

Theory of Demand

The purpose of theory of demand is to determine the various factors that affect demand. Some of the most important determinants of the market demand for a particular product are its own price, consumers' income, prices of other commodities, consumers' tastes, income distribution, total population, consumer wealth, credit availability, government policy, past level of demand and past level of income.

The traditional theory of demand has concentrated on four of the above determinants, (P_x , P_y , Y and T).

Theory of consumer behaviour:-

The traditional theory of demand starts with the examination of the behaviour of the consumer, since the market demand is assumed to be the summation of the demands of individual consumers. There are two basic approaches to the problem of comparison of utilities - the cardinalist school approach and the ordinalist school approach.

The cardinalist school approach postulated that utility can be measured. Cardinalist school postulated that utility is not measurable, but is an ordinal magnitude. The consumer must

not know in specific units the utility of various commodities to make his choice. It suffices to him to be able to rank the various baskets of goods according to the satisfaction that each bundle gives him. He must be able to determine his order of ~~preference~~ preference among the different bundles of goods. The main ordinal theories are the indifference curve approach and the revealed preference hypothesis.

The cardinal utility theory:-

Assumptions:-

1) Rationality:- Consumer is a rational. He aims at the maximisation of his utility subject to constraint imposed by given income.

2) Cardinal utility:- The utility of each commodity is measurable. The utility is measured by monetary units that the consumer is prepared to pay for another unit of the commodity.

3) Constant marginal utility of money:-

The assumption is necessary if the monetary unit is used as the measure of utility. If the marginal utility of money changes (income increases (or decreases)) the measuring rod for utility becomes like an elastic ruler, inappropriate for measurement.

4) Diminishing marginal utility:- The MU of

Commodity diminishes as the consumer acquires larger quantities of it. This is the axiom of diminishing marginal utility.

5) The total utility of a basket of goods depends on the quantities of the individual commodity. If there are n commodities in the bundle with quantities $x_1, x_2, \dots, x_n$ the total utility is

$$U = f(x_1, x_2, x_3, \dots, x_n)$$

The theory of consumer behaviour is based on the assumption that the total utility is additive.

$$U = U_1(x_1) + U_2(x_2) + \dots + U_n(x_n)$$

The additive assumption was dropped in later version of the cardinal utility theory because independent utilities of the various commodities in the bundle are an assumption unrealistic and unreasonable for the cardinal theory.

Equilibrium of the consumer:

In a simple model of a single commodity x . The consumer can either buy x or retain his money income Y . Under these conditions the consumer is in equilibrium when the MU_x is equated by the P_x .

$$MU_x = P_x$$

if $MU_x > P_x$ the consumer can increase his welfare by purchasing more units of x .
if $MU_x < P_x$ the consumer can increase his total satisfaction by cutting down the

quantity of x and keeping more of his income unspent. Therefore, he attains the maximization of his utility when $MU_x = P_x$.

If there are n commodities, the equilibrium of the consumer is the equality of the ratio of the marginal utilities of individual commodities to their price

$$\frac{MU_x}{P_x} = \frac{MU_y}{P_y} = \dots = \frac{MU_n}{P_n}$$

Mathematical derivation:-

The utility function is $U = f(x)$
expenditure is $= P_x \cdot x$

where utility is measured by monetary unit $U = P_x \cdot x$

for maximization is that partial derivation of the function w.r.t. x equal to zero.

$$\frac{\partial U}{\partial x} = \frac{\partial (P_x \cdot x)}{\partial x} = 0$$

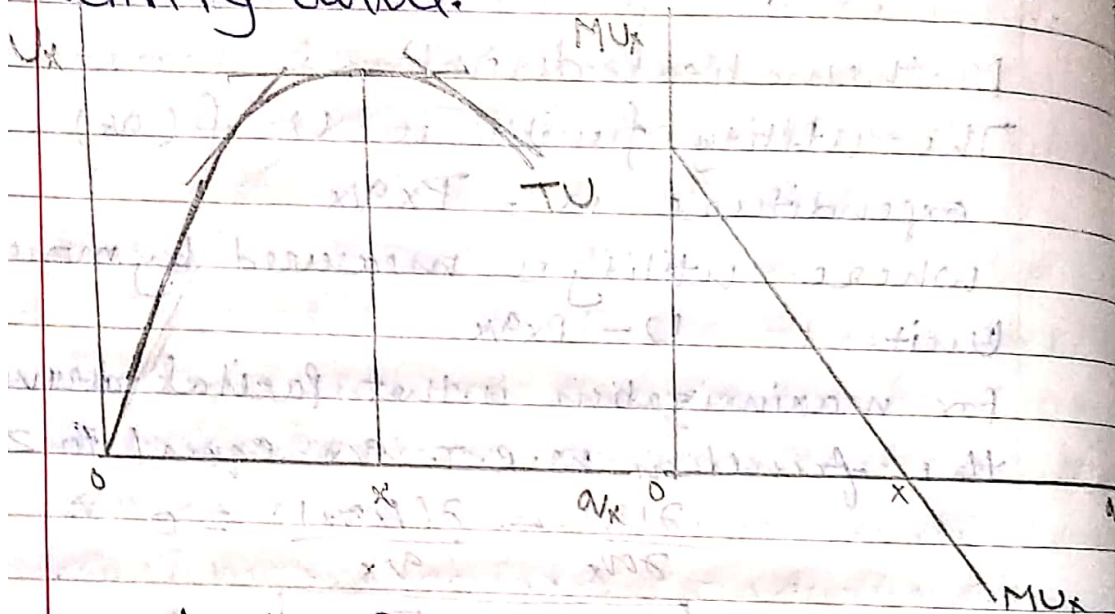
$$MU_x = P_x$$

The utility derived from spending an additional unit of money must be the same for all commodities. If a consumer derives greater utility from any one commodity he can increase his welfare by more on that commodity and less on the others until the above equilibrium condition is fulfilled.

Derivation of demand of the consumer:-

The derivation of demand is based on the axiom of diminishing marginal

Utility. MU_x may be depicted by negative slope. and MU_x is slope of TU function $U = f(x)$. The total utility increases at a decreasing rate, up to quantity x and then starts declining. If MU_x is measured in monetary unit the demand curve for x is identical to the positive segment of the marginal utility curve.



In fig (iii)(iv) at x_1 the $MU_1 = P_1$ by definition. Hence at P_1 the consumer demand x_1 quantity. Similarly at x_2 the MU_2 which is equal to P_2 at P_2 consumer buy x_2 and so on. The negative section of the MU curve does not form part of the demand curve since the negative quantities do not make sense in economics.

