Economics:

The word economics is derived from Greek words, oiko and nomos meaning home and management respectively. We can also say that economics is the management of household affairs where household can be your house, company, country, etc.
Definition of economics can be "Economics is a social science that studies the production, distribution, and consumption of goods and services".

Types:

There are two basic types of economics:

1. **Microeconomics:** Microeconomics studies the decisions of individuals and firms to allocate resources of production, exchange, and consumption. Microeconomics deals with prices and production in single markets and the interaction between different markets.
2. **Macroeconomics:** Macroeconomics focuses on the performance of economies – changes in economic output, inflation, interest and foreign exchange rates, and the balance of payments.

Schools of Thoughts:

1. **Classical School of Thought:** This school of thought was given by Adam Smith, also known as "father of economics", in 1776. The main idea of the Classical school was that markets work best when they are left alone, and that there is nothing but the smallest role for government. This approach has a strong belief in the efficiency of free markets to generate economic development. Markets should be left to work because the price mechanism acts as a powerful 'invisible hand' to allocate resources to where they are best employed. In terms of explaining value, the focus of classical thinking was that it was determined mainly by scarcity and costs of production. This school of thought was then countered by Neo-Classical school of thought.
2. **Neo-Classical School of Thought:** This theory was given by Alfred Marshal in 1890. He also wrote a book named "the principles of

economics" which further described his thought. He said that economics is a science in which we study materialistic welfare. He was criticized for saying so because it talked about materialistic welfare which isn't as important as the main point of economics that is "satisfaction". Another point for criticism was that he totally ignored non-materialistic welfare.

3. **Modern School of Thought:** This theory is given by Lionel Robbins in 1932. He wrote a book named "An Essay on the Nature and Significance of Economics". This theory is one still used today. He gave the definition that "economics is a science in which we study the relationship between wants and scarce resources which have alternative uses". It is the basic definition of economics. "Needs" can be fulfilled but "wants" are never fulfilled so that's why he discusses unlimited wants which is human nature.

Three Basic Problems/Questions of Economics:

1. **What to produce?** This question addresses the allocation of resources among different goods and services. For instance, a smartphone manufacturer might decide to allocate resources towards producing either a new model with enhanced features or a budget-friendly version to cater to different consumer preferences.
2. **How to produce?** This question focuses on the choice of production methods and techniques. An automobile manufacturer might decide whether to use traditional assembly line methods or invest in robotics and automation to streamline production and reduce costs.
3. **For whom to produce?** This question considers the distribution of goods and services among consumers. A bakery might decide whether to offer discounts or promotions to attract budget-conscious customers or focus on premium products for customers willing to pay a higher price for quality.

Scarcity:

Scarcity refers to the fundamental economic problem of limited resources relative to unlimited wants and needs. In other words, there are not enough resources available to produce all the goods and services that individuals desire. It is a universal concept. Scarcity can change with respect to time and place. Scarcity can make us or force us to make certain choices. Scarcity can also result in competition & conflict.

Consumer Behavior:

The behavior of the people with regard to selection, purchase and consumption of goods & services for satisfaction of their wants is known as consumer behavior.

According to modern economics, there are some definite principles that a consumer follows. He doesn't roam about the market and buy whatever's available at any price. Before going to the market, he takes many points into consideration. Like, what commodity/good he would like to consume. For this, he compares the satisfaction/utility he expects from each commodity according to his taste. Since he knows he can't get everything he wants, he arranges the desired commodities in the order of the preference. Then, he looks at the amount of money he has with hi, that he can spend. We all know that it is a universal fact that money can never be enough to buy everyone one desires. Last but not the least, he looks at the price of commodities/goods available in the market and when he realizes he can't buy everything he wants, he shortens the list by selecting only those goods that promise greater utility. Every consumer that always try to get the maximum satisfaction with the less amount of budget he has and such a consumer is called a **rational consumer**.

Utility:

Goods are demanded because they have utility. We can define it as "Utility is the satisfaction that a person gets from consumption of a good or service".

Features/Characteristics of Utility:

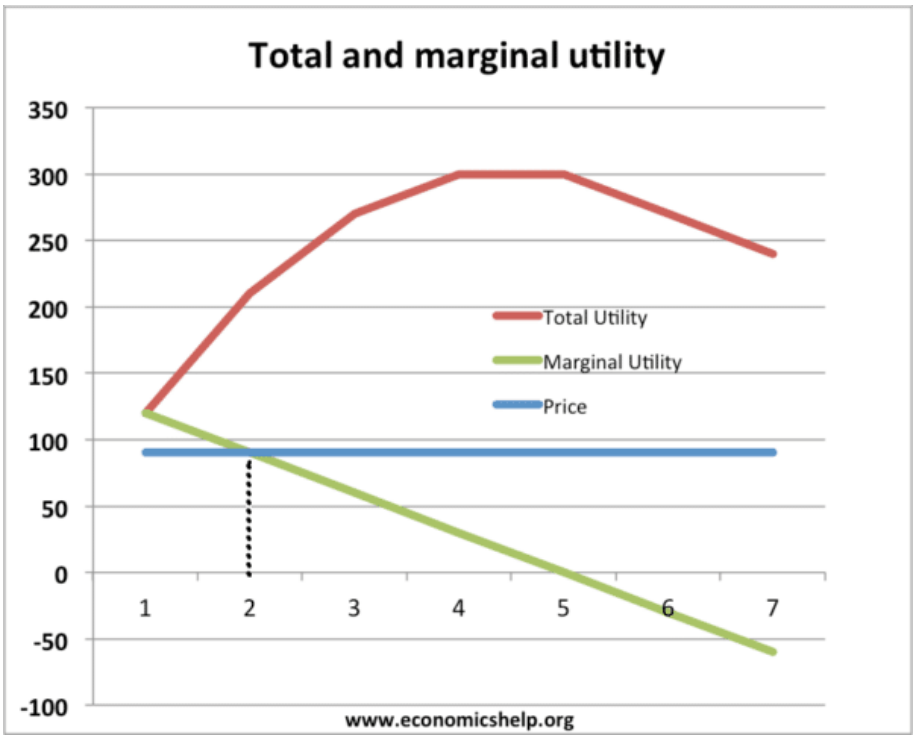
1. **Relative Term:** Utility is a relative term because it varies from person to person and situation to situation. What one individual finds useful or valuable may not be the same for another person.
2. **Depends upon Intensity of Wants:** The greater one person wants something, the greater utility/satisfaction he will receive from it.

   $$\text{Utility} \propto \text{Intensity of Wants}$$
3. **Subjective:** Utility is subjective as we can't exactly measure how much utility a person receives when his want is fulfilled.
4. **Different from Usefulness:** Utility is fullness of wants (wants can be good or bad). It isn't guaranteed that utility will always prove to be useful.
5. **Basis of Demand:** Utility is based on demand as if a person demands, only then there can be utility.

Kinds of Utility:

1. **Total Utility:** Total utility is the total amount of satisfaction a person derives from consume some good.
2. **Marginal Utility:** Marginal utility is the change in utility due to consumption of one more unit of a good.

Quantity (Q)	Total Utility	Marginal Utility
1	120	120
2	210	90
3	270	60
4	300	30
5	300	0
6	270	-30
7	240	-60



In the above example, total utility (300) is maximized after just four pieces of chocolate cake.

The fifth piece of chocolate cake gives zero marginal utility, so we are indifferent between 4 pieces and five pieces.

However, if we eat the sixth piece of chocolate cake, we start to feel ill – and so we get negative utility

3. **Zero Utility:** Zero utility means that the consumer has no further desire for the commodity.
4. **Negative Utility:** Negative utility is when desired are finished and you consume extra utilities that you end up getting unsatisfied.

