

5. Even when the habits, tastes etc. of a person are constant, the intensity of desire varies with the quantity of the commodity already in his possession or already consumed by him. Thus if a man has 6 shirts he desires an additional one with less intensity than he would have if he had only 2 shirts.

How can Utility be Created? Utility can be created in four different ways viz.

- 1) **Form.** By changing the form of matter. Mud usually has no utility but if it is converted to a pot, it acquires utility.
- 2) **Place.** By transferring matter to a place where it would be more useful. Coal at the bottom of the earth is of no use but when it is brought to a house or factory it can be utilised for the satisfaction of wants.
- 3) **Time.** By holding matter over to a time when, it would be more useful. During the rainy season there is plenty of useless water; if it is stored and used later it is more useful.
- 4) **Service.** By performing a service. Personal services like those of doctors or engineers can satisfy human wants.

These four types of utility are called: **Form, Place, Time and Service** utilities.

Can Utility be Measured? Utility or the power to satisfy a want is a psychological concept. There are two views on the question whether it can be measured. Pareto,

Hicks and others are of opinion that utility cannot be measured in quantitative terms. According to them utility, or the want-satisfying power, of a commodity does not depend on the commodity itself but on the mental attitude of the man who desires to consume it. It is a subjective concept. The mental attitude on which utility depends differs from man to man. For the same man it differs from time to time. Even at a particular point of time it is impossible to calculate, in physical terms, how much utility a man derives from the consumption of, say three cups of tea. All that a man can say definitely is whether he prefers three cups of Tea to, say, two cups of coffee. Pareto and others have built up a theory of consumer demand based on these preferences.

Other writers are of opinion that it is possible to measure utility indirectly by finding out how much a man is prepared to sacrifice in order to get one unit of a certain thing. Thus, suppose that a man is willing to pay Rs. 5 for a cup of tea. We can then infer that the utility of a cup of tea to him has the same value as Rs. 5. Therefore, utility can be measured by money.

Economists, who believe that utility is a measurable magnitude, are known as the Cardinalists. Economists having the opposite view are known as the Ordinalists.

Diagrammatic Representation of Utility. If we assume that utility is a measurable magnitude, we can represent it graphically as follows:

Let OX and OY be two axes of co-ordinates, representing shirts and the utility derived from them respectively. Suppose that OA, AB and BC represents one shirt each. The utility derived from the first shirt (OA) can be represented by the

area OC, C_1, U . Mathematically therefore the total utility obtained from the consumption of OC units of a commodity is measured by the area OC, C_1, U . The marginal utility, when OC units are consumed, is CC_1 .

The length of the lines AA_1, BB_1 , etc. shows the amount of utility obtained from each unit consumed. We can measure such utility by any physical unit, suitably defined. According to the cardinal view of utility we can use money for the purpose. But if we do so, we have to assume that the marginal utility of money is constant. For, we cannot use a variable quantity as the unit of measuring anything.

Distinction Between Total and Marginal Utility.

Total utility is the sum of the utilities obtained from each unit consumed. Marginal utility is the additional utility which a person derives from a small addition to his stock of the commodity in question.

Suppose that a man has three shirts and suppose that X_1 represents the utility of the first shirt, X_2 that of the second shirt and X_3 that of the third shirt. Then $X_1 + X_2 + X_3$ represents the total utility obtained by him from 3 shirts. X_3 is the marginal utility at this stage. X_2 is less than X_1 , X_3 is less than X_2 .

Total utility increases up to the point of satiety (the point where marginal utility is zero and the utility curve cuts the X -axis). But marginal utility diminishes continuously. Total utility measures the desiredness of the whole supply. Marginal utility measures the desiredness of a little more of it.

The Paradox of Value. The distinction between Total Utility and Marginal Utility enables us to solve one paradox

of value-why water is less valuable than (say) diamonds. The total utility of water is infinite but as the available supply is large the marginal utility is negligible-the Utility Curve is almost touching the X-axis. The total utility of diamonds is small in comparison with water but as the available supply is small the marginal utility is large. The utility of a single diamond is appreciably larger than that of a glass of water. Therefore diamonds have a price in the market, water has almost none.

Criticisms of the utility concept

The concept of "utility", as used by Marshall and the Neo Classical Theory has been criticised on the following grounds.

