

# Vasireddy Venkatadri Institute of Technology

Basic Economic tools in managerial economics

# Basic Economic tools in managerial economics

- Economic theory offers a variety of concepts which can be of considerable assistance to the managers in decision making practises; these tools are helpful for managers in solving business related problems.
- These are thus taken as guides in making decisions
- The following are the economic tools for decision making.
  1. Opportunity cost principle
  2. Incremental principle
  3. Principle of time perspective
  4. Discounting principle
  5. Equi-marginal principle

# 1. Opportunity cost principle:-

- Opportunity cost is the loss of earning due to lost opportunities.
- opportunities are fore gone due to scarcity of resources .
- If Resources were unlimited, there would be no opportunity.
- The opportunity cost may be defined as the loss of expected returns from the second use of the resources foregone for availing the gains from their best possible use.
- Since opportunity is the income expected from the second best alternative use of resources. It measures the sacrifice made for taking a decision
- Let us consider the following examples:

- a. The opportunity costs of the funds employed in ones own business is the interest that can be earned on those funds if they are employed in other ventures.
- b. The opportunity cost of using a machine to produce one product is the foregone income which would have been possible from other products.
- c. The opportunity cost of holding Rs 1000 as cash in hand for one year is the 10% rate of interest which has been earned had .The money been kept as fixed deposit in a bank.
- d. The opportunity cost of a high school graduate joining college is the income he would earn by entering the work force.
- e. Capital is invested in plant & machinery. It cannot be now invested in shares or debentures. The loss of interest and dividend that would be earned is the opportunity cost.

# Incremental principle:-

- It is related to the marginal cost and marginal revenue concepts in economic theory.
- Incremental concepts involve estimating the impact of decision alternatives on costs and revenues resulting from changes in prices, products, producers, Investments or whatever else may be at stake in the decisions.
- The two basic components of incremental reasoning are:
  - 1) Incremental cost          2) Incremental revenue.
- Incremental cost may be defined as the change in total cost resulting from a particular decision.
- Incremental revenue is the change in the total revenue resulting from a particular decision.

# Principle of time perspective:-

- The time perspective principle argues that the decision – maker must give due consideration both to the short and long –run effect of decision on revenue as well as costs, giving appropriate weights to the various time periods, before arriving to a decision.
- A very important requirement in decision making is to maintain the right balance between long run and short run considerations.
- In the market we come across many new products, which are sold below cost or on relatively small margins in the beginning making profits in the long run.
- If the manager did not have time perspective in their minds, They would never restored to such practises.
- This is called the price penetration (I.e. fixing low price initially and increasing it gradually as demand rises) concept.

# Principle of time perspective:-

- **Example:** Suppose there is a firm with temporary idle capacity. An order for 5000 units comes to the management's attention. The customer is willing to Rs. 4 per unit or Rs. 20000 for the whole lot but not more. The short run incremental cost (ignoring the fixed cost) is only Rs. 3, therefore the contribution to overhead and profit is Rs. 1 per unit (Rs. 5000 for the lot).
- **Analysis:** If the firm executes this order, it will have to face the following repercussion in the long run:
  - a) It may not be able to take up business with higher contributions in the long run.
  - b) The other customers may also demand a similar low price.
  - c) The image of the firm may be spoilt in the business community.
  - d) The long run effects of pricing below full cost may be more than offset any short run gain.
- Therefore, the managerial economist should take into account both the short run and long run effects as revenues and costs, giving appropriate weight to most relevant time periods.

# Discounting principle:

- One of the fundamental ideas in economics is that a rupee is worth less tomorrow than today.
- Since future prospects are unknown and incalculable, there is a lot of risk involved in all this.
- Today's loan is certain but a promise to repay it tomorrow is uncertain.
- Since the promise may not be honoured.
- This point could be made clear through the proverb "A bird in hand is worth than two in the bush".
- Moreover, the return in the future is less attractive than the same return today.
- Suppose a person is offered a choice between a gift of Rs 100/- today or Rs 100/- next year. Naturally he will choose Rs 100 today. This is true for two reasons.
- The future is uncertain and there may be uncertainty in getting Rs 100/- if the present opportunity is not avoided of
- Even if he is sure to receive the gift in future, today's Rs 100/- will can be invested so as to earn interest, say 8% so that one year later Rs 100/- will become Rs 108/-



# Equi-marginal principle:

- This principle deals with the allocation of an available resources among alternative activities.
- According to this principle , an input should be so allocated that the value added by the last unit is the same as in all other cases.
- Suppose that a firm has **100** units of Labour at its disposal .
- The firm is engaged in four activities which need labour services viz., X,Y,Z and S.