Approaches of Utility:

Cardinal Approach:

This approach was given by Alfred Marshal in 1890. This approach says that utility can be measured in numbers. There are two laws in cardinal approach:

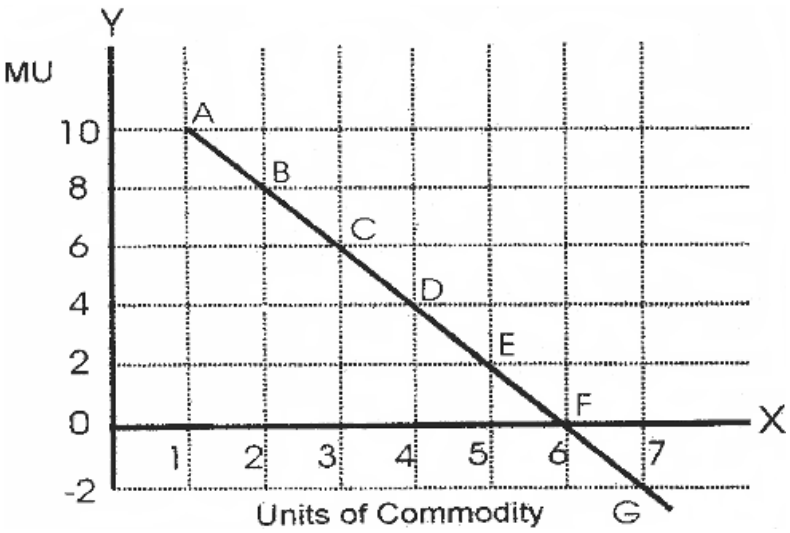
1. **Law of Diminishing Marginal Utility:** The law of diminishing marginal utility states that all else equal, as consumption increasing, the marginal utility derived from each additional utility decreases. There is a Latin phrase "Ceteris Paribus" meaning that we are considering the additional satisfaction from consuming more of a good while assuming all other factors remain unchanged.

   Assumptions:

   - Commodity should be homogeneous in quality & quantity.
   - Taste & liking of the consumer remains the same.
   - Income of the user remains unchanged.
   - Consumption should be in normal units.
   - Consumption should be continuous.

   Table & Graph:

Units of commodity	Marginal utility	Total utility
1st glass	10	10
2nd glass	8	18
3rd glass	6	24
4th glass	4	28
5th glass	2	30
6th glass	0	30
7th glass	-2	28

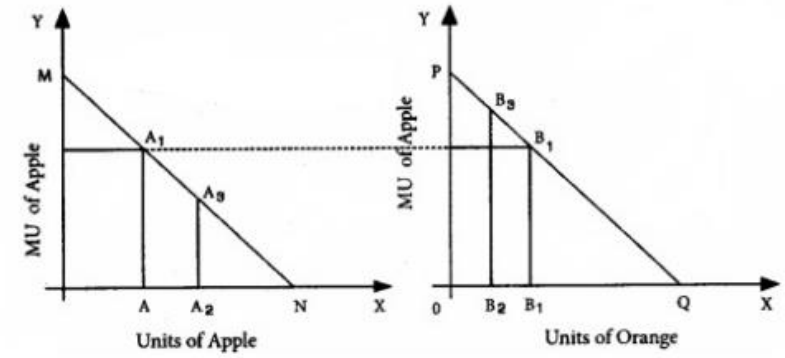


We assume that a man is very thirsty. On taking the 1st glass of water, the consumer gets 10 units of utility, because he is very thirsty. When he takes 2nd glass of water, his marginal utility goes down to 8 units because his thirst has been partly satisfied. This process continues until the marginal utility drops down to zero which is the saturation point. By taking the seventh glass of water, the marginal utility becomes negative because the thirst of the consumer has already been fully satisfied.

2. **Law of Equi-Marginal Utility:** Total utility from a given amount is maximum when it is spent of various goods in such a way that marginal utility of money spent on each good becomes equal.
   Assumptions:
   - Consumer has a fixed amount to spend.
   - Only two goods are bought by the consumer.
   - Price of the two goods/commodities must be the same.
   - Goods/commodities must be heterogeneous.

The law of the Equi-marginal utility

Units of commodities	Apple		Orange	
	Total Utility	Marginal Utility	Total Utility	Marginal Utility
1	25	25	30	30
2	45	20	41	11
3	63	18	49	8
4	78	15	54	5
5	88	10	58	4
6	92	4	61	3



Let us assume that the consumer has a given income of Rs. 11. He wants to spend this entire income (i.e. Rs. 11) on apples and oranges. The price of an apple and the price of an orange is Rs. 1 each.
If the consumer wants to attain maximum utility, he should buy 6 units of apples and 5 units of oranges (6+5=11 i.e. his income), so that she can get 92 + 58 = 150 units. No other combination of apples and oranges can give higher than 150 utilities.

Ordinal Approach:

This approach was given by John Hicks in 1930. It is also known as indifference curve/consumer theory. It says that we can arrange the utilities in the order of preferences as we can't measure it quantitatively.

Indifference Curve: Indifference curve shows all the combinations of two commodities. They have equal satisfaction for the consumer.

Table & Graph

Here is an example to understand the indifference curve better. Peter has 1 unit of food and 12 units of clothing. Now, we ask Peter how many units of

clothing is he willing to give up in exchange for an additional unit of food so that his level of satisfaction remains unchanged.

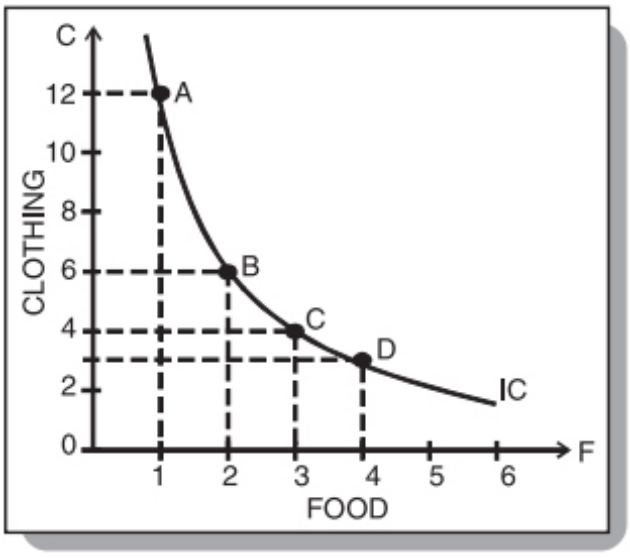
Peter agrees to give up 6 units of clothing for an additional unit of food. Hence, we have two combinations of food and clothing giving equal satisfaction to Peter as follows:

1 unit of food and 12 units of clothing

2 units of food and 6 units of clothing

By asking him similar questions, we get various combinations as follows:

Combination	Food	Clothing
A	1	12
B	2	6
C	3	4
D	4	3



Assumptions:

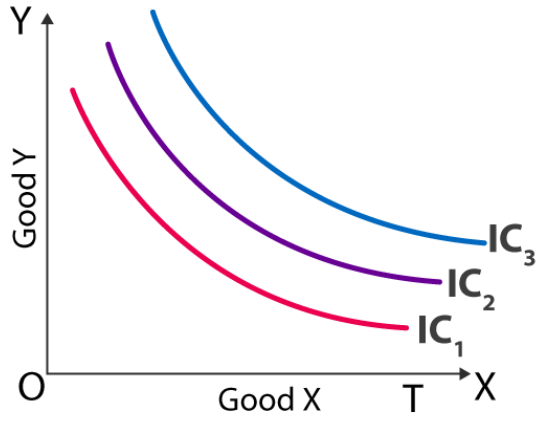
- Consumer is rational and aims to maximize utility.
- As a normal human being, he prefers more quality of a good to less.
- Consumer can tell which combinations of goods he prefer and among which he is not interested in.

