



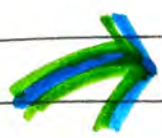
# BUSINESS ECONOMICS

# Chapter - 2



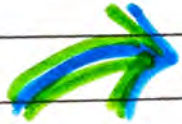


# Theory of demand and Supply



## Unit - 1

Law of demand and Elasticity of demand.



## Unit - 2

Theory of consumer behaviour



## Unit - 3

Supply

# Unit - 1

Law of demand and elasticity  
of demand.

▶ Name of the **Economists** and the concepts given by them.

	Name of Economist	Concept given by him.
1.	<u>James Duesenberry</u>	Demonstration Effect
2.	<u>Thorstein Veblen</u>	The Veblen Effect.
3.	<u>Alfred Marshall</u>	A. Law of demand B. The concept of consumer surplus and elasticity of demand
4.	<u>Sir Robert Giffen</u>	Giffen Good Paradox
5.	<u>Olaf Helmer</u>	Delphi Method
6.	<u>J R Hicks</u>	Demand curve is downward sloping because of income and substitution effect.
7.	<u>Jeremy Bentham</u>	Utility is the property of object.



## ▶ Meaning of Demand

- ★ In normal sense the term **DEMAND** is many times confused with '**DESIRE**' and '**WANT**'.
  - ★ Desire is only a wish to have anything.
  - ★ In economics demand means more than mere desire.
  - ★ Demand in economics means an effective desire for a commodity i.e. desire backed by the '**ability to pay**' and '**willingness to pay**' for it.
  - ★ Thus, demand refers to the quantity of a good or service that consumers are willing and able to purchase at different prices during a period of time.  
Thus, defined the term demand shows the following features:
- Demand is always with reference to a **PRICE**
  - Demand is to be referred to **IN A GIVEN PERIOD OF TIME**.
  - Consumer must have the necessary purchasing power to back his desire for the commodity.
  - Consumer must also be ready to exchange his money for the commodity he desires.

### EXAMPLE -

Mr. A's demand for sugar at ₹15 per kg is 4 kgs per week.



# DETERMINANTS of DEMAND

The various factors on which demand for a product / commodity depends are as follows:

## 1. Price of the Commodity

→ Other things being equal, the demand for a commodity is inversely related with its price.

→ Price increase, demand decrease and vice-versa.

2.

## Price of related commodities

▶ Related commodities are of two types namely —

- Substitutes or competitive goods
- Complementary goods.

▶ Substitute goods are those goods which can be used in place of each other.



→ **Example**

Slice and maaza, Coke and Pepsi, ball pen and ink pen, tea and coffee etc.

- ▶ Demand for a particular commodity is affected if the price of its substitute falls or rises.

→ **Example**

If the price of Pepsi falls, its demand will increase and demand for Coke fall and vice versa.

- ▶ Thus, there is a **POSITIVE RELATIONSHIP** between price of a commodity and demand for its substitutes.

- ▶ Complementary goods are those goods whose utility depends upon the availability of both the goods as both are to be used together.

→ **Example**

a ball pen and refill, car and petrol, mobile phone and battery etc.

- ▶ The demand for complementary goods have an **INVERSE RELATIONSHIP** with the price of related goods.

→ **Example**

If the price of car falls, its demand will increase leading to increase in demand for petrol.



3.

## Income of the Consumers

1.

Other things being equal, generally high income, high demand and vice-versa.

2. However, this may not always hold true. It depends upon the class to which commodity belongs i.e. necessities or comforts and luxuries or inferior goods:

→ **Necessaries** (E.g. Food, clothing and shelter).

Initially, with an increase in the income, the demand for necessities also rises upto some limit. Beyond that limit, an increase in income will leave the demand unaffected.

→ **Comfort and luxuries** (example car, Air-conditioners etc.). Quantity demanded of these group of commodities have a **DIRECT RELATIONSHIP** with the income of the consumers. As the income increases, the demand for comforts and luxuries also increases.

