Consumer Preferences and Choice

Consumer behaviour

- The function of a theory of consumer's behaviour is to establish a relationship between quantity demanded of a good and price of that good etc.
- Theories are:
  - Cardinal utility analysis
  - Ordinal utility analysis

Assumptions of CU

- Cardinal measurability of Utility(utility can be measured in terms of money)
- Independent utilities(utility additive in nature)
- Constancy of the Marginal Utility of Money
- Introspective method

laws

- Law of diminishing marginal utility
- Law of equi-marginal utility

Law of Diminishing Marginal Utility

- The more of a good an individual consumes per time period, other things constant, the smaller the increase in total utility from additional consumption
- That is, the smaller the marginal utility of each additional unit consumed
- This applies to all consumption

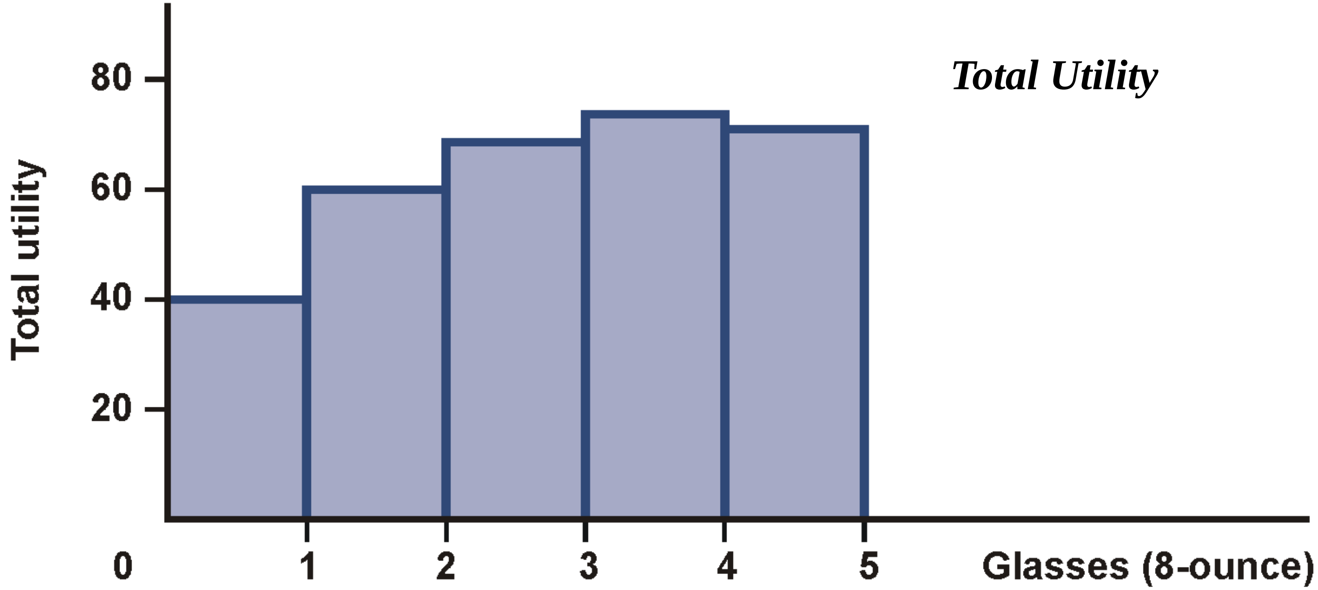
Utility Derived from Water

Units of Water Consumed (8 ounce glass)	Total Utility	Marginal Utility
0	0	-
1	40	40
2	60	20
3	70	10
4	75	5
5	73	-2

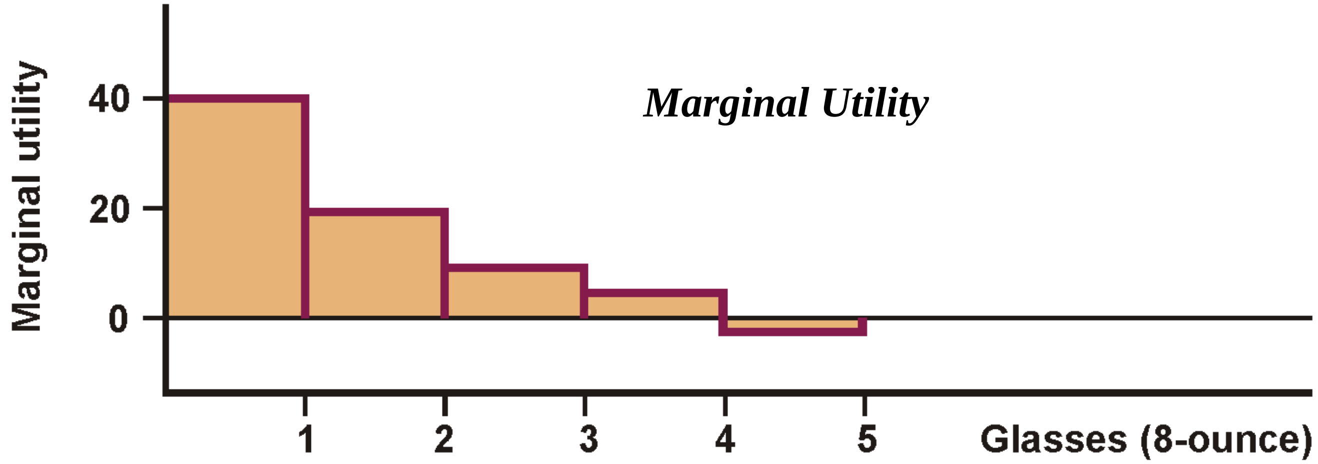
The first column lists possible quantities of water a person might consume after running on a hot day. The second column presents the total utility derived from that consumption and the third column presents the marginal utility of each additional glass of water consumed ➔ change in total utility from consuming an additional unit.