Properties:

- The curve slopes downward (negative slope).
- The curve is convex to the origin.
- The indifference curves never intersect each other.

Indifference Map:

The indifference map refers to a set of indifference curves that reflect an understanding & gives an entire view of a consumer's choice. The below diagram shows an indifference map with 3 indifference curves.



Indifference Map

Properties: (same as Indifference Curve)

- The curve slopes downward (negative slope).
- The curve is convex to the origin.
- The indifference curves never intersect each other.

- Higher IC represents higher level of satisfaction.

Budget Line/Constraint:

A budget line shows are those combinations of two goods (x and y) which a consumer can buy at any given prices of goods, using up all incomes he wants to spend.
To draw a budget line, we need two kinds of information:

- Income to be spent on x and y goods
- Prices of x and y

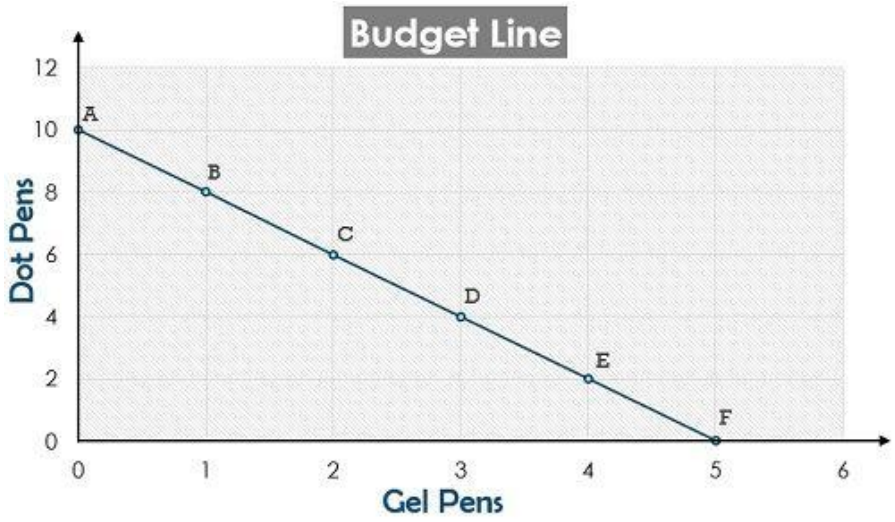
Table & Graph:

Let us say that a person has 50/- for buying pens. He/She has the following options for allocating his/her amount such that he/she derives the maximum utility from limited income:

Budget Schedule

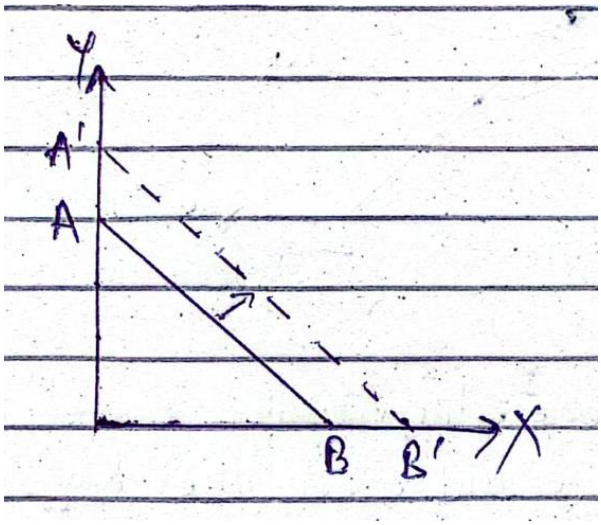
Combination	Gel Pens (@ 10/- Per Pen)	Dot Pens (@ 5/- Per Pen)	Budget Allocation
A	0	10	10*0+ 5*10 = 50
B	1	8	10*1+ 5*8 = 50
C	2	6	10*2+ 5*6 = 50
D	3	4	10*3+ 5*4 = 50
E	4	2	10*4+ 5*2 = 50
F	5	0	10*5+ 5*0 = 50

The above Budget schedule can be plotted on a graph to obtain the appropriate budget line for this instance;

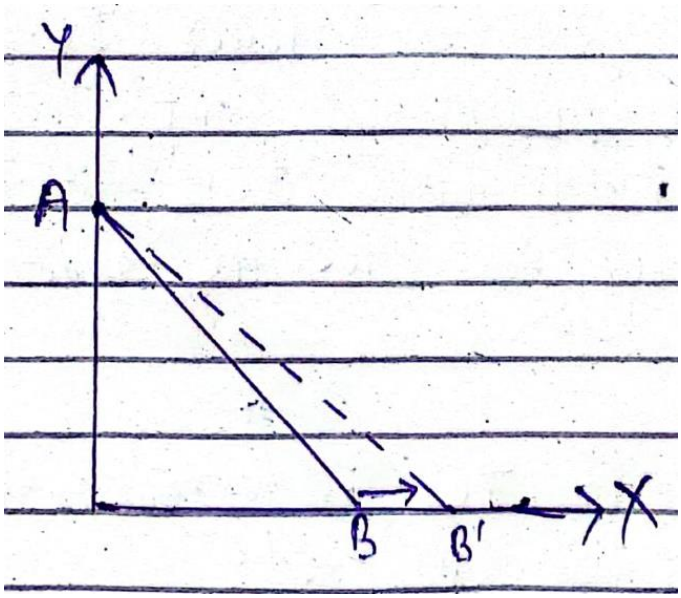


Shift in Budget Line: There is a shift in the budget line when there is a change in the income of the consumer or when there is a change in the prices of either one or both commodities.

1. **Effect of a Change in the Income:** When income increases, consumer can afford more of the two commodities. So, budget line shifts to the right. In case income falls, budget line will shift leftwards.



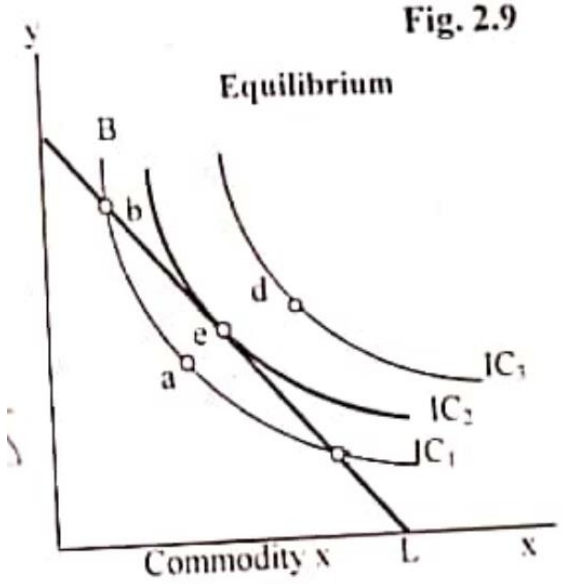
2. **Effect of Change in the Price:** When prices changed, the budget line changes its slope. E.g., when price of x falls, the consumer can buy more of x so budget line movies right on x-axis.



Consumer Equilibrium:

When a consumer has chosen a combination of commodities which has he thinks has the highest satisfaction, he is said to be in the equilibrium.

