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Consumer's Equilibrium and Demand

2.3 CONSUMER'S EQUILIBRIUM WITH INDIFFERENCE CURVE APPROACH

2.3.1 Assumptions of the Indifference Curve Approach

The indifference curve approach is based on a few simple yet powerful assumptions. These assumptions are:

1. **Rationality.** The consumer is assumed to be rational. He aims at maximising his benefits from consumption, given his income and prices of the goods.
2. **Ordinality.** Utility is expected satisfaction that a consumer gets from a given market basket. In indifference curve analysis, *utility is an ordinal concept. Consumer can order or rank the subjective utilities derived from the commodities.*

   Indifference means that a consumer considers one alternative exactly as good as the other.

3. **Diminishing Marginal Rate of Substitution.** Scale of preferences are ranked in terms of indifference curves. Indifference curves are downward sloping convex-to-the origin curves. The slope of indifference curve is called Marginal Rate of Substitution (*MRS*) of *X* for *Y*. ***MRS* is defined as the amount of good *Y* the consumer is willing to give up to consume an additional unit of good *X*, while leaving total utility unchanged.** An important assumption is that the *MRS* of *X* for *Y*, decreases with greater quantities of good *X*, *i.e.* the greater the quantities of *X*, the less willing the consumer will be to give up *Y* in exchange for *X*. This relationship is known as the **Law of Diminishing Marginal Rate of Substitution.**

4. **Consistency of Choice.** Consumer is consistent in his choice. It means that if good X is preferred over good Y in one time period, then consumer will not prefer Y over X in another time period.
5. **Transitivity of Choice.** Consumer's choices are characterised by the property of transitivity. If good X is preferred to good Y and good Y is preferred to good Z, then good X is preferred to good Z or $x > z$.
6. **Monotonic Preference.** A consumer's preferences are monotonic if and only if between any two bundles, the consumer prefers the bundle which has more of at least one of the goods and no less of the other good as compared to the other bundle.

   Example.

   (*a*) A consumer with monotonic preference will prefer the bundle (2, 3) to bundles (2, 2), (1, 3) and (1, 2) bundles.

   (*b*) A consumer with monotonic preference will prefer the bundle (2, 2) to (1, 1), (2, 1) and (1, 2) bundles.

Thus, monotonicity of preferences implies that (Fig 2.4) point M (which is above the indifference curve) represent a bundle which is preferred to the bundle on the indifference curve.

2.3.2 Indifference Curve

An indifference curve shows different combinations of two goods that yield the same level of utility or satisfaction to the consumer. An indifference curve is downward sloping convex to the origin. Smoothness of the curve implies that the two goods X and Y are prefectly divisible into very small units.

2.3.3 Indifference Schedule

It is a tabular presentation of various combinations of two goods that yield the same level of satisfaction to the consumer.

Table 2.3 **Indifference schedule**

Combinations	Units of Commodity Y	Units of Commodity X	$MRS_{XY} = \frac{\Delta Y}{\Delta X}$
A	16	1	—
B	11	2	$5Y : 1X$
C	7	3	$4Y : 1X$
D	4	4	$3Y : 1X$
E	2	5	$2Y : 1X$
F	1	6	$1Y : 1X$

Fig. 2.4 has quantity of goods on both axes. On the horizontal axis, quantities of good X are measured and on the vertical axis quantities of good Y are measured. Point A shows one combination of quantity of X and Y. All points like points A, B, C, D and E on an indifference curve show **same level of satisfaction**. That is, they are equally desirable to the consumer or he is indifferent between them. An indifference curve is labelled as I.

Also, any point below the indifference curve (point N) shows an **inferior** bundle. A **higher** indifference curve shows a greater amount of satisfaction and a **lower** one lesser satisfaction (Fig. 2.5).

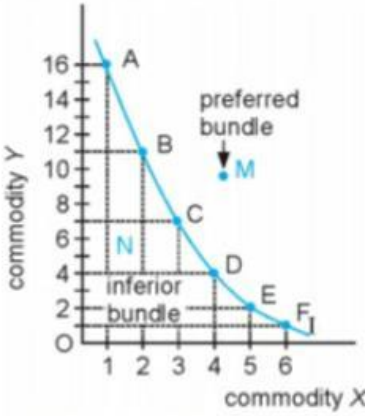

Fig. 2.4 An Indifference Curve: Preferred and Inferior Bundles

2.3.4 Indifference Map

A family of indifference curves is called an **Indifference Map.** It gives a complete picture of a consumer's scale of preference for two goods. Fig. 2.5 illustrates an indifference map. In the figure, indifference map is a set of four indifference curves I_1, I_2, I_3 and I_4 each of which is reflecting a different level of total utility. Higher the indifference curve, more is the level of utility. Arrow indicates that bundles on higher indifference curves are preferred by the consumer.

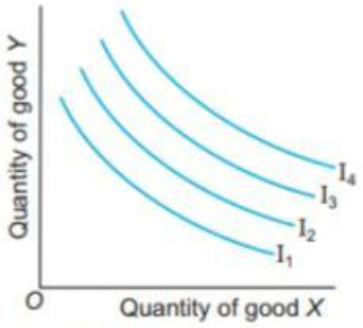

Fig. 2.5 An Indifference Map