Total and Marginal Utility

Because of diminishing marginal utility, each glass adds less to total utility ➔ total utility increases for the first four glasses but <u>at a decreasing rate</u>

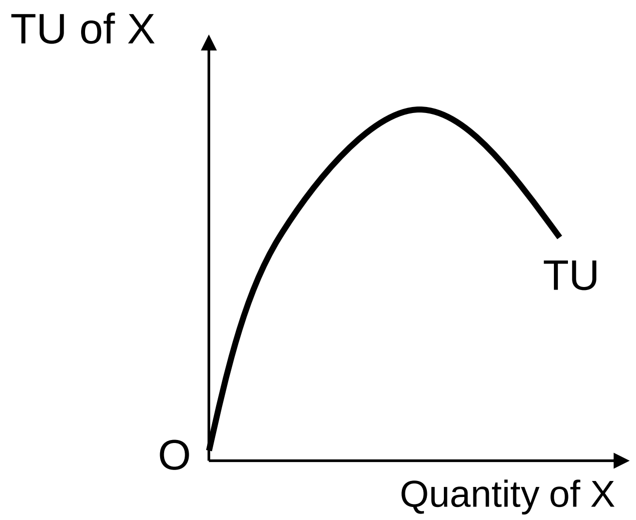


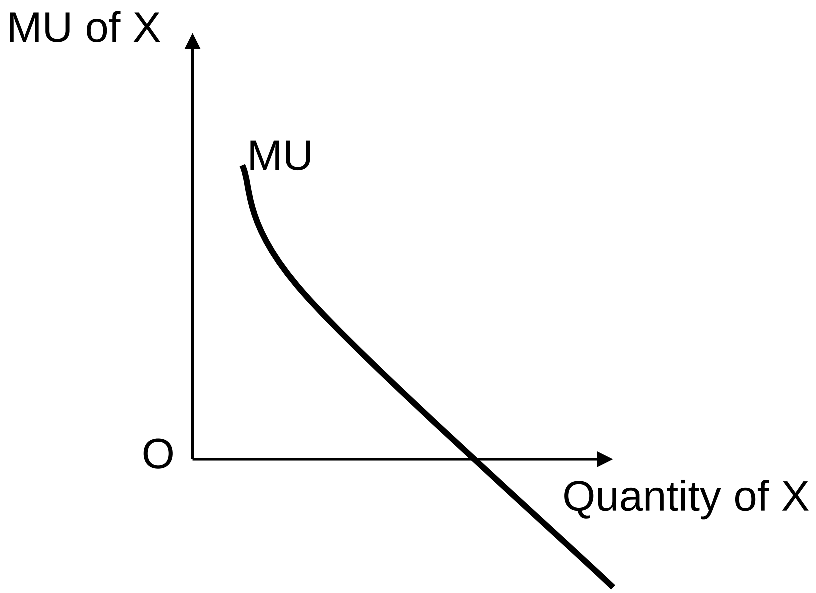
In our example, diminishing marginal utility begins with the very first unit as seen by the pattern of marginal utility



Cardinal Utility Analysis

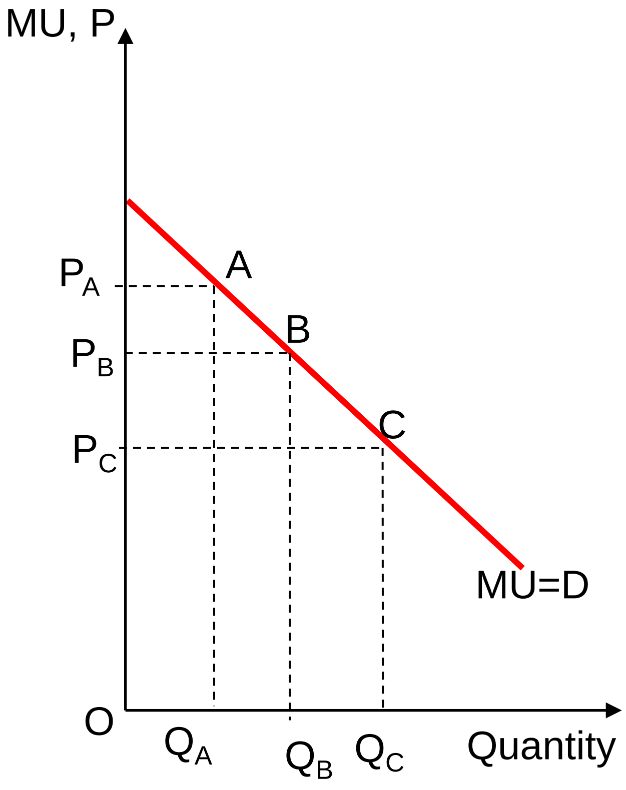
- Law of Diminishing Marginal Utility
  - Marginal utility for successive units consumed goes on decreasing.
  - When the good is consumed in standard quantity, continuously and in multiple units and the good is not addictive in nature.
- The following diagrams show Total Utility (TU) and Marginal Utility (MU) curves





Marginal Utility and Demand Curve

- MU curve is downward sloping.
- For any given amount of income when price of the commodity is P_C, the consumer would consume Q_C quantity of the commodity (point C on the MU curve, where MU= P_C)
- When price increases to P_B, the consumer has to readjust consumption to restoring level of utility.
- the new equilibrium is at point B on the MU curve where MU= P_B
- As price goes on increasing, the desired consumption of the commodity for the consumer goes on diminishing and vice versa.
- Points A, B, C, and so on, would thus lie on the demand curve of the consumer for the commodity.



Cardinal Utility Analysis

- Law of Equimarginal Utility
  - Marginal utilities of all commodities should be equal
    - The consumer has to distribute his/her income on different commodities so that utility derived from last unit of each commodity is equal for all other commodities in the consumption basket.

    - Mathematically: $$\frac{MUx}{Px} = \frac{MUy}{Py} = \ldots = MU_M$$

Units of Water Consumed (8 ounce glass)	Marginal Utility Y	Marginal UtilityX
0	24	-
1	21	40
2	18	20
3	15	10
4	9	5
5	3	-2

Ordinal Utility Analysis

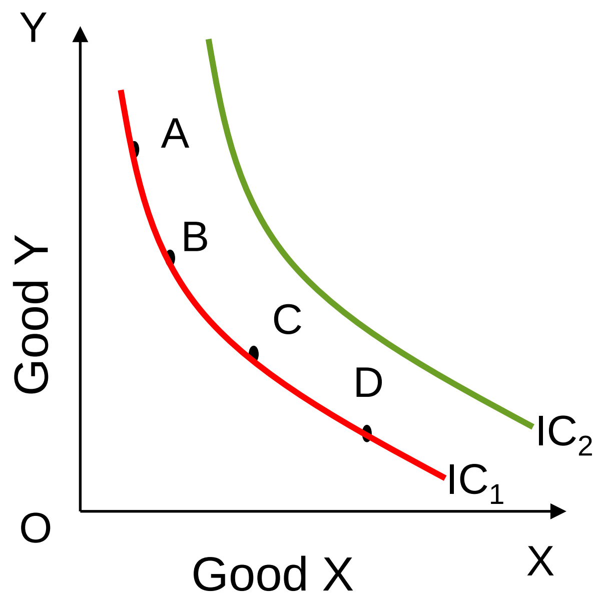
- Edgeworth, Fisher.
  - Notions of preference or indifference.
  - Ordinal Utility.
- **Indifference Curve Analysis** (J.R. Hicks and R.G.D. Allen)
  - **Indifference curve**

    (indifference schedule)
  - **Indifference map**

  - **Assumptions of Indifference curve:**
  - More of a commodity is better than the best.
  - Assumption of Transitivity.
  - Diminishing Marginal rate of substitution.