Fig. 2.9

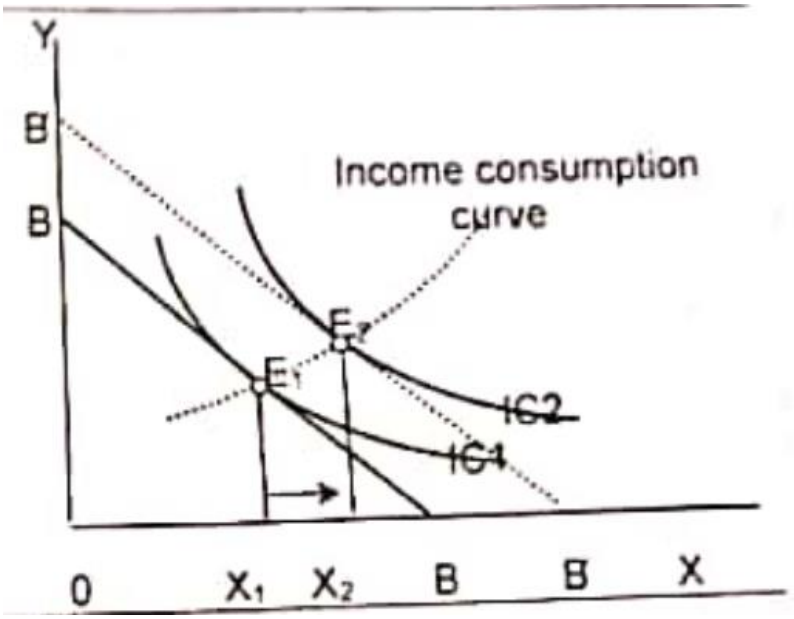


Consider the figure above. The consumer can buy any combination like b, e and c. But point e is the best compared to other points because it gives maximum satisfaction. Here IC_2 is tangent to BL. If he chooses combination a, he is not using up the entire amount and he is at lower IC_1 having a lower satisfaction. Similarly, b or c points lie on lower IC. So, point e is the equilibrium point. The consumer would like to reach higher IC_2 but he does not have enough money for this. Thus, he cannot go outside BL.

The point where an IC is tangent to budget line is the equilibrium point.

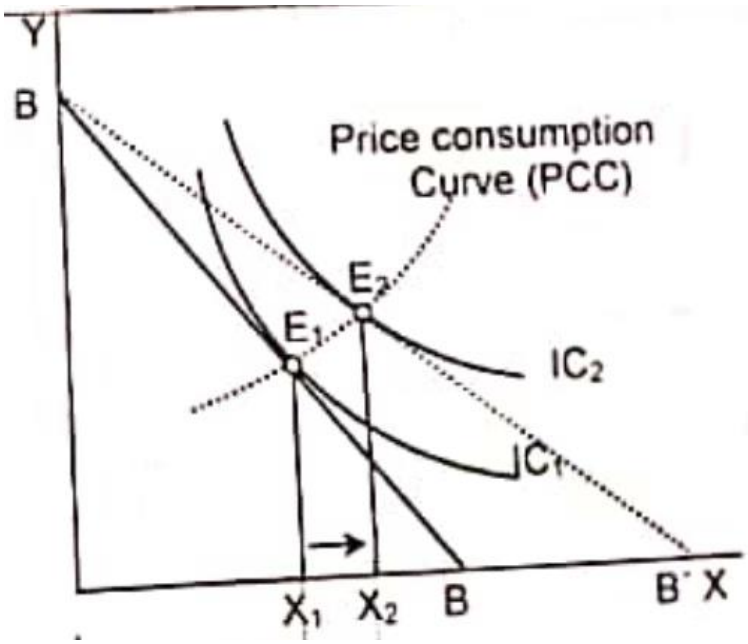
Income Consumption Curve (ICC):

The Income Consumption Curve (ICC) illustrates how changes in income affect consumption choices while keeping prices constant. It typically slopes upwards, indicating that as income rises, consumption also increases. Look at the figure below. Initially, the budget line was BB. The consumer was in equilibrium at point E. Later when the income rises, the consumer gets more purchasing power to buy X and Y so the budget line shifts to the right i.e. B'B'. New equilibrium is at E_2. We see that increase in income has caused increase in consumption equal to $X_1 X_2$ quantity.



Price Consumption Curve (PCC):

The Price Consumption Curve (PCC) showcases how changes in the price of one good influence the consumption of another, assuming income remains constant. It usually slopes downwards, indicating the substitution effect between goods as their relative prices change. For example in the diagram below, budget line BB is drawn with the assumption that price of X commodity is P_1. The consumer's equilibrium point is at point E. He buys X_1 of price X. Now price of X commodity falls to P_2. With the same income, the consumer has moved to point E_2 buying more of X. He has been able to go higher indifference curve. His satisfaction level has increased.

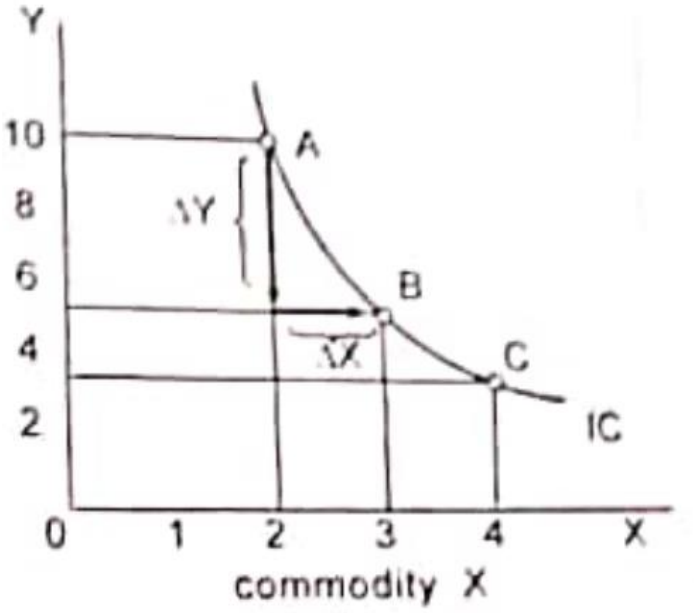


Marginal Rate of Substitution (MRS):

The rate at which a consumer is willing to substitute commodity X for Y is called marginal rate of substitution (MRS). We can write it as:

$$\text{MRS} = \frac{Change\ in\ X}{Change\ in\ Y} = \frac{\Delta X}{\Delta Y}$$

As the consumer chooses more and more amount of X, he gives less and less of Y in exchange. The reason for such behavior is that when a consumer increases X, its marginal utility decreases. On the other hand, as he gives up Y, it marginal utility increases. So the rate of giving up Y falls. This is called Principle of Diminishing Rate of Substitution (DMRS).



Demand

In common language, the word “demand”, “desire” and “need” are used in the same meaning. But in economics, the word demand can be used in three senses:

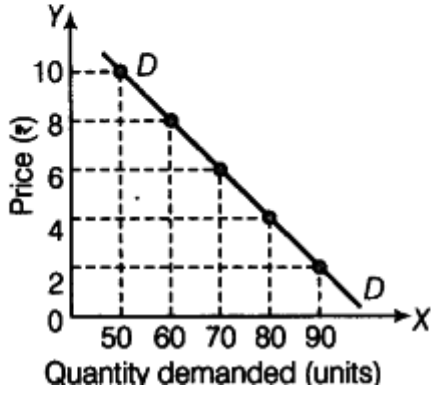
- Demand is the effective desire to buy something.
- Demand indicates quantity actually bought.
- Demand as a schedule (or table) showing negative relation between price and quantity.

Market Demand: Market demand is the sum of individual demands of people.

Overall, demand is a relation showing the various amounts of commodity that buyers would be willing to purchase at alternative prices during a given period of time, considering all other things remain the same.