Activity	No of Labors	Marginal Product (MP)
X	25	30
Y	25	20
Z	25	15
S	25	35

- It can enhance any one of these activities by adding labour but only at the costs of other activities.
- It should be clear that if the value of the marginal products is higher in one activity than in another, an optimum allocation has not been attained.

- Therefore, It would be profitable to shift labour from a low marginal value to a high marginal value activity, thus increasing the total value of all products taken together.

Price of Activity	Activity	No. of Labors	Marginal Product (MP)
4	X	30 (25+5)	<b>25</b>
5	Y	15 (25-10)	<b>25</b>
3	Z	20 (25-5)	<b>25</b>
2	S	35 (25+10)	<b>25</b>

Marginal Product of X :: The Price of X is Rs 4/-		
No. of Labors	Total Product	Marginal Product
1	40	40
2	76	36
3	108	32
4	136	28
5	160	24
6	180	20

- Symbolically, the principle of Equi-marginal can be written as:

$$MU_X/P_X = MU_Y/P_Y$$

**(Or)**

$$MU_X/MU_Y = P_X/P_Y$$

- For example: If in activity X the value of marginal product of labour is Rs. 30 while that in activity Y is Rs. 20.
- It is profitable to shift labour from activity Y to activity X, thereby enhancing activity X and reducing activity Y.
- The optimum level will be reached when the value of the marginal product is equal in all the four activities.

# Brief analysis of Equi marginal Principle

- This Equi-marginal principle can be explained in terms of an arithmetical example in the below table.
- we have shown marginal utility schedule of X and Y from the different units consumed.
- Let us also assume that prices of X and Y are Rs. 4 and Rs. 5, respectively.

**Table 2.6: Marginal Utility Schedules**

Number of units consumed	$MU_x$	$MU_y$
1	40	55
2	36	50
3	32	30
4	28	20
5	24	15
6	20	5

# Brief analysis of Equi marginal Principle

- In the above table we have seen  $MU_X$  and  $MU_Y$  schedules show diminishing marginal utilities for both goods X and Y from the different units consumed.
- Now Dividing  $MU_X$  and  $MU_Y$  by their respective prices. Then we obtain weighted marginal utility or marginal utility of money expenditure.
- This has been shown in below table.

**Table 2.7:  $MU_X / P_X$  and  $MU_Y / P_Y$  Schedules**

Number of units consumed	$MU_X / P_X$	$MU_Y / P_Y$
1	10	11
2	9	10
3	8	6
4	7	4
5	6	3
6	5	1

# Brief analysis of Equi marginal Principle

- In the above table  $MU_X/P_X$  and  $MU_Y/P_Y$  are equal to 6 when 5 units of X and 3 units of Y are purchased.
- By purchasing these combinations of X and Y, the consumer spends his entire money income of Rs. 35 (= Rs.  $4 \times 5 + \text{Rs. } 5 \times 3$ ) and, thus, gets maximum satisfaction  $[10 + 9 + 8 + 7 + 6] + [11 + 10 + 6] = 67$  units.
- Purchase of any other combination other than this involves lower volume of satisfaction.

# Brief analysis of Equi marginal Principle

## Graphical Representation:

- The above principle can also be illustrated in terms of a figure.
- We have drawn marginal utility curves for goods X and Y.