Properties of Indifference Curves

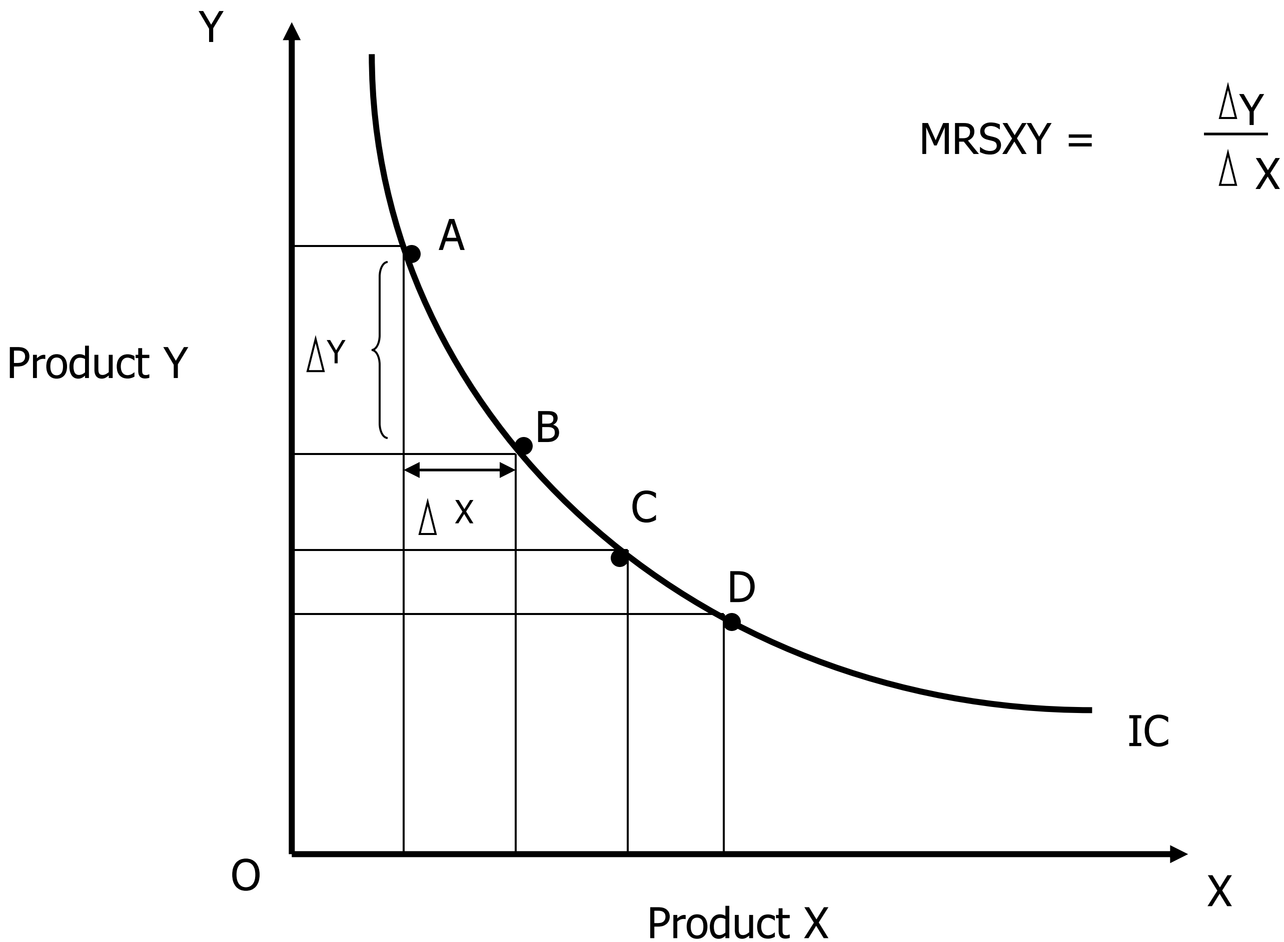
- Indifference curves are downward sloping.
- Higher indifference curve represents higher utility.
- Indifference curves can never intersect.
- Indifference curves are convex to the origin.