Demand schedule

Price per unit (₹)	Quantity demanded (units)
10	50
8	60
6	70
4	80
2	90



Look at the table and graph above. When the price per unit was 10rs, demanded units were 50 but as the price kept lowering, the demand increased and if the price increases, the demand will decrease. So, you can see that price and demand have a negative relation (inversely proportional).

Law of Demand:

The law of demand states that, ceteris paribus, as the price of a good or service decreases, the quantity demanded increases, and vice versa. In other words, there is an inverse relationship between price and quantity demanded.

Assumptions: Following are some assumptions to be kept in mind for law of demand:

- Income remains constant.
- Taste remains same.
- Prices of related/substitute goods remain same.
- Population remains same.

Quantity Demand:

Quantity demanded refers to the specific quantity of a good or service that consumers are willing and able to purchase at a given/specific price within a certain period.

Formula of quantity demand is:

$$Qd = f(p)$$

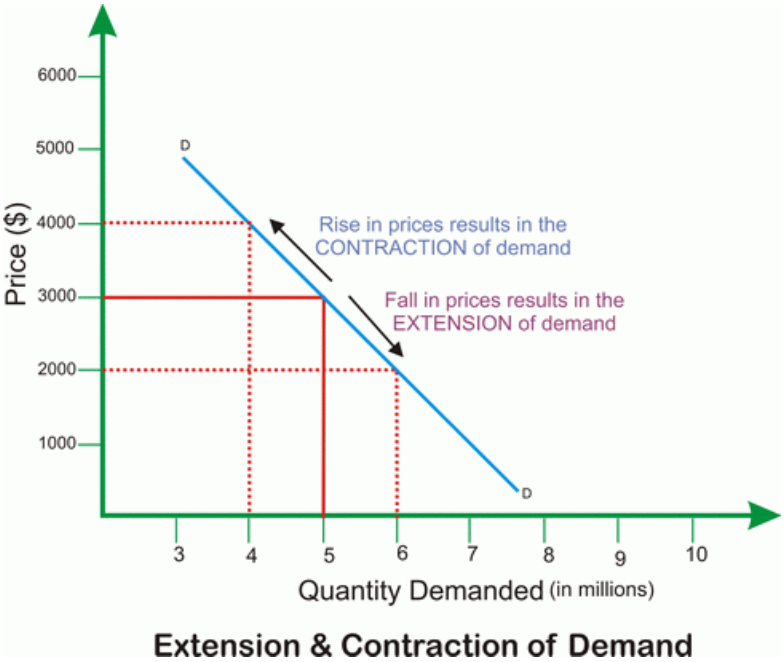
Where Qd is quantity demanded and p means the price demanded of the good or service (f is just a general function).

Changes in Demand:

There can two types of changes in demand curve:

1. **Extension & Contraction of Demand (Will rotate): Extension of demand** is the increase in demand due to the fall in price, all other

factors remaining constant. **Contraction of demand** is the fall in demand due to the rise in price, all other factors remaining constant.

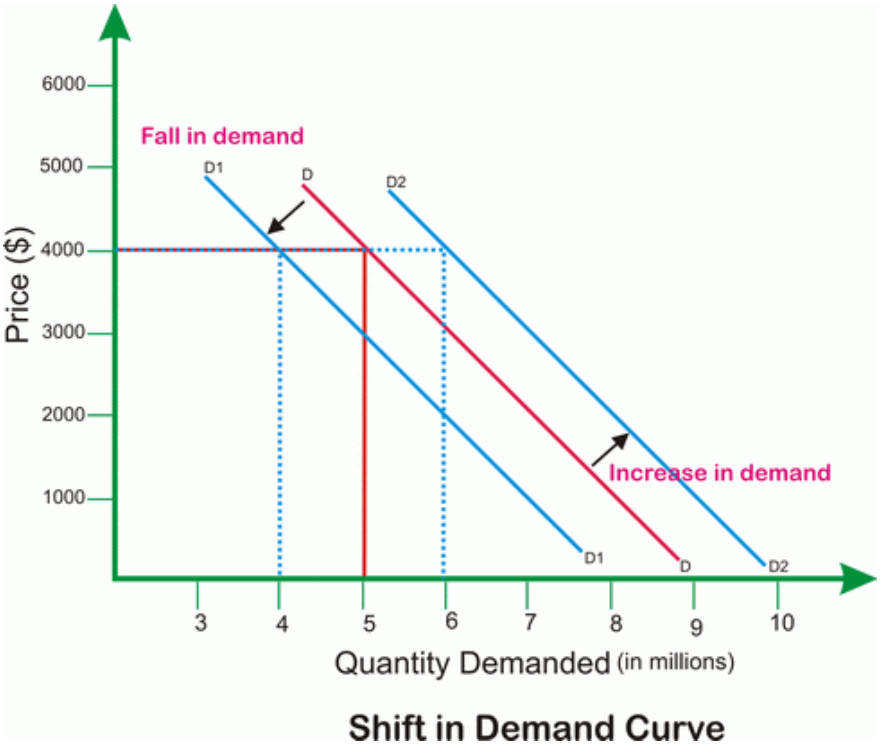


Extension & Contraction of Demand

(MAKE THE TABLE YOURSELF)

Currently, we are at price 3000$ and demand is 5 million. If the price decreases to 3000$, our demand goes up to 6 million. And if the price increases to 4000$, our demand drops down to 4 million. This is contraction and extension of demand respectively.

2. **Rise & Fall of Demand (Will shift): Rise of demand** is the increase of demand when more quantity is demanded at the same price. **Fall of demand** is the decrease in demand when less quantity is demanded at the same price.



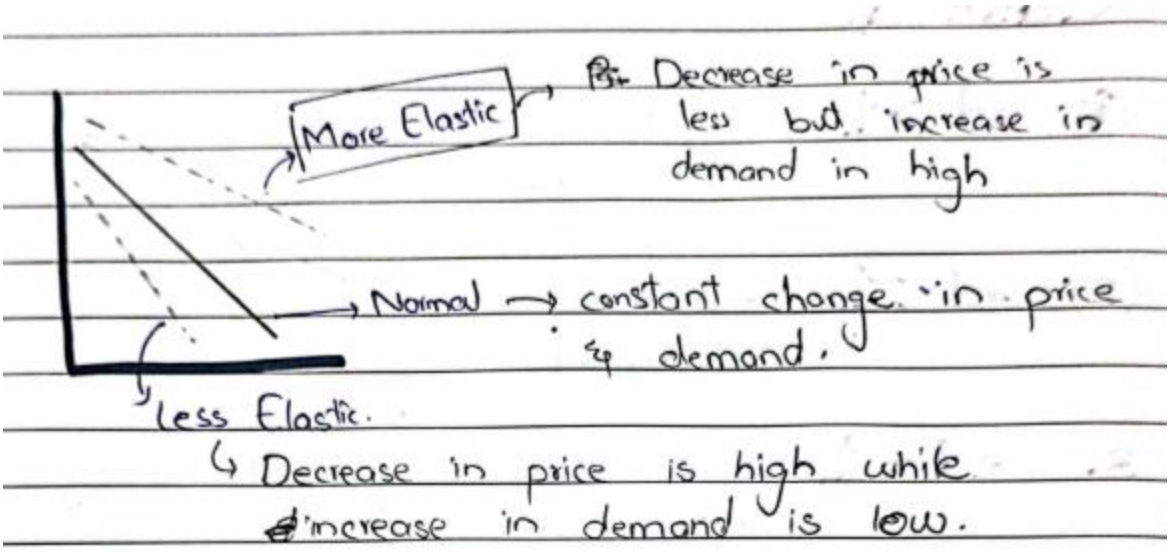
(MAKE THE TABLE YOURSELF)

Currently, we are at 4000$ and demand is 5 million. When demand drops from 5 million to 4 million and the price is same i.e. 4000$, the curve will shift inwards showing fall of demand. When demand rises from 5 million to 6 million and the price is same i.e. 4000$, the curve will shift outwards showing rise of demand.