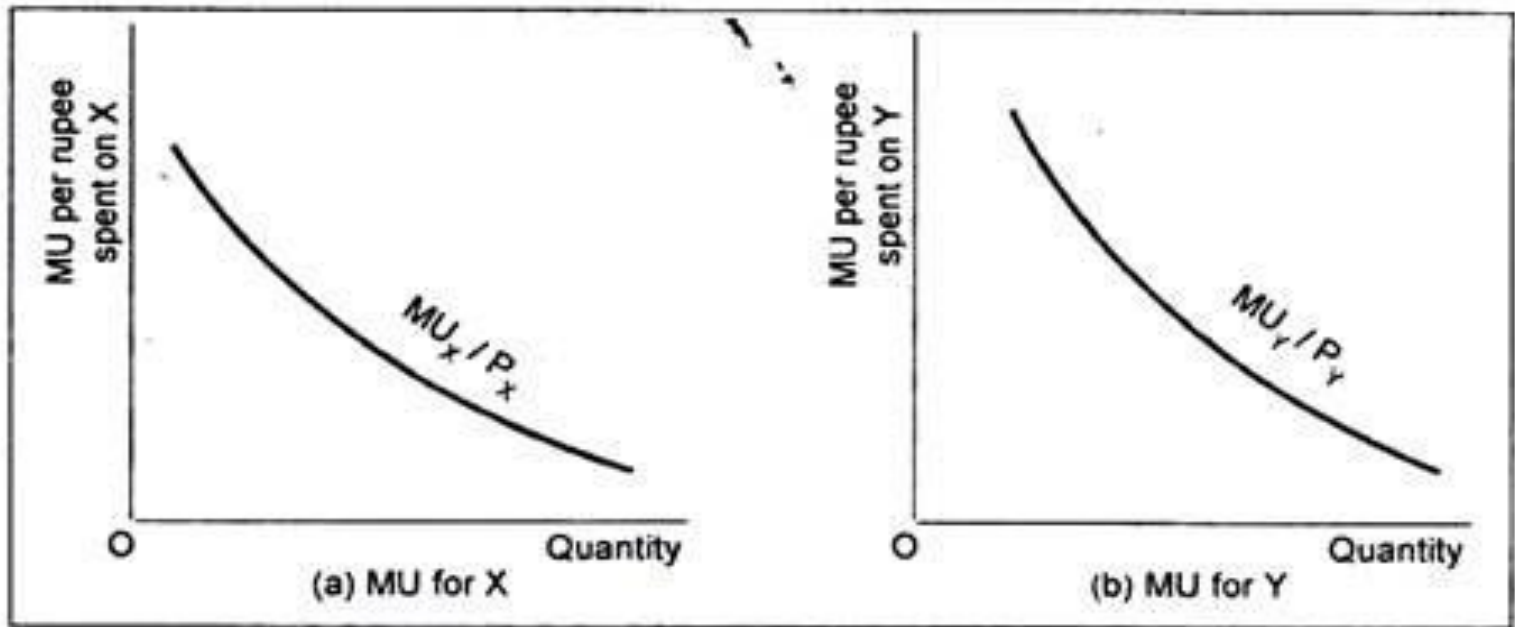


Fig. 2.12: MUs for X and Y

# Brief analysis of Equi marginal Principle

- Now, by superimposing Fig. 2.12(b) on Fig. 2.12(a), we get Fig. 2.13 in which we measure available income— $OO'$ —of the consumer on the horizontal axis.