Marginal Rate of Substitution

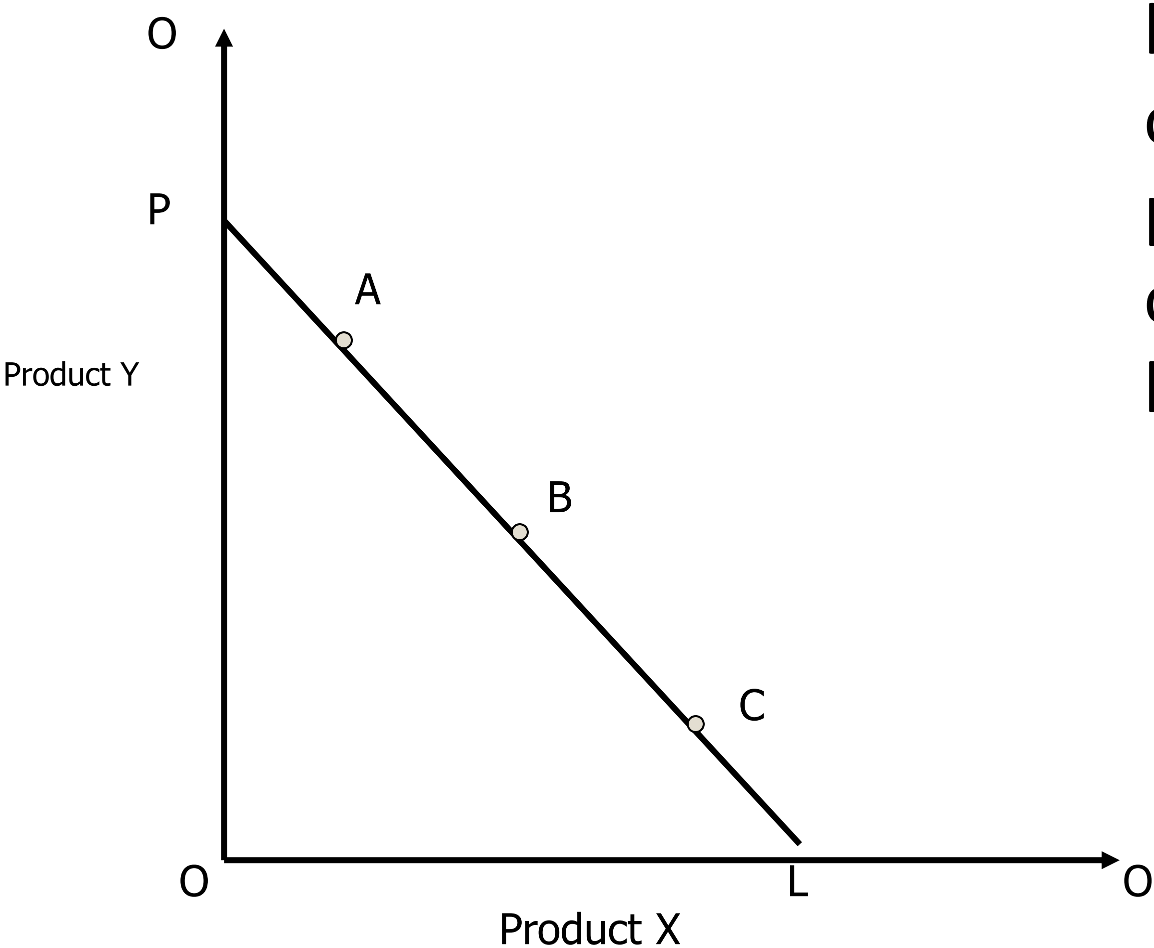
- MRS is the rate at which the consumer is prepared to exchange good M and N, down the indifference curve.

$$MRS_{MN} = -\frac{\Delta N}{\Delta M}$$


Y
MRSXY = ΔY/ΔX
A
ΔY
Product Y
B
Δ X
C
D
IC
O
X
Product X

combination	**M**	**N**	**MRS**
A	1	6	-
B	3	3	1.5
C	4	2	1.0
D	7	1	0.3

Budget Constraint

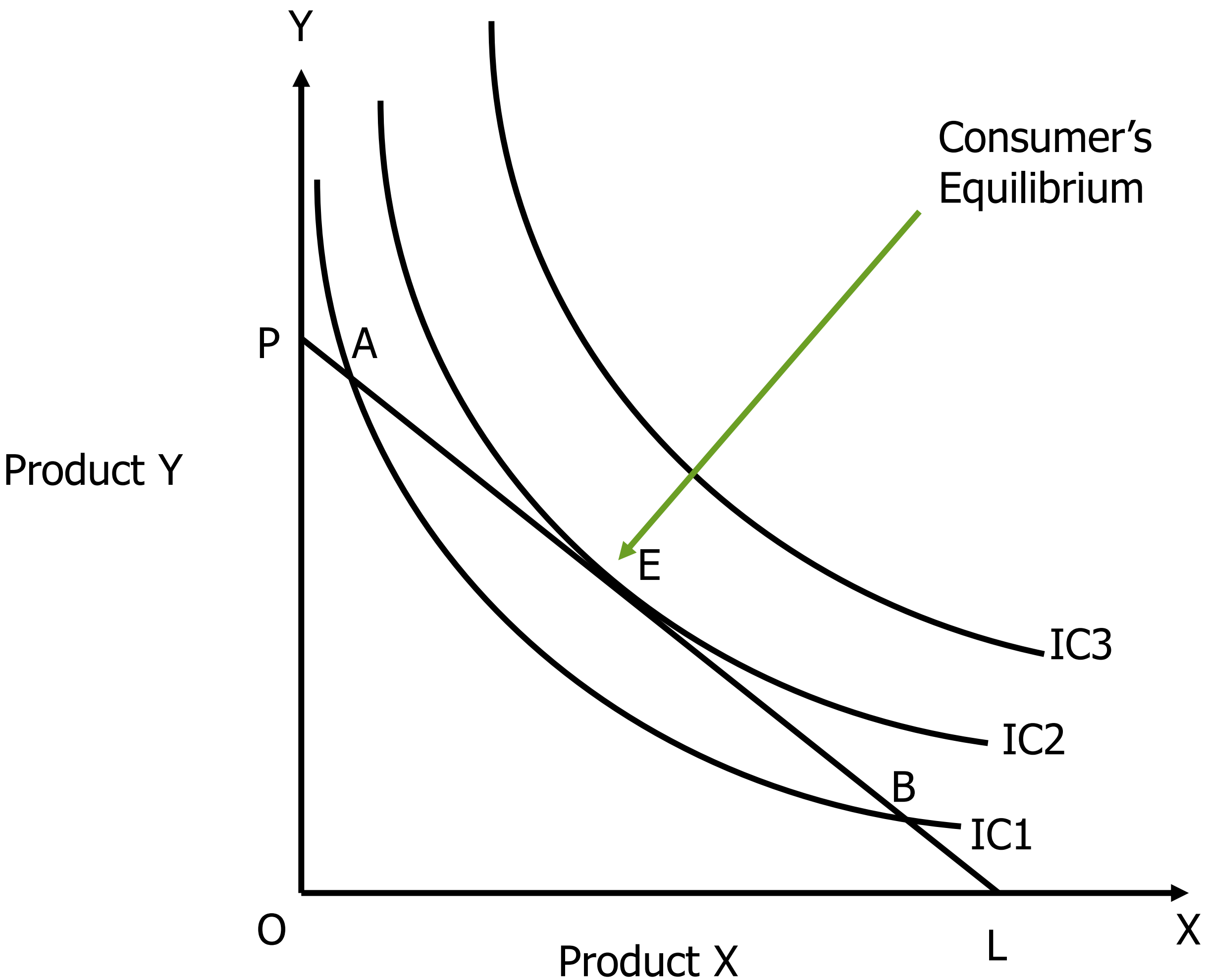


- It also known as price line which show combination of two product that a consumer buy with his given income.