1. It lacks definiteness. The term "utility" is used sometimes to mean 'satisfaction'. The term 'total utility' is frequently confused with total satisfaction. But utility and satisfaction are different things. The price paid for a commodity may indicate the intensity of desire for it but does not measure the actual satisfaction obtained.
2. It is impossible to measure it. Utility is not a magnitude which can be measured in quantitative terms. If we use money to measure it we must assume that the marginal utility of money is constant. But this assumption is improper because every purchase reduces a man's stock of money (if income is fixed) and must increase its marginal utility to him.

¹ Hicks (1934), Value and Capital.

Comments. The concept of measurable utility has been abandoned by some modern writers on economic theory. Pareto, Hicks and others have formulated a theory of consumer demand on the basis of consumer preference. This is known as the Preference Approach.

Neumann and Morgenstern¹ found out a method of measuring utility under certain conditions. This is based on "expected" utilities which determine choices when there are "risks". The authors, mentioned above, called it a "Games Theory". The theory, and the method used, is a revival of the Marshallian cardinal utility theory. According to some modern economists, Games theory is the best explanation of behaviour of consumers and the selling policy of oligopolists.

Law of Diminishing MRS

Law of Diminishing Utility is a generalisation drawn from the characteristics of human wants. The want of a human being for a particular commodity diminishes as its consumption increases. The want of a thirsty man for water may be intense but, after he takes one glass, his intensity of desire for another glass becomes less. Subject to certain limitations, the principle applies to all commodities and services.

Law of Diminishing Utility can be stated as follows :

"The additional benefit which a person derives from a given increase of his stock of a thing diminishes with every increase in the stock that he already has." -Marshall.

"As a consumer increases the consumption of anyone commodity' keeping constant the consumption of all other commodities the marginal utility of the variable commodity must eventually decline."-Boulding².

Reasons why marginal utility declines. There are several reasons why marginal utility declines with increasing consumption:

1. Commodities are imperfect substitutes of one another. Commodities must be consumed in certain appropriate proportions, e.g., X of bread with Y of butter. If X is fixed, increasing consumption of Y will sooner or later yield diminishing utility.
2. The desire for a particular commodity or service can usually be satisfied in full (i.e., it is satiable). We cannot consume an infinite quantity of a commodity or service. The first few units consumed gives a positive marginal utility. As consumption increases, a time comes when no further utility is obtained. At this stage marginal utility is zero. Between this stage and the stage of a positive marginal utility there must have been a downward variation of marginal utility.
3. Some economists hold that the method of marginal utility analysis can be explained by the introspective method. The laws regarding marginal utility can be found out by intuition. A normal person can reconstruct his mind by observation. It is clear that if a person eats one orange he feels less eager for the second orange. This method of analysis is called 'introspection'.

It is only the marginal utility which diminishes. The total utility increases, but at a diminishing rate, up to the point of satiety.

1 Newmann and Morgenstern (1944), Theory of Games and Economic Behaviour.
2 Boulding, Economic Analysis, Ch. 29.

Diagrammatic Representation. The Law of Diminishing Utility can be diagrammatically represent as follows :

Suppose that each point on OX represents a certain quantity of a commodity and that the vertical line standing on it represents the corresponding marginal utility. That is, let AA_1 represent the marginal utility of OA units of the commodity, BB_1 the marginal utility of OB units and so on.

The Law of Diminishing Utility states that the vertical lines AA_1 , BB_1 , CC_1 etc. will gradually become shorter and shorter. If we join A_1 , B_1 , C_1 etc., the line will

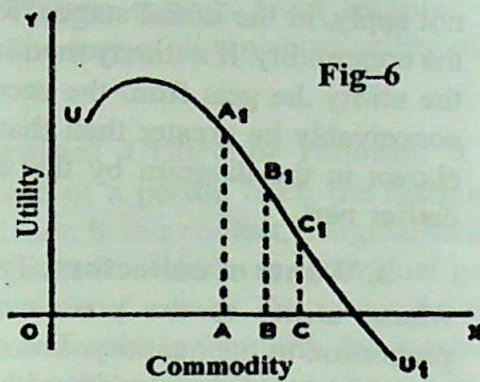


Fig-6

slope downwards from left to right. This line (UU_1 in the Figure No. 6) is called the Utility Curve of the commodity. The curve may conceivably cut OX at some point. At that point, the marginal utility is zero. The consumer reaches satiety at this point and does not want to consume any more units of the commodity. If further increments of the commodity are added, the consumer will suffer pain or disutility. When this occurs, the utility curve is below the X-axis, showing negative utility.

Limitations of the Law. Like other economic laws, the law of Diminishing Utility is subject to certain limitations. These are as follows: