Consumers' Behavior

This topic gives more detailed explanation of demand curve where we discuss the behavior of a rational consumer.

Rational consumer is a person who weighs up the costs and benefits to him or her of each additional unit of a good purchased or who does not stick with the certain consumption pattern but always looking for maximum satisfaction.

There are two different approaches to analyze rational consumer behavior i.e. *cardinal approach* which is based on marginal utility and *ordinal approach* which is based on indifference curves.

Cardinalist school postulated that utility can be measured. Some suggested it can be measured in monetary units, other suggested the measurement of utility in subjective units, called utils.

The ordinalist school postulated that utility is not measurable, but is an ordinal magnitude. Consumer does not need to know the utility of each unit but he has to rank the various baskets of goods according to the satisfaction that each bundle gives him. He must be able to determine the order of preference among the different bundles of goods.

Total and marginal utility

Total utility (TU) is the total satisfaction a person gains from all those units of a commodity consumed within a given time period. ***Marginal utility*** (MU) is the additional satisfaction gained from consuming one extra unit in a given time period.

Utility is a subjective concept which cannot be measured but for the convenience Economists generally use numbers.

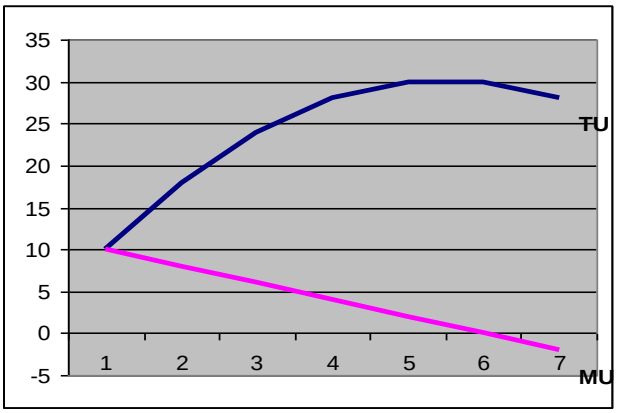
Secondly, utility depends on desires, more the desires higher will be the utility and vice versa

Principle of diminishing marginal utility

According to this principle, under the certain conditions as more units of a commodity are consumed, additional unit will provide less additional satisfaction than previous units.

It can be explained with the help of following fig.

Units	TU	MU
1	10	10
2	18	8
3	24	6
4	28	4
5	30	2
6	30	0
7	28	-2



As a consumer consumes additional unit TU increases and MU diminishes, but by consuming the 6th unit his MU approaches to zero. At this point he has maximum TU.Therefore, it is concluded a consumer gets maximum satisfaction at that point

where MU approaches to zero. Consumer should consume up to 6^{th} unit of the given commodity under the certain condition to maximize his total satisfaction.

Assumptions:

(a) Income is given.
(b) Prices are given too.
(c) Consumer will have to spend all of his income.
(d) No change in taste fashion and mind set.
(e) No change in the prices of related goods.
(f) There must be continuous consumption of the given good.

A rational consumer spend up to that extent where MUa=Pa, or in other words where.

$\frac{MUa}{Pa}=1$

If $\frac{MUa}{Pa}=1$

Then,

$\frac{MUb}{Pb}=1$

$\frac{MUc}{Pc}=1$

And

$\frac{MUn}{Pn}=1$, hence $\frac{MUa}{Pa}=\frac{MUb}{Pb}=\frac{MUc}{Pc}\cdots\cdots=\frac{MUn}{Pn}$

Principle of equi-marginal utility

Under the certain conditions, a consumer who is maximizing utility will allocate expenditures among products so that the utility obtained from the last pounds spent on each is equal.

A rational consumer allocate his resources in such a way where

$$\frac{MUa}{Pa}=\frac{MUb}{Pb}=\frac{MUc}{Pc}\cdots\cdots=\frac{MUn}{Pn}$$

if $\frac{MUa}{Pa}>\frac{MUb}{Pb}$, consumer will spend more on product 'a' and draw his resources from 'b' until $\frac{MUa}{Pa}=\frac{MUb}{Pb}$.

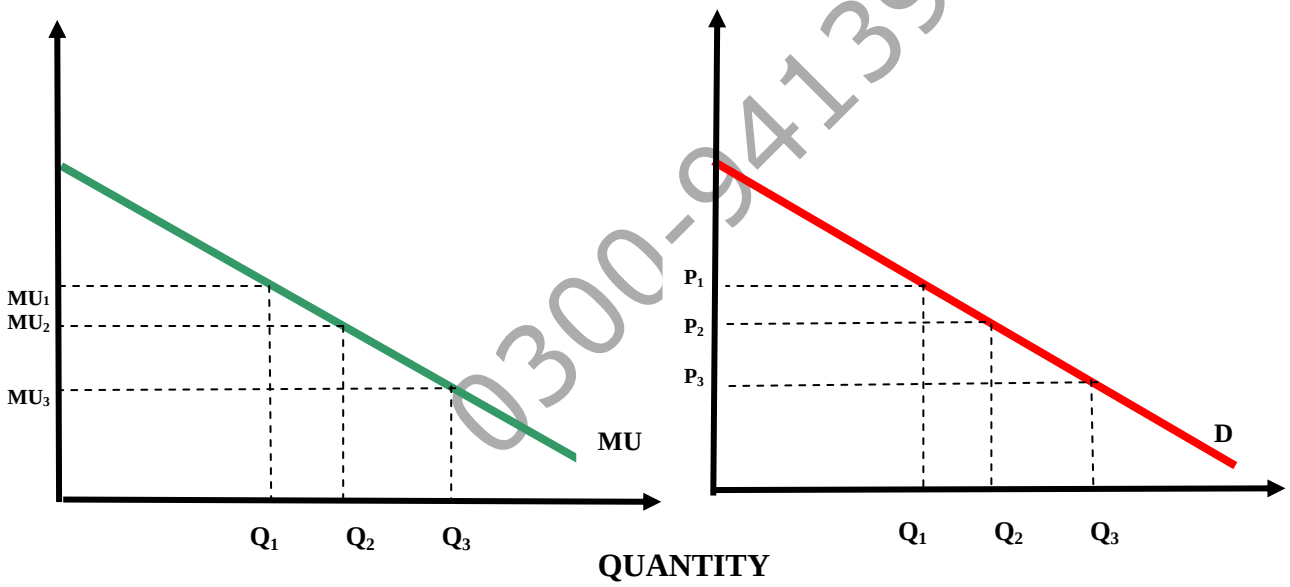
Limitations

Firstly, utility is a subjective concept, so it cannot be measured, although we use numbers for the convenient.
Secondly, it is difficult to measure MU of each and every item in the given basket.
Thirdly, this theory is applicable on those goods which are divisible, but if goods are not divisible application of this theory is difficult.

Fourthly, time period does matter in this theory. There are few goods which are longer lasting, whereas on the other hand we have perishable items. Therefore it is difficult to make the comparison between the marginal utilities of these goods.
Fifthly, this theory is not applicable on certain goods. There marginal utility may be increased as we have more of them. For instance, antiques, hobbies, jewelry, wealth./
Sixthly, this theory is drawn under certain conditions which cannot be kept constant.
Lastly, consumers are generally ignorant of such theories, therefore, such laws do not hold.

Marginal utility and demand curve

As we know, there is an inverse relation between price and demand i.e. as price increases, demand decreases and vice versa. On the other hand as consumer consumes an additional unit of a product his MU diminishes. A rational consumer pays according to the MU he could derive from an additional unit. As MU diminishes of an additional unit he will never pay the same price for that. This is why demand curve is negatively sloped because of diminishing MU or in other words demand curve and MU curves are the same.



Paradox of value

The **paradox of value** (also known as the **diamond–water paradox**) is the apparent contradiction that, although water is on the whole more useful, in terms of survival, than diamonds, diamonds command a higher price in the market. In explaining the diamond-water paradox, marginalists explain that it is not the total usefulness of diamonds or water that matters, but the usefulness of each unit of water or diamonds. It is true that the total utility of water to people is tremendous, because they need it to survive. However, since water is in such large supply in the world, the marginal utility of water is low. In other words, each additional unit of water that becomes available can be applied to less urgent uses as more urgent uses for water are satisfied. Therefore, any particular unit of water becomes worth less to people as the supply of water increases. On the other hand, diamonds are in much lower supply. They are of such low supply that the usefulness of one diamond is greater than the usefulness of one glass of water, which is in abundant supply. Thus, diamonds are worth more to people. Therefore, those who want diamonds are willing to pay a higher price for one diamond than for one glass of water, and sellers of diamonds ask a price for one diamond that is higher than for one glass of water.

Utility theory and wealth

According to one school of thought diminishing marginal utility is not applicable on wealth but another school of thought says it is applicable even on money and wealth. It can be judged through behavioral changes in consumers' spending pattern. For example, one can spend recklessly if she has lot of money to spend but another group which earn low income will spend each dollar with all care. This behaviour

helps out government to levy taxes. Through progressive taxation, high tax rate is charged to high income group and low tax rates are charged to low income group.

Indifference curves theory

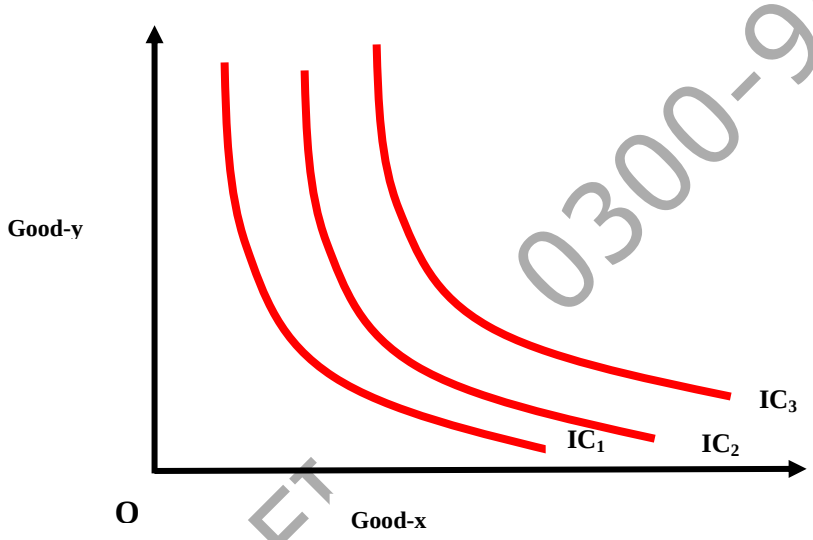
This is an ordinal approach to analysis the behaviour of a consumer. Indifference curve shows all combinations of products that yield the same satisfaction to the consumer; the consumer is indifferent between the combinations indicated by any two points on one indifference curve.

In the following diagram each curve shows a certain level of satisfaction. As curves shift rightwards, level of satisfaction increases. On an indifference curves map we have many curves which shows different level of satisfaction. Indifference curves have three important characteristics;

(i) Indifference curve is downwards sloping which shows increase in the consumption of one good reduces consumption of the other goods.

(ii) These curves convex towards origin which shows continuous fall in the opportunity cost of each good. It is also called as ***diminishing marginal rate of substitution (DMRS).***

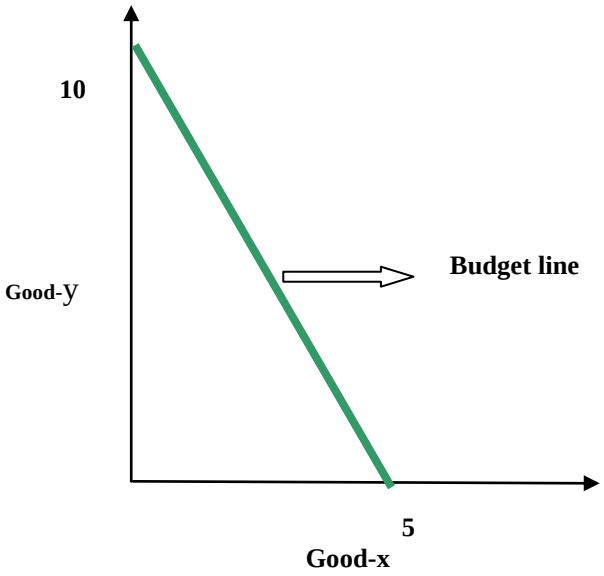
(iii) These curves are non-intersecting, because if curves intersect each other it shows similar level of satisfaction even on different curves which is not possible.



Budget Line

Budget line shows all the various combinations of any two products which can be purchased, given the prices of the products and the consumer's money income. For example, if income of a consumer is $10 and price of a product 'x' is $2 whereas price of the product 'y' is $1, he can purchase one of the following combinations.

Combinations	Units of X	Units of Y
A	0	10
B	1	8
C	2	6
D	3	4
E	4	2
F	5	0



By joining all the given combination we have the curve which is called a budget line. The slope of the curve is equal to $\frac{Py}{Px}$ which is '2' in the above mentioned data.

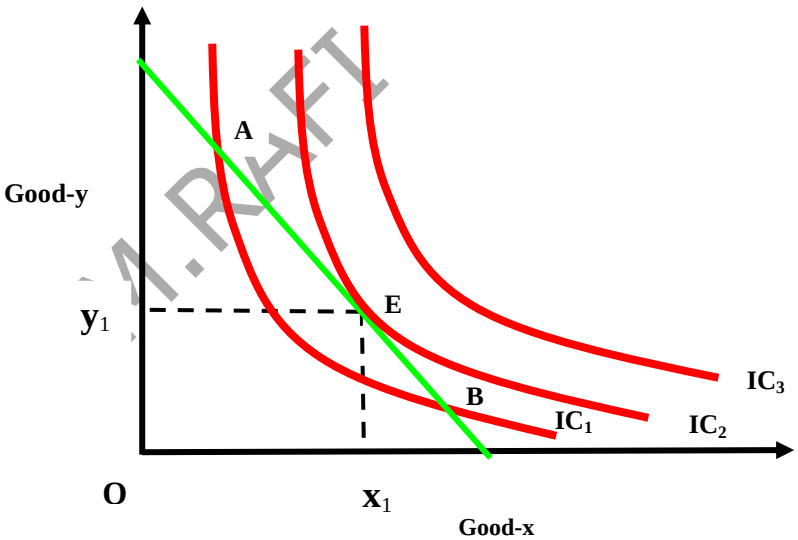
Assumption:

(a) Income is given
(b) Goods are given
(c) No change in prices of given goods
(d) Consumer will have to spend all of his income.

Consumer's Equilibrium

A consumer is in equilibrium at that point where budget line makes tangent with the indifference curve.

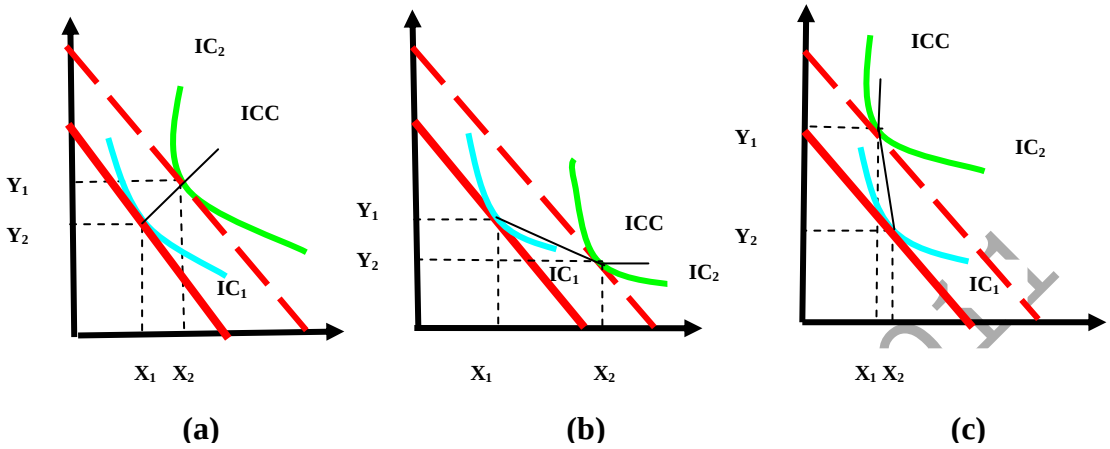
At this point $\frac{Py}{Px}$ =MRS (***marginal rate of substitution***)



In the above fig. consumer is in equilibrium at point 'E' where budget line making tangent with **IC_2**. Although point 'A' or 'B' are attainable but at E he derives maximum utilities.

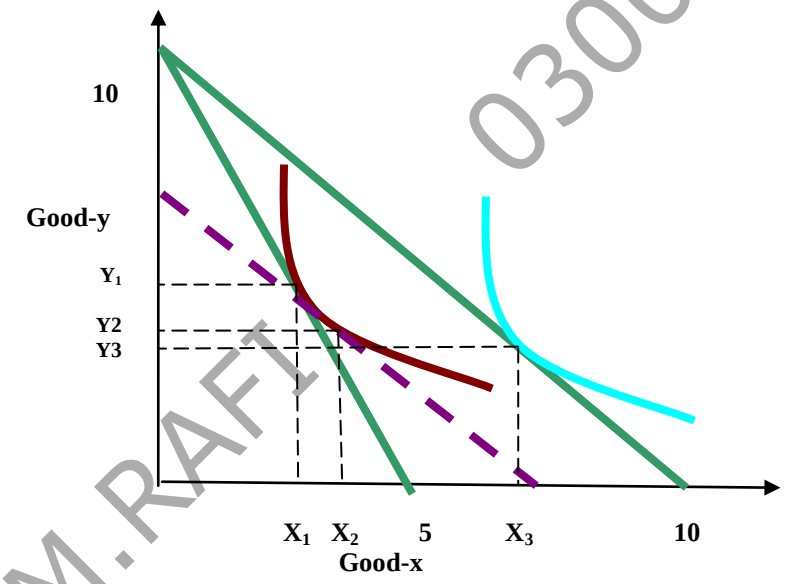
Income effect

As income increases consumer can buy more of the both of the goods, therefore budget line shifts rightwards. Now, combinations on IC_3 are also attainable. In the model there are three possibilities, (a) an equal increase in the consumption of the both of the goods (b) increase in the consumption of good-x only and (c) an increase in the consumption of good-y only.



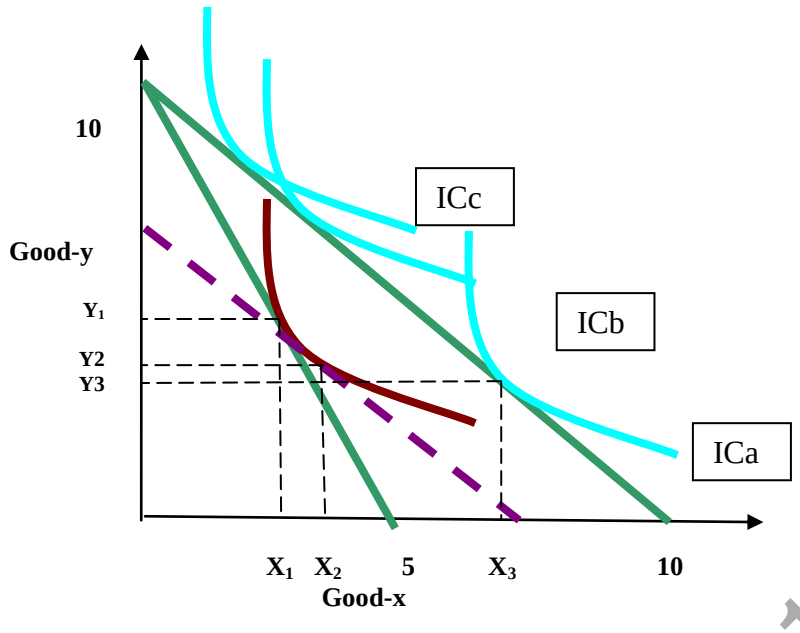
Substitution effect

According to this if price of a product falls, consumer prefer to consume more of the product and less of the other. For instance, in the above mentioned example, if price of good-x falls to $1 and there is no change in the price of good-y, budget line will be pivoted at 'y'.



Price effect (P.E = S.E + Y.E)

Substitution effect is always positive i.e., increase in the consumption of that good which price has fallen; where as income effect may be positive or negative. Real income rises as price of one of the good is fallen, it is positive if there is an increase in the consumption of the good and negative if there is a fall in the consumption of the good which price has fallen.



In the above fig. If consumer moves to ICa, it shows positive income effect. If consumer moves to ICb, it shows negative income effect but it is out weighted by positive substitution effect but the movement towards ICc shows strong negative income effect which has been out weighted positive substitution effect.