Consumer's Equilibrium

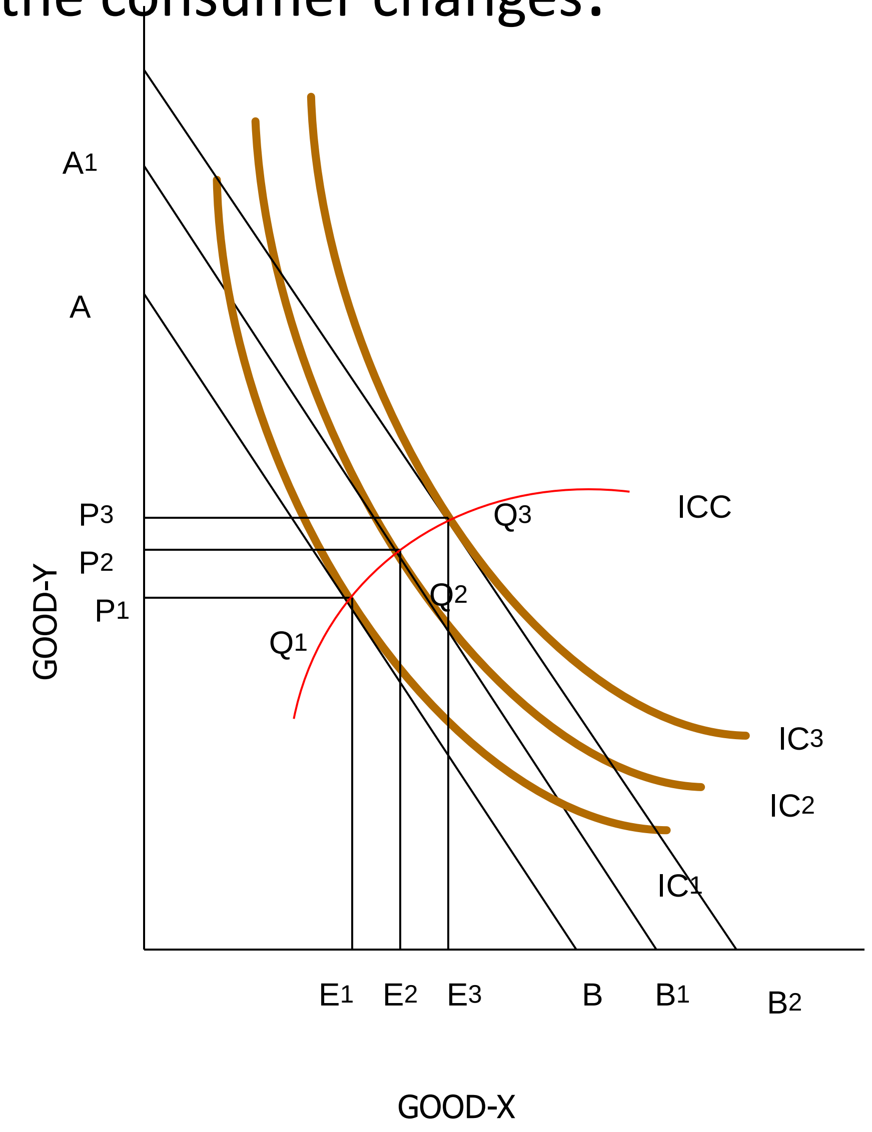
- Price Line should be tangent to indifference curve that is Slope of PL = Slope of IC curve
- At the point of tangency IC curve should be convex to the origin

Consumer's Equilibrium

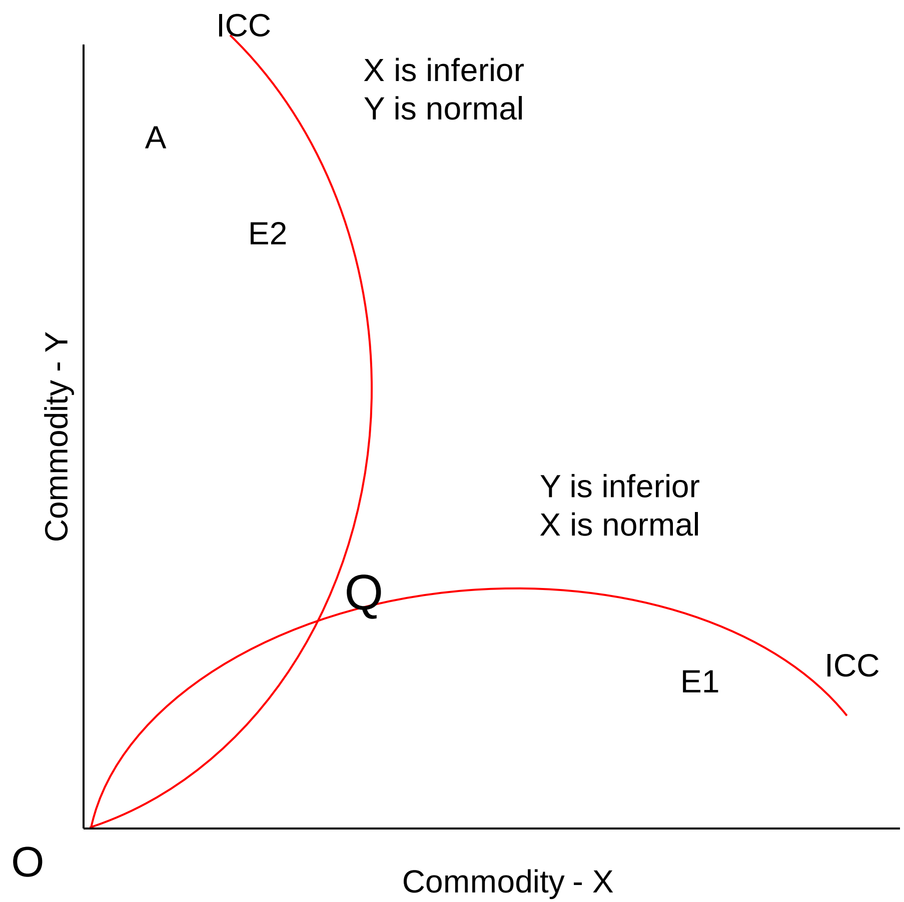


Income effect

When income of the consumer changes:

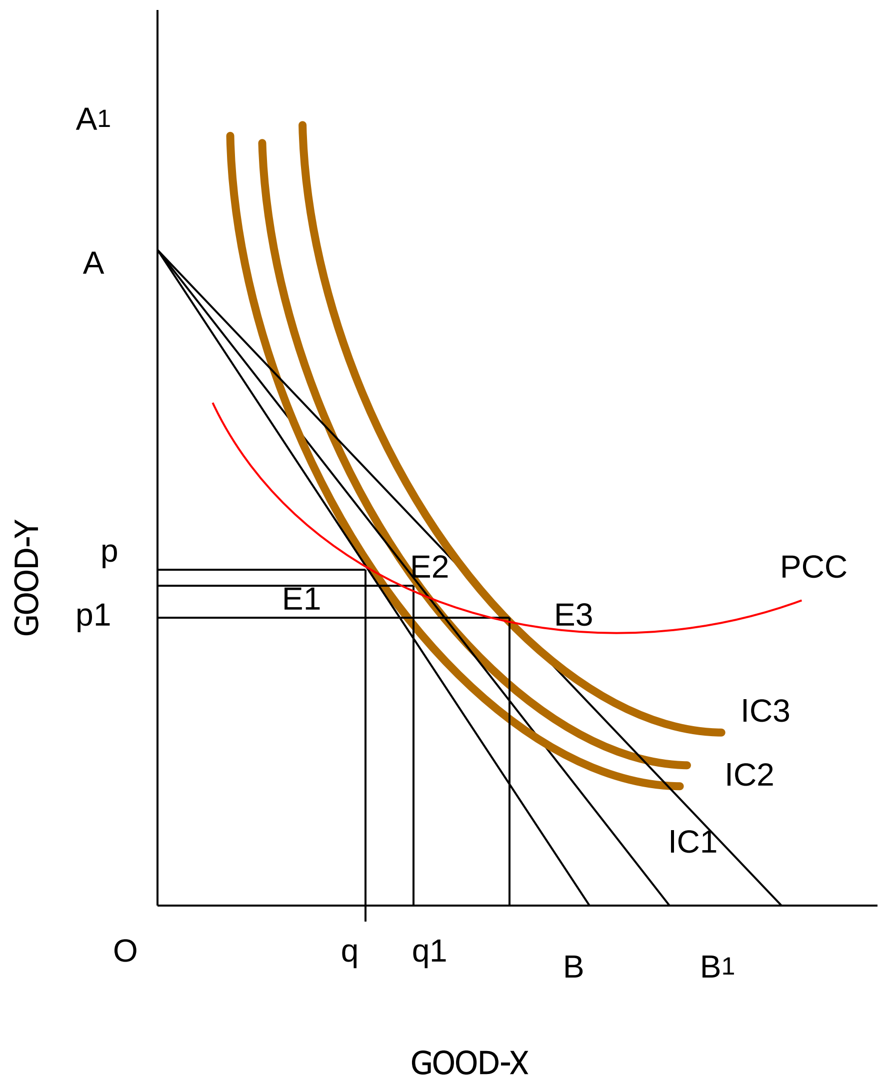


Income consumption curve of ***inferior goods***



Price effect

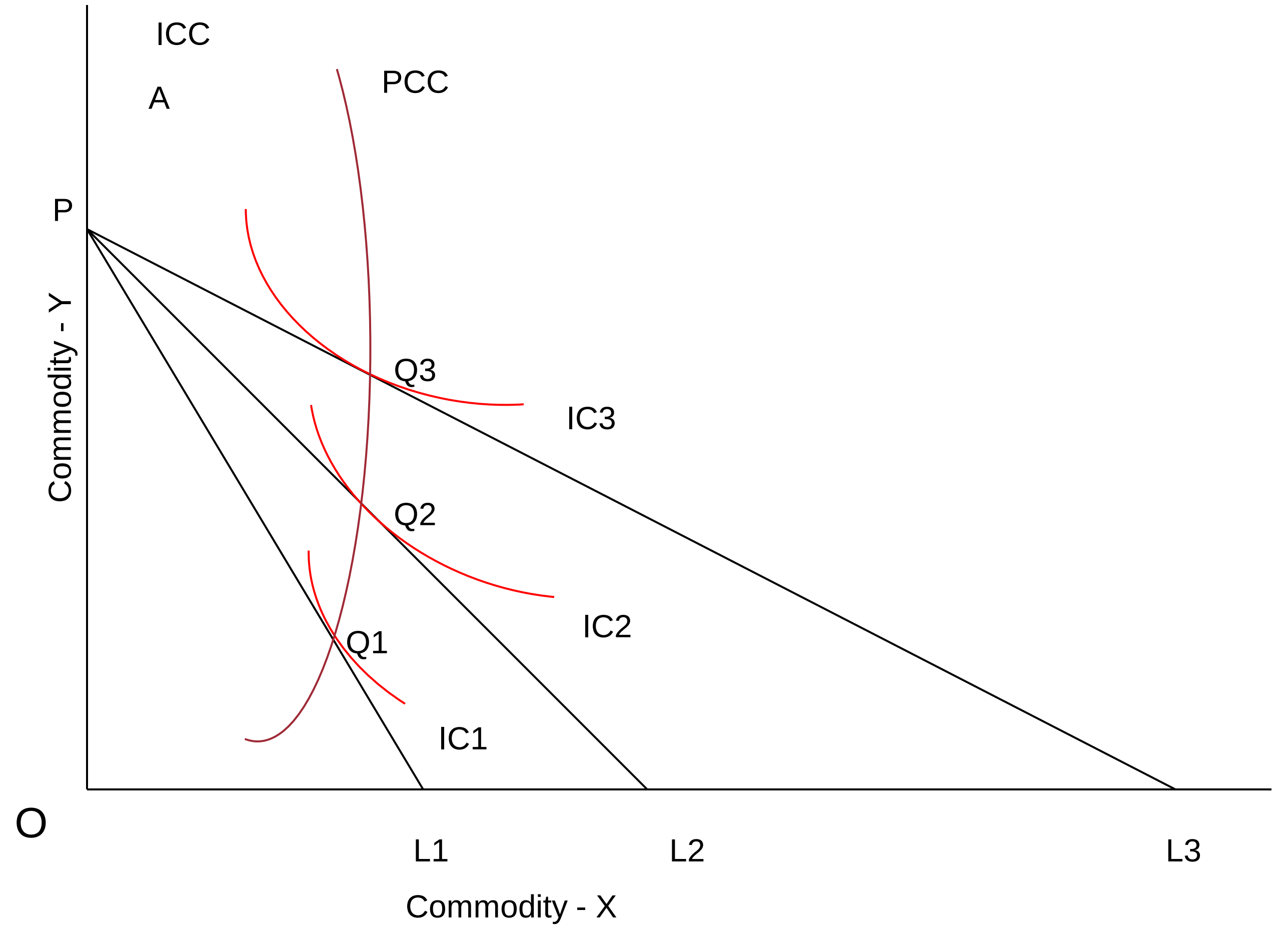
When price of good x falls.



