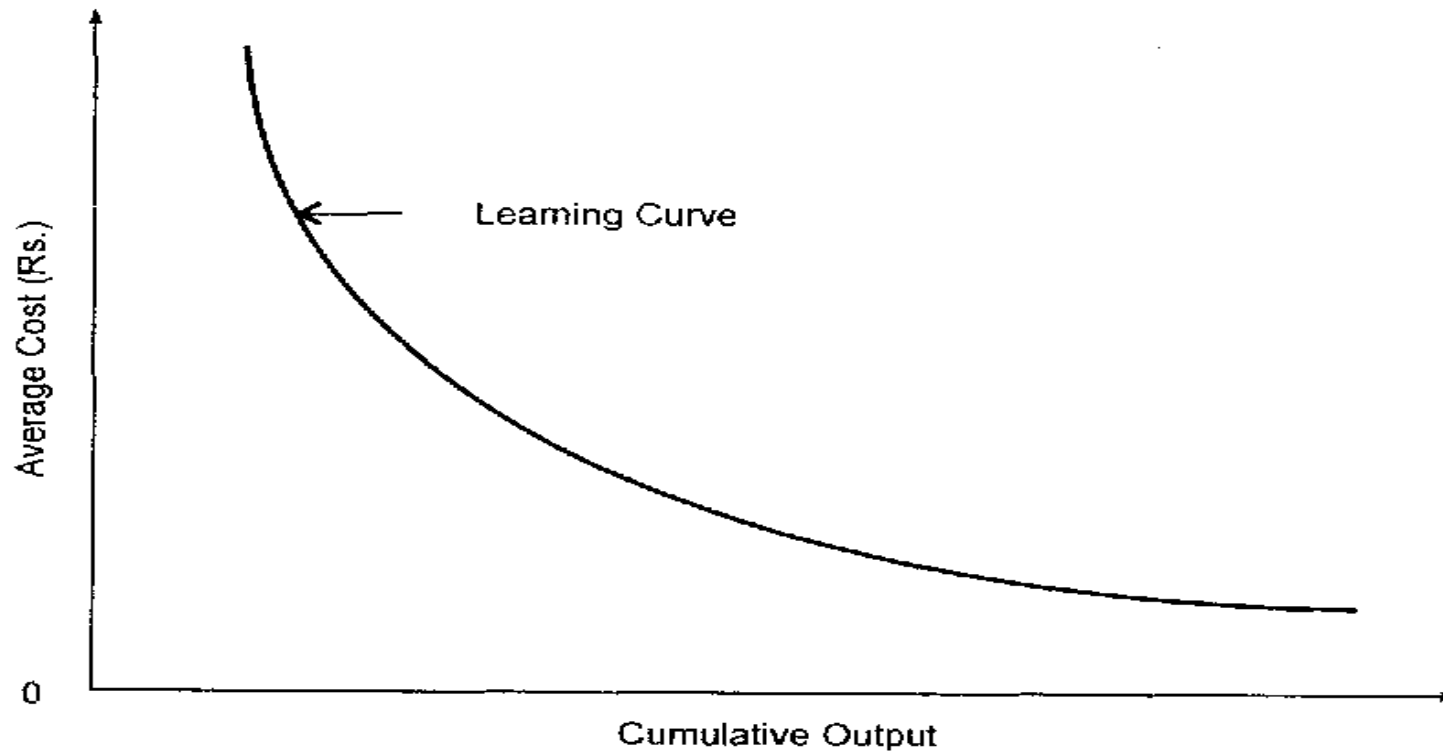
Cannot be applied where cost and price data cannot be determined beforehand

Learning Curve

The acquired knowledge and experience helps firms in reducing LAC almost continuously. They learn over time to get work done in

- Shorter period of time
- Reduce cost of production
- Increase Factor Productivity

Managerial Economics



The curve shows declining trend in long-term average cost of production.

Learning curve is different from convention LAC as LAC gives cost of Plant wise production, Learning curve gives average cost of cumulative output., the total output right from the beginning of production of a commodity

Session References

Managerial Economics; D N Dwivedi, 7th Edition

**Managerial Economics – Christopher R Thomas, S Charles
Maurice and Sumit Sarkar**

Micro Economics : ICFAI University Press