Elasticity of Demand:

Elasticity of demand measures how much quantity demanded changes in response to a change in price. It shows how sensitive consumers are to price changes. There are two types of elasticity in demand:

1. **Price elasticity of demand:** Price elasticity of demand measures the change in percentage of demand caused by a percent change in price.
2. **Income elasticity of demand:** Income elasticity of demand measures the change in percentage of demand caused by a percent change in income.



$e_d = \frac{changei\ in\ qd}{change\ in\ price} = \frac{\Delta q}{\Delta P}$

Price elasticity of demand: $e_d = \frac{\Delta q}{\Delta p} \times \frac{p}{q}$

Price elasticity of income: $e_d = \frac{\Delta q}{\Delta p} \times \frac{y}{q}$

If $e_d > 1$, it is elastic demand (change in demand > change in price)
If $e_d < 1$, it is inelastic demand (change in demand < change in price)
If $e_d = 1$, it is unit elastic demand (changed in demand = change in price)

Supply

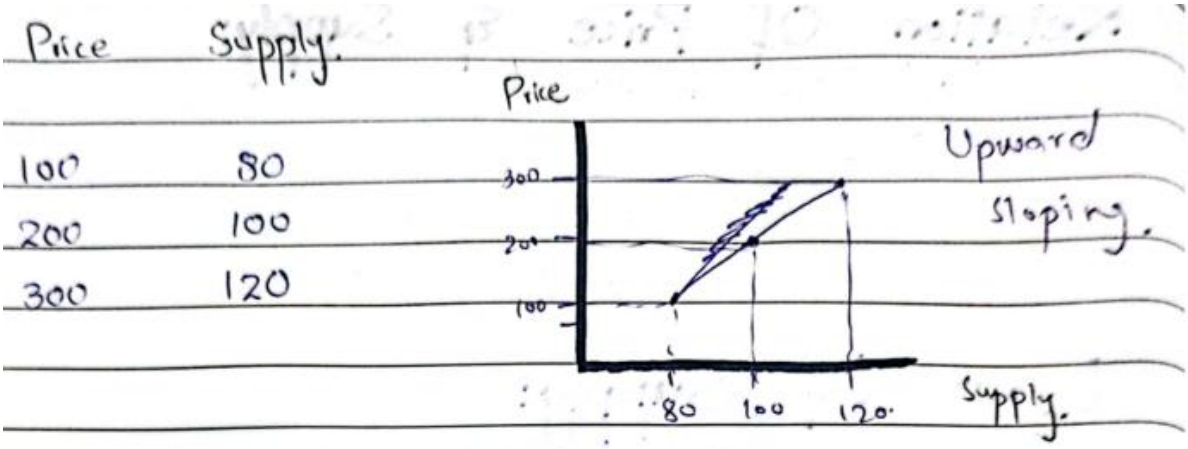
Supply means quantities of a product offered by a producer at market prices for a given period of time. Supply has a positive relation with price. It means that when supply increases, price also increases and when supply decreases, price also decreases (directly proportional).

Market: The place where buyer and seller interact with each other and all the buying/selling takes place.

Periods of Time:

1. **Market Period:** It ranges to one day. Staring prices are high but at the end of the day, prices are lowered and the stock is usually finished. Supply doesn't increase. For example, Sunday Bazaar.
2. **Short Period:** It ranges from 2 months to 3 months. Producer can supply stock in the market.
3. **Long Period:** It ranges from 1 year to onward. Production increases even further.

Price can fluctuate a lot in market period and short period. Market period and short period contains of perishable goods i.e. fruits, vegetables, etc.



In the figure above, you can see that when price is 100, supply is 80. But when the price increases to 200, supply also increases to 100. When price increases to 300, supply increases to 120. This shows the positive relation. The graph is upward sloping.

Law of Supply:

Law of supply states if the supply of a product increases, the price increases and if the supply of a product decreases, the price decreases, considering all the other factors remain constant.

Assumptions: Following are the assumptions in law of supply:

- Cost of raw material should be constant.
- Technology should be constant.

- Natural disasters should be constant.
- Weather should be constant.
- Expectations should be constant.

Changes in Supply:

There can two types of changes in supply curve:

1. **Extensions & Contraction of Supply: Extension of supply** (rightward shift) is when the price of a good increases, its price also increases indicating extension in supply. **Contraction of supply** (leftward shift) is when the price of good decreases, its price also decreases indicating contraction in supply.

   (SKIPPING THE DIAGRAM FOR NOW)
2. **Rise & Fall of Supply: Rise of supply** (downward along the curve) is when the supply of good increases due to factors like favorable weather conditions, technological advancements, low production cost, etc. Price of good decreases in rise of supply. **Fall of supply** (upward along the curve) is when the supply of good decreases due to factors like unfavorable conditions, high production cost, bad weather, etc. Price of good increases in fall of supply.

   (SKIPPING THE DIAGRAM FOR NOW)

Elasticity of Supply:

Elasticity of supply measures how much quantity supplied changes in response to a change in price. It shows how sensitive producers are to price changes.

$$e_s = \frac{changei\ in\ Qs}{change\ in\ price} = \frac{\Delta q}{\Delta P}$$

$$e_d = \frac{\Delta Qs}{\Delta P} \div \frac{Q}{P}$$

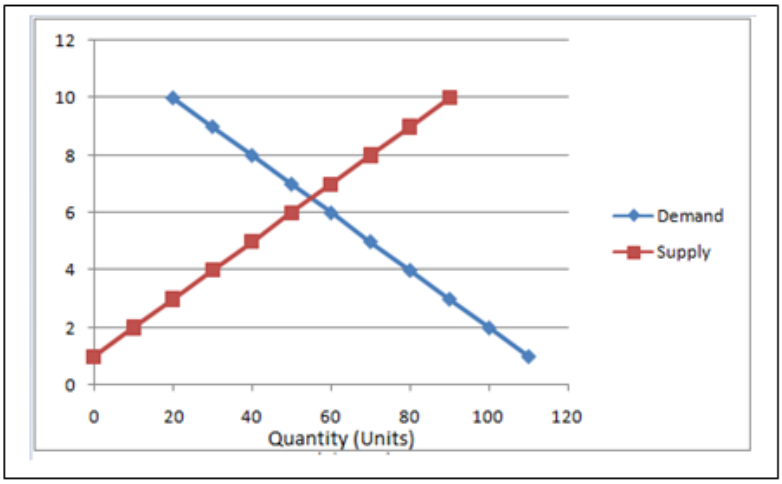
If e_s>1, it is elastic supply (change in demand > change in price)
If e_s<1, it is inelastic supply (change in demand < change in price)
If e_s=1, it is unit elastic supply (changed in demand = change in price)

Equilibrium of Market:

Equilibrium is the state in which market supply and demand balance each other, and as a result prices become stable. The balancing effect of supply and demand results in a state of equilibrium.

$$Qs = Qd = P$$

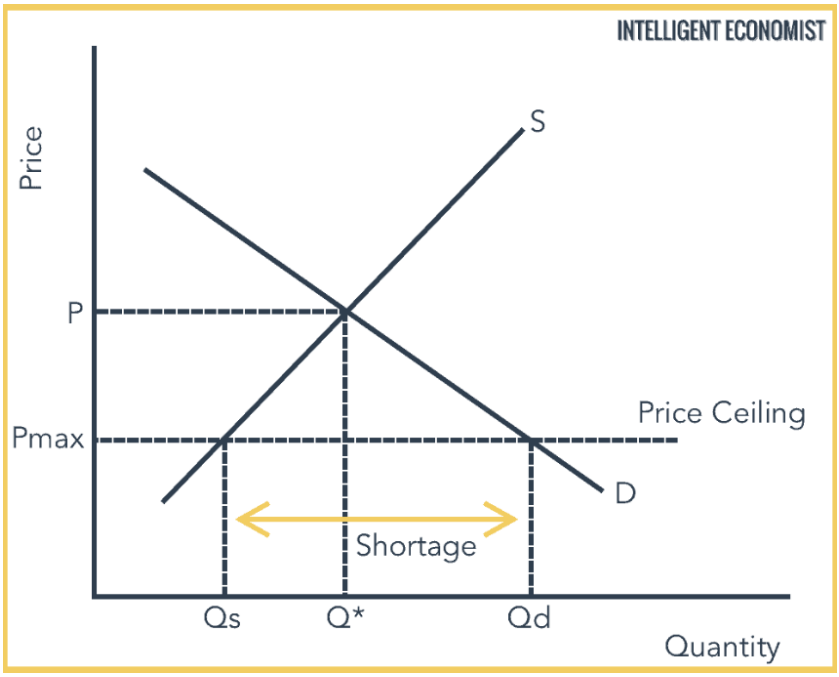
Price INR	Demand	Supply
1	110	-
2	100	10
3	90	20
4	80	30
5	70	40
6	60	50
7	50	60
8	40	70
9	30	80
10	20	90



From the above table, we notice that the equilibrium price is INR 6 at a Quantity of 50 as demand equals supply. The vertical axis in the graph denotes the prices, and the horizontal axis shows the quantity. The point at which both lines intersect is the market equilibrium.

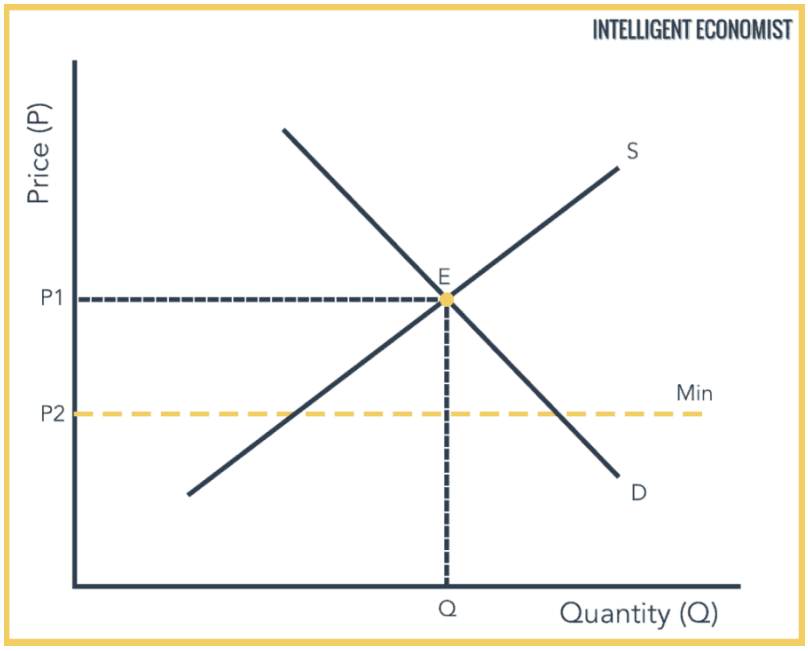
Price Ceiling:

Price ceiling is the maximum price of a good/commodity set by the government. Maximum price is set so that the consumers can be protected from excessively high prices. It is applied when there is shortage of goods.



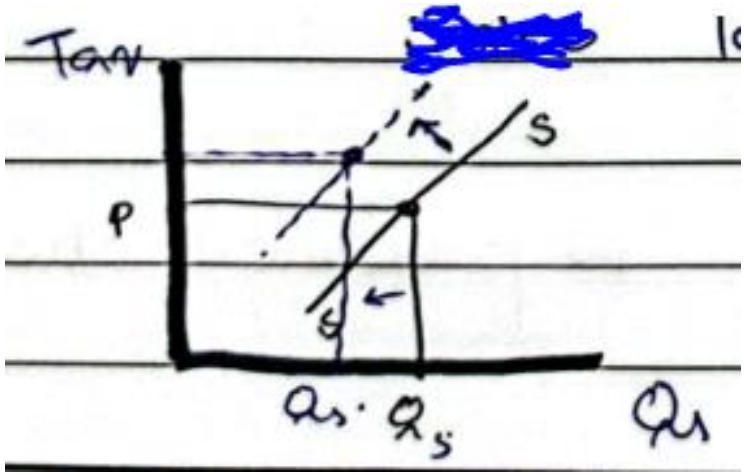
Price Flooring:

Price flooring is the minimum price of a good/commodity/service set by the government. Minimum price is set so that the producer receives the minimum level of income or to product certain industries from low prices. It is applied when there are surplus goods.



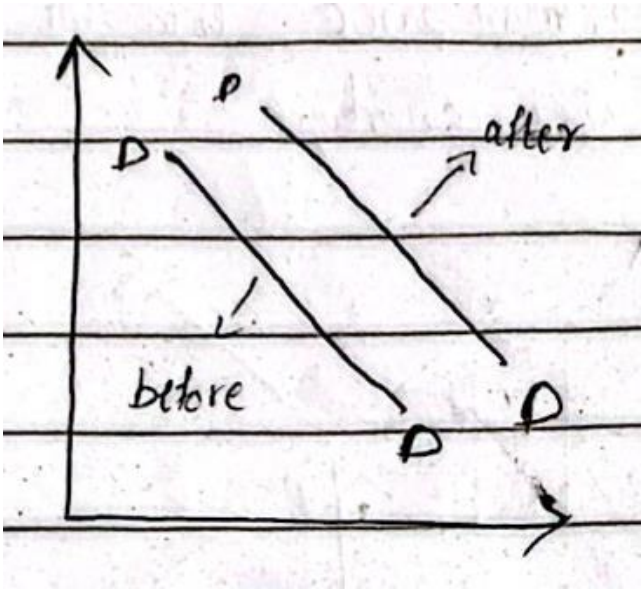
Sales Tax:

A sales tax is a consumption tax imposed by the government on the sale of goods/services. Supply & sales tax are inversely proportional.



Advertising Effect:

Advertising effect is the effect caused due to advertising of any good or service. Advertising can increase the demand of the good or service as advertising & demand are directly proportional.



Market

Market is a mechanism or arrangement for the exchange of services between buyers and sellers. It can be physical (mall, car show-room) and virtual (Facebook marketplace, OLX).

Kinds of Market:

There are 4 kinds of market:

1. **Market according to time:** Markets can be classified based on the time frames.
    - **Daily Market:** A market where transactions occur on daily basis. Like Sunday bazaar.
    - **Short Market** A market where transactions occurring over a relatively short period, usually weeks to months, allowing for adjustments for immediate changes in supply and demand.
    - **Long Market:** A market where transactions span an extended period, often years or decades, proving stability and opportunities for long term planning and investment.
2. **Market according to location:** Markets can be classified based on the locations.
    - **Local Market:** Market in your towns or society like a bakery.
    - **Regional Market:** Market that is on regional level like a farmer's agricultural products that ship to multiple towns.
    - **National Market:** Market that is on national level like Ronin is a Pakistani brands selling mobile accessories nationwide.
    - **International Market:** Market that is on an international level like Samsung sells its mobiles all across the globe.
3. **Market according to nature of commodity:** Markets can be classified based on the nature of the commodity.
    - **General Market:** A market where wide variety of goods and services are bought and sold. For example, a supermarket.