IN CASE OF GIFFEN GOODS

Backward sloping PCC

In case of Giffen goods



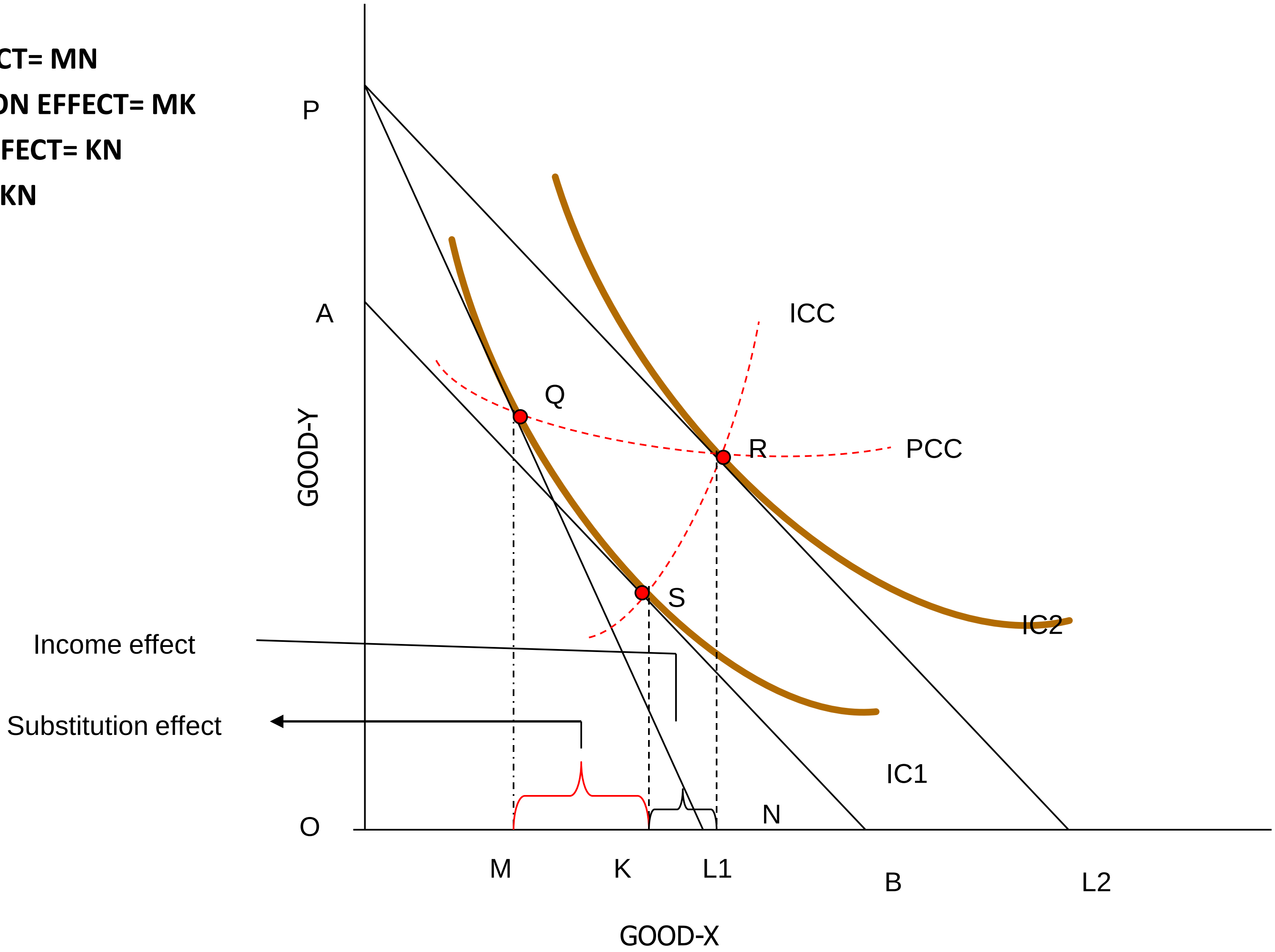
BREAKING OF PRICE EFFECT INTO INCOME AND SUBSTITUTION EFFECT:
COMPENSATING VARIATION IN INCOME