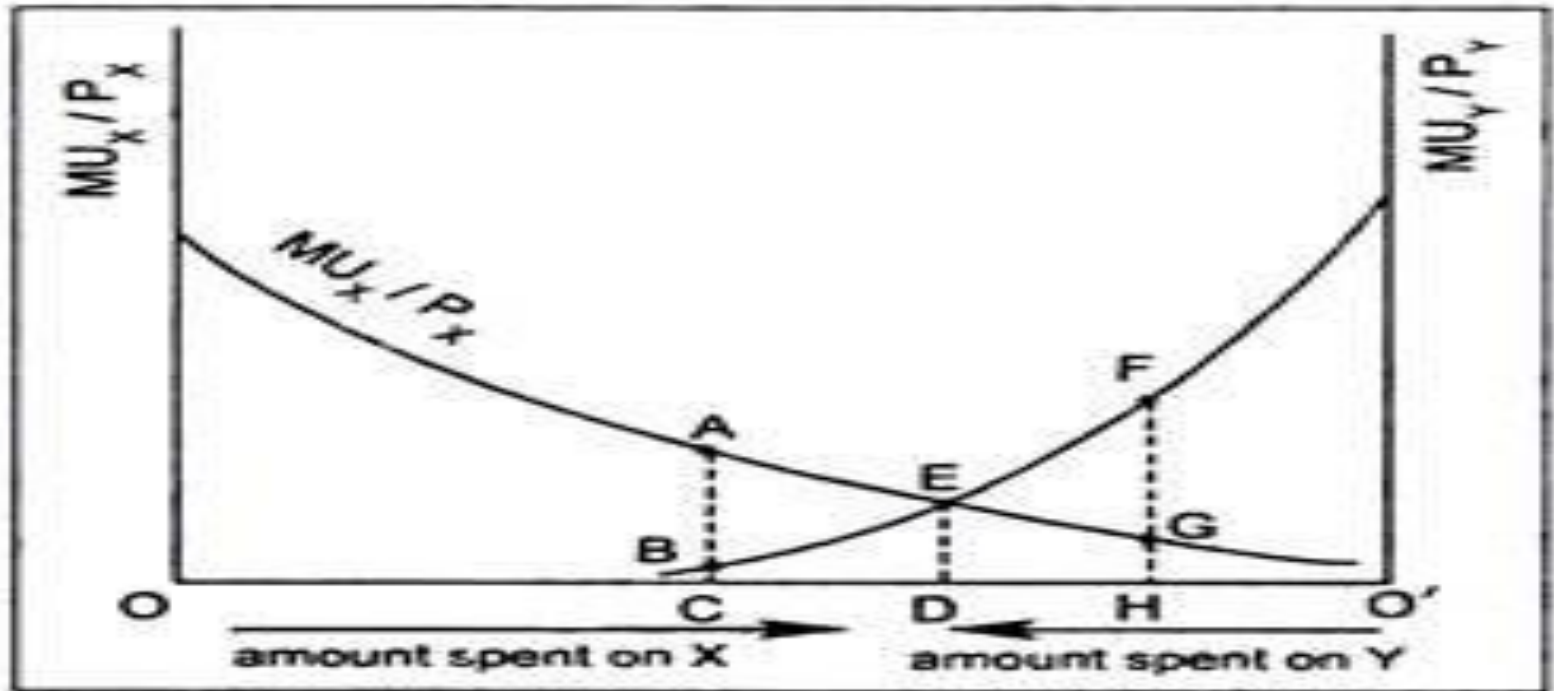


Fig. 2.13: Equi-marginal Principle



# Brief analysis of Equi marginal Principle

- As we move rightwards from 'O', amount spent on X increases and, as we move leftwards from 'O', amount spent on Y increases.
- How does our consumer allocate his total income in buying both goods X and Y is described by equalizing per rupee spent on both?
- Our consumer maximizes his total utility by spending OD amount on good X and O'D amount on good Y.
- By purchasing this combination, the consumer equalizes marginal utilities per rupee spent on X and Y at point E (i.e.,  $MU_X/P_X = MU_Y/P_Y = ED$ ).
- No other combination will give greater satisfaction.
- If our consumer spends OC on good X and O'C on good Y then  $MU_X/P_X$  will exceed  $MU_Y/P_Y$  by the distance AB.
- This will induce the consumer to buy more of X and less of Y. As a result,  $MU_X/P_X$  will fall, while  $MU_Y/P_Y$  will rise until equality is restored at point E.
- Similarly, if the consumer spends OH on X and O'H on Y then  $MU_X/P_X < MU_Y/P_Y$  by the distance of FG.
- Now, the consumer will buy more of Y and less of X.
- This substitution between X and Y will continue until  $MU_X/P_X = MU_Y/P_Y$ .
- Therefore, the consumer can derive maximum satisfaction only when marginal utility per rupee spent on good X is the same as the marginal utility per rupee spent on another good Y.
- When this condition is met, the consumer does not find any interest in changing his expenditure pattern.

question?

THANK  
YOU