- **Specialized Market:** A market where a specific type of goods and services are bought and sold. For example, a book store only sells books.
- **Sample Market:** A market where small quantities of goods or services are demonstrated for promotion purposes. For example, samples of perfumes and sweets.
- **Trademark Market:** A market where goods or services are sold under a particular trademark, often associated with quality or prestige. For example, an Apple store only sells Apple products like AirPods, MacBook, iPhone, etc.

4. **Market according to competition:** Markets can be classified based on the level of competition among firms:
    - **Perfect Market's Features:**
        a) Multiple buyers and sellers
        b) Price taker
        c) Homogenous products
        d) Full information about market
        e) Free entry or free exit
        f) Perfect mobility of goods & services
    - **Imperfect Market's Features:**
        a) Price maker
        b) Close substitute but differentiated
        c) Do not have full information about market
        d) No free entry & no free exit
        e) No perfect mobility of goods & services

    Seller Types of Imperfect Market:

    i. **Monopolistic Market:**
        - Price maker
        - Few seller
        - Close substitute but differentiated (quality)
        - Restriction that you can't easily enter

ii. **Oligopoly Market:**
- Few firms (2-10)
- Few firms determine the price jointly
- Restriction that you can't easily enter
- Price cartel (previous firms reduce the prices shortly when new firm enters so that the new firm faces loss)

iii. **Duopoly:**
- Only 2 firms
- These 2 firms determine the price jointly
- Restriction that you can't easily enter
- Price cartel (previous firms reduce the prices shortly when new firm enters so that the new firm faces loss)

iv. **Monopoly:**
- Only one firm
- Price maker
- Differentiated product
- Blocked entry (no one can enter)
- E.g. WAPDA, Army, Railway line.

Buyer Type of Imperfect Market:

i. **Monopsony:**
- Single buyer
- E.g. atomic scientist can only work in a government institute

Economic Systems

An economic system is the way a society organizes and manages its resources, production, distribution, and consumption of goods and services.

Types of Economic Systems:

We are going to discuss 4 types of economic systems here:

1. **Capitalism:** Economic system based on the private ownership, free market and profit-driven motives. Countries like USA or New Zealand have capitalist economic system.

Features:

- Private ownership of property
- Free choice for consumer and producer
- Price system determines the market prices
- Self interest in dominant economic force
- Competition among producer and buyer
- Limited government role in economic activities (what you demand and what you produce)
- Creates gap between rich and poor due to unequal distribution of wealth

2. **Socialism:** Economic system where all the economic resources are owned by the government like North Korea.

Features:

- State ownership of all properties/resources/assets
- Government takes control over all economic activities
- Central economic planning
- Less freedom of choice for consumer
- Equal distribution wealth

Failures:

- No self interest
- Less profit

3. **Mixed Economy:** Economic system where there are both, private ownerships and state ownerships with government intervention. Canada has mixed economic system.

Features:

- Both ownerships of state and private
- Government has a little bit intervention
- Mixed economic planning
- Promotes equal wealth distribution
- Not too much and not too less freedom of choice of consumer

4. **Islamic Economic System:** Economic system based on Islamic principles, prohibiting interest and promoting social justice and private ownership. Saudi Arabia has Islamic economic system.

Features:

- Only in Islamic countries
- No monopoly, free market
- Private sectors
- Social welfare is prioritized highly
- Moral values are observed
- No interest and promotion of Zakat

Production

Production refers to the process of creating goods and services. It involves transforming raw materials or intermediate goods into finished products that satisfy consumer needs and wants. It is done to satisfy human need.

Factors of Production:

Following are the 4 factors of production:

1. **Land:** All natural resources that we utilize for production. For example, for cotton, we need all natural resources i.e. earth, sunlight, air, etc. Land is a fixed element. It can't be reduced or increased.
   Characteristics:
   - Free gift of nature
   - Inelastic supply & fixed quantity
   - Permanent
   - Immovable
   - Land can differ with respect or productivity
   - By using labor and capital, we can increase its productivity

   Ways to Increase Efficiency/Productivity of Land: We have 2 ways to increase productivity of land:

   a) **Extensive Cultivation:** Using large land areas with low inputs per unit area to produce goods. For example, large scale wheat farming in American Midwest using vast fields with cultivated and minimal user of fertilizers and machinery per acre.
   b) **Intensive Cultivation:** Maximizing yield per unit area through high inputs of labor, capital, and technology. For example, farming in urban areas where crops are grown indoors using controlled environments, artificial lightning and nutrient solutions to maximize yield per square foot.

   (TAKING LABOR AS SEPARATE TOPIC BECAUSE IT'S LONG)

Labor

Labor refers to the physical and mental effort exerted by humans in the production process. This effort includes both skilled and unskilled work performed to create goods and services.

Characteristics:

- Labor is perishable.
- It can be separated to/from (hired/dismissed) labor.
- Weak bargaining power.
- Cannot easily define cost of production.
- It is an active factor.
- Human being is labor but not a machine.
- Labors create capital (finance).
- Labor is less mobile.
- Labor is dual in nature.
- It can be separated to/from labor.

Productivity of Labor:

- Personal qualities of labor (physical, intelligence, health, training, education)
- Good working condition & wages
- Good machinery
- No political & social discrimination
- Healthy employee-employer relation
- It can be separated to/from labor.

Mobility of Labor:

- **Geographical Mobility:** The ability to change locations in search of better job opportunities. For example, a worker relocation from rural to urban for better job opportunities.

- **Occupational Mobility:** The ability to switch between occupations or fields of work. For example, an accountant learns coding and becomes a software developer.
- **Horizontal Mobility:** The movement of workers between similar job roles within the same industry or skill level. For example, a software developer leaves one software house as a developer and joins another software house as a developer.
- **Vertical Mobility:** The movement of workers to higher or lower positions within the same organization. For example, an airman in PAF clears ISSB and get selected for a commissioned officer.

Factors Affecting Mobility of Labor:

- Better environment
- Ambition
- Better wages
- Better facilities
- Job security

Malthus Population Theory:

This theory was given my Thomas Malthus in 1798. He wrote a book named "An Essay on the Principle of Population". He said that population increases at a higher rate (double) as compared to food production.
Population increases geometrically i.e. 1, 2, 4, 8, 16, 32, 64.
Food production increases arithmetically i.e. 1, 2, 3, 4, 5, 6.
He proposed two types of check to control population:

- **Positive Checks:** Nature has its own way of keeping a check on increasing population. It brings the population to the level of available food supply. The positive checks include famines, earthquakes, epidemics, wars, etc.
- **Preventive Checks:** Preventive measures such as late marriage, self-control and simple living, help to balance the population growth and

food supply. These measure not only check the population growth, but can also prevent the catastrophic effects of the positive checks.

Optimum Population Theory:

This theory was given by Edwin Cannan in 1924. The Optimum Population Theory suggests that there is an ideal population size for a given level of resources and technology that maximizes societal welfare. It says that both overpopulation and under-population can have negative consequences on economic development and well-being.

- **Over-Population:** Occurs when population is more than available resources. This can cause strain on development of society, degradation of living standard. PCI (Per capita income) can be low of a country due to over-population. Countries like Pakistan and India are very over-populated.
- **Under-Population:** Occurs when population is more than available resources. This can cause reduced productivity, shortage of labor and limited economic growth. PCI (Per capita income) can be high of a country due to under-population. Countries like Japan and Russia are under-populated.
- **Ideal Population:** Represents balance between population and available resources when productivity is maximized and resources are being utilized for good lifestyle and well-being.