PRICE EFFECT= MN

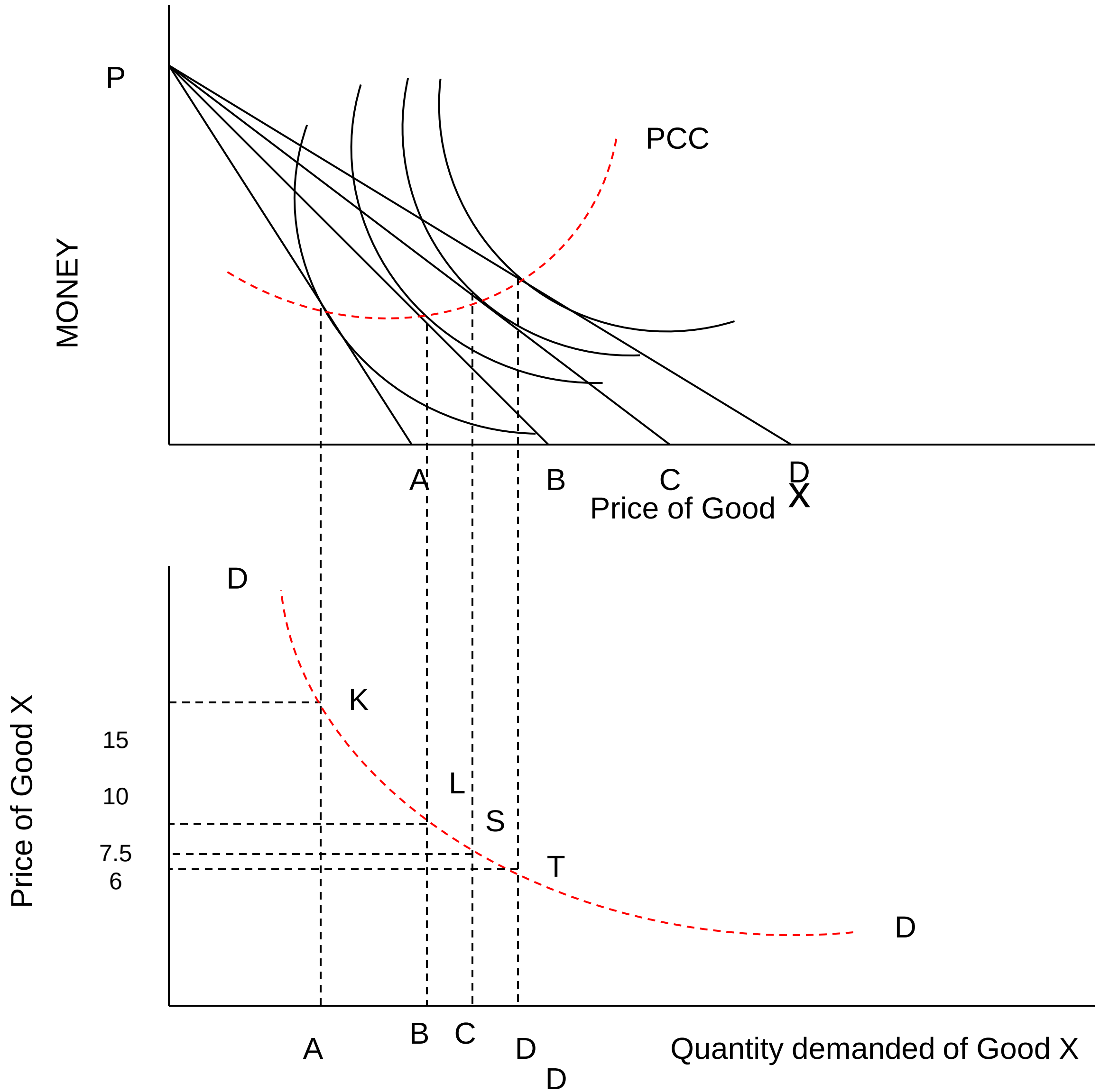
SUSTITUTION EFFECT= MK

INCOME EFFECT= KN

MN= MK + KN



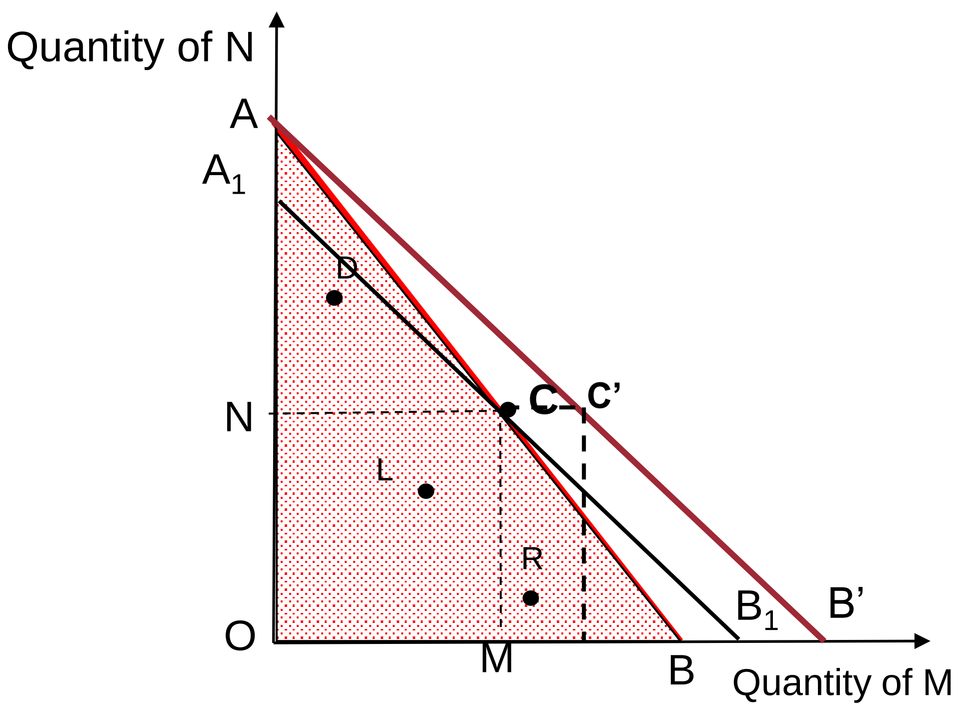
DERIVATION OF ***INDIVIDUAL DEMAND*** CURVE FROM INDIFFERENCE CURVE



Revealed Preference Theory

- Samuelson came up with an approach to assessing consumer behaviour and introduced the term *'revealed preference'*.
- The basic hypothesis of the theory is *'choice reveals preference'.*
- It is the actual behaviour study of the consumer.
- This gives us a demand curve for an individual consumer on the basis of observed behaviour.

Revealed Preference Theory

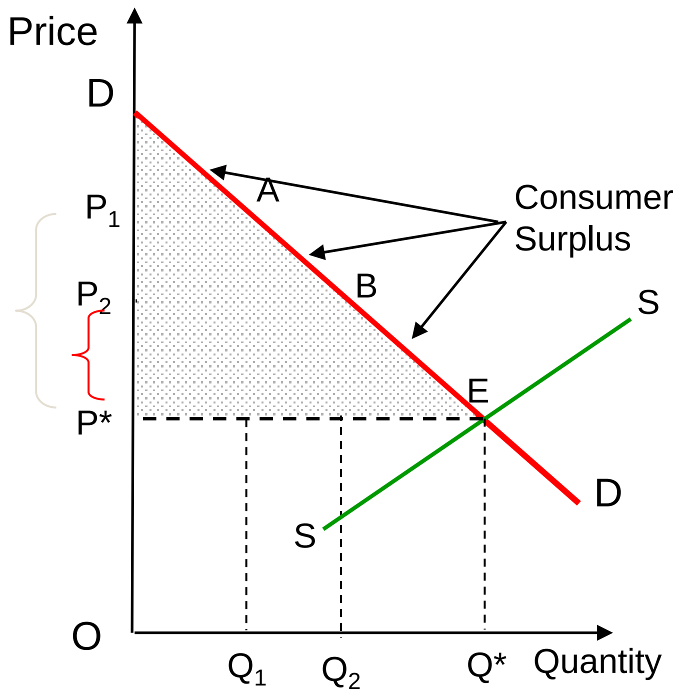


Consumer Surplus

" Consumer surplus is the difference between what consumer would like to pay for a product and what actually pays."

Units	MUx	Px	C.S.
1	50	20	30
2	40	20	20
3	30	20	10
4	20	20	0
5	10	20	-10

Consumer Surplus



Consumer Surplus

- The difference between the price consumers are willing to pay and what they actually pay is called consumer surplus.
- Individual consumer surplus measures the gain that a consumer makes by purchasing a product at a price lower than what he/she had expected to pay.
- In a market the total consumer surplus measures the gain to the society due to the existence of a market transaction.