→ **Inferior goods** (e.g. coarse grain, rough cotton cloth, skimmed milk etc.). Inferior goods are those goods for which superior substitutes are available. Quantity demanded of this group of commodities.



have an **INVERSE RELATIONSHIP** with the income of the consumer. Eg. A consumer starts consuming full cream milk (normal good) in place of toned milk (inferior good) with an increase in income.



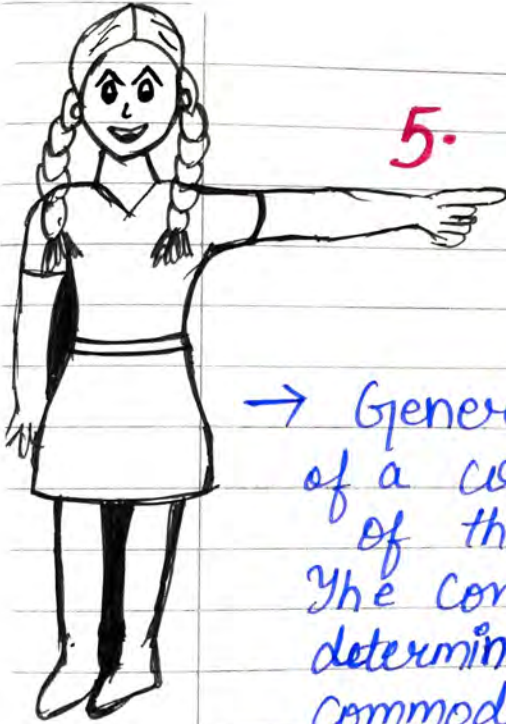
4.



1. Tastes and preferences of consumers generally change over time due to fashion, technology, habits, age, family composition etc. Demand for a commodity bears a direct relationship to these determinants.
2. Modern goods or fashionable goods have more demand than the goods which are of old design and out of fashion.  
example: People are disregarding Bajaj scooter for say Activa Scooty.
3. The demand of certain goods is determined by 'Bandwagon effect' or 'demonstration effect'. It means a buyer wants to have a good because others have it. It means that an individual consumer's demand is conditioned by the consumption of others.

4. Taste and Preferences may also undergo a change when consumer discover that consumption of a good increases his **PRESTIGE**.  
example : Diamonds, fancy cars, etc.
5. A good loses its prestige when it becomes a commonly used good. This called **'Snob effect'**.
6. Status seeking rich people buy highly priced goods only. This form of **'conspicuous consumption'** or **'ostentatious consumption'** is called **'VEBLEN EFFECT'**.





## 5. SIZE and COMPOSITION of Population



→ Generally, larger the size of population of a country, more will be the demand of the commodities.

The consumption of the population also determines the demand for various commodities.

→ Example: If the number of teenagers is large, the demand for trendy clothes, shoes, movies etc. will be high.



6.

 **The Level of National Income and its Distribution.** 

- National Income is an important determinant of market demand. Higher the national income, higher will be the demand for normal goods and services.
- If the income in a country is unevenly distributed, the demand for consumer goods will be less.
- If the income is evenly distributed, there is higher demand for consumer goods.

7.

# Government Policy

- The government's taxation policy also affects the demand for commodities.
- High tax, low demand and vice versa.

8.

Expectations about future prices.

If consumers expect rise in the price of a commodity in near future, the current demand for the commodity will increase and vice versa.

9.

Consumer - credit Facility and Interest rates

If ample credit facilities with low rates of interest is available, there will be more demand specially of consumer durable goods like scooters, LCD/LED televisions, refrigerators, home theatre etc.



► Reasons for the law of demand and downward slope of a demand curve are as follows:

1. The Law of Diminishing Marginal Utility:

★ According to this law, other things being equal as we consume a commodity, the marginal utility derived from its successive units go on falling.

★ Hence, the consumer purchases more units only at a lower price.

★ A consumer goes on purchasing a commodity till the marginal utility of the commodity is greater than its market price and stops when  $MU = \text{Price}$  i.e. when consumer is at equilibrium.

★ When the price of the commodity falls,  $MU$  of the commodity becomes greater than price and so consumer start purchasing more till again  $MU = \text{Price}$ .

★ It therefore, follows that the diminishing marginal utility implies downward sloping demand curve and the law of demand operates.

## 2. Change in the number of consumers:

— Many consumers who were unable to buy a commodity at higher price also start buying when the price of the commodity falls.

— Old customers starts buying more when price falls.

## 3. Various uses of a Commodity:

Commodity may have many uses. The number of uses to which the commodity can be put will increase at a lower price and vice versa.



#### 4. Income Effect :

- ★ When price of a commodity falls, the purchasing power (i.e. the real income) of the consumer increases.
- ★ Thus he can purchase the same quantity with lesser money or he can get more quantity for the same money.
- ★ This is called income effect of the change in price of the commodity.

#### 5. Substitution Effect :

- When price of a commodity falls it becomes relatively cheaper than other commodities.
- As a result the consumer would like to substitute it for other commodities which have now become more expensive.  
example : with the fall in price of tea, coffee's price remaining the same, tea will be substituted for coffee.
- This is called substitution effect of the change in price of the commodity.
- Thus, Price effect = Income Effect + Substitution Effect as explained by Hicks and Allen.



# Elasticity of Demand

- Elasticity of demand is defined as the **Responsiveness** of the quantity demanded of a good to changes in factors.
- Percentage change in quantity demand **divided** by percentage change in one of the factor on which demand depends.

## ► Measures of Elasticity for different Factors:

Factors	Name of elasticity	Denoted by
Price of the commodity	Price Elasticity	$E_p$
Income of the consumer	Income Elasticity	$E_I$
Price of the related product	Cross Elasticity	$E_C$
availability of the substitute	Substitution Elasticity	$E_S$

- It is to be noted that elasticity of demand means price elasticity of commodity unless and until otherwise mentioned.



Methods of Price Elasticity

— % change or proportional method





Formula :

$$\frac{\% \text{ change in quantity demand}}{\% \text{ change in price}} = \frac{\Delta q}{\Delta p} \times \frac{p}{q}$$

Used when : change in quantity due to change in price.

Other : Answer always be in negative form  
(-) sign have to ignore



— Point elasticity method of derivatives

Formula :  $E_p = -\frac{dq}{dp} \times \frac{p}{q}$

When use : change in price is infinitesimal (very small).



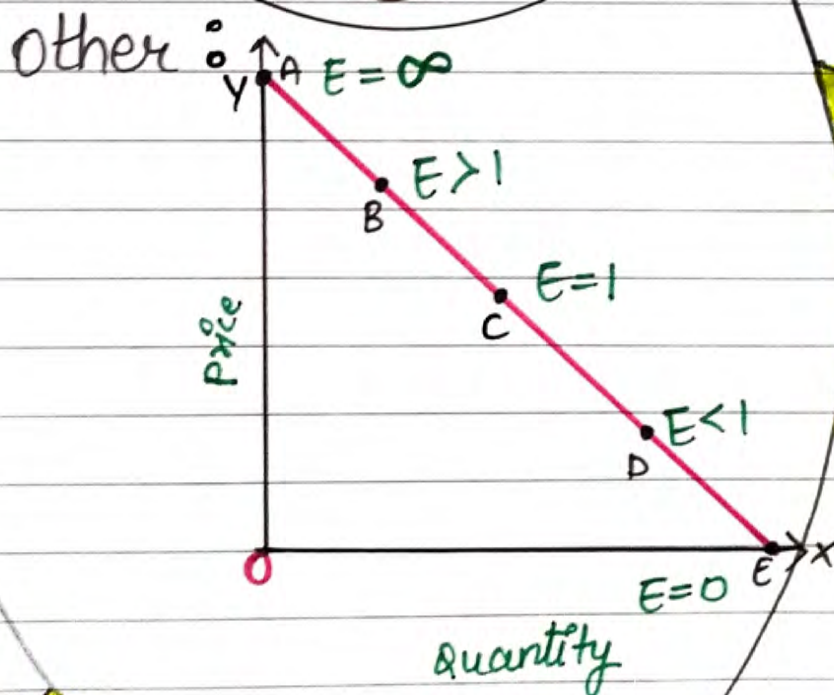


— Paint elasticity method of graphs.

Formula:  $E_p = \frac{\text{lower segment}}{\text{upper segment}}$

used when:

When straight line demand curve touching both the axes.



—

Acc

elasticity method





# FORMULA:

$$E_p = \frac{q_1 - q_2}{q_1 + q_2} \times \frac{P_1 + P_2}{P_1 - P_2}$$

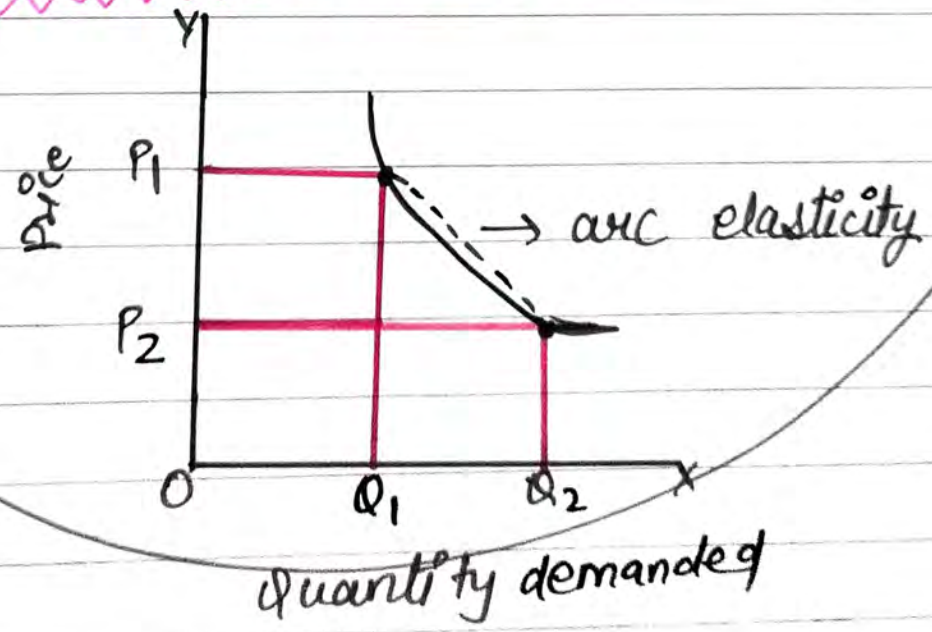
$P_1$  &  $P_2$  = Two point on arc (P).

$q_1$  &  $q_2$  = Two point on arc (Q)

When use:

- Large change in prices & quantities.
- Arc elasticity is a measure of average responsiveness.

Other:





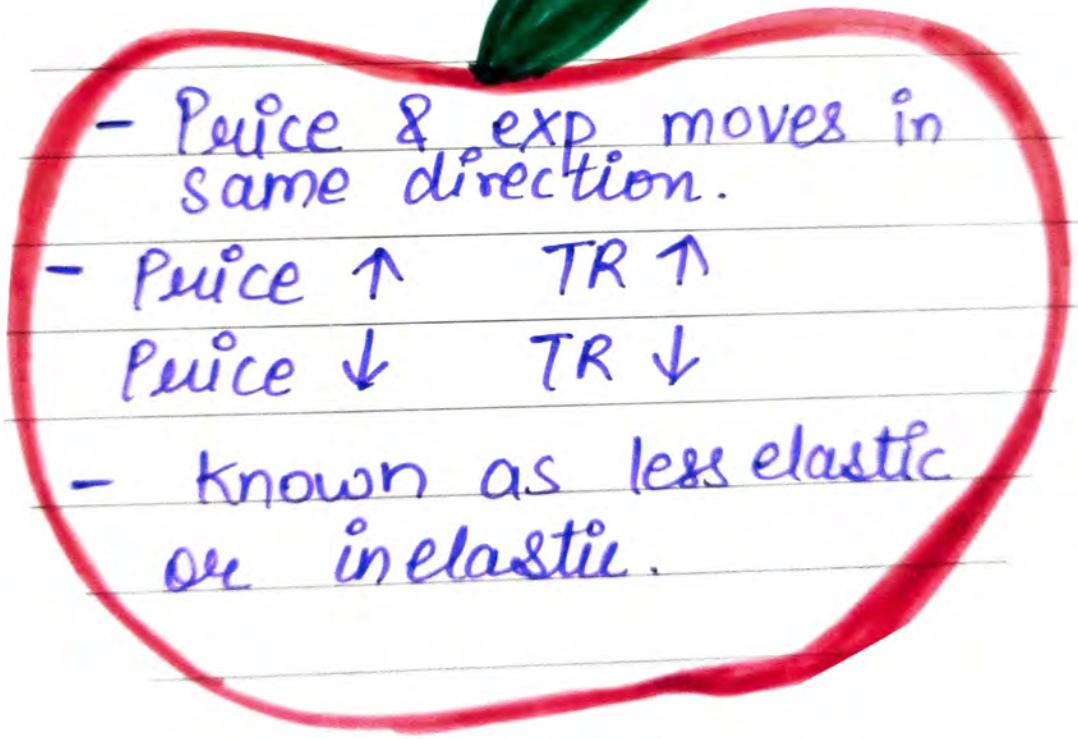
— Total outlay method.

Meaning :- Elasticity is calculated by analysing the change in total expenditure or outlay of household.

- Here we cannot find out exact coefficient of price elasticity.
- We can only say demand is elastic or inelastic.



# E < 1



- Price & exp moves in same direction.

- Price  $\uparrow$       TR  $\uparrow$

Price  $\downarrow$       TR  $\downarrow$

- known as less elastic or inelastic.

$$E = 1$$



- Total expenditure remains unchanged.
- Price  $\uparrow$  TR - unchanged  
Price  $\downarrow$  TR - unchanged
- Demand known as unit Elastic.

$E > 1$ 

- Price and expenditure moves in opposite direction
- Price  $\uparrow$       TR  $\downarrow$   
Price  $\downarrow$       TR  $\uparrow$
- Demand is said to be elastic.



## ► Determinants of Price Elasticity of Demand.

1. Availability of Substitute: more substitute elastic demand, no substitute inelastic.
2. Position of a commodity in the consumer budget - greater income spent more elastic and vice versa.
3. Nature of the need that a commodity satisfies - luxury goods elastic and necessities goods inelastic.
4. Number of uses to which a commodity can be put - more uses more elasticity and vice versa.
5. Time period - longer period elastic and short period inelastic.
6. Consumer habits - habits then inelastic and no habit elastic.
7. Tied demand - goods with every high or low range inelastic demand, middle range elastic demand.
8. Minor complementary goods - cheap goods with costlier goods demand is inelastic.



# Income Elasticity of demand

$$E_i = \frac{\% \text{ change in Quantity Demanded}}{\% \text{ change in income}}$$

$$E_i = \frac{\Delta q}{\Delta y} \times \frac{y}{q}$$

Relationship between income elasticity for a good and the proportion of income spent.

- Proportion of income spent on a good remains same as income increases, the income elasticity for that good is equal to one.
- Proportion of income spent on a good increases as income increases, the income elasticity for that good is greater than one.
- Proportion of income spent on a good decreases as income rises, the income elasticity for that good is positive but less than one.

Income elasticity is positive then it's normal goods. If income elasticity is negative then it's inferior goods.



## ► Gross price elasticity of demand

♥ Substitute product and demand - P increases (X) D increases (Y) upward (positive) sloping curve.

♥ Complementary goods - P increases (X) D decreases (Y) downward (negative) sloping curve.

$$E_c = \frac{\% \text{ change in quantity demanded of X good}}{\% \text{ change in price of Y good}}$$

$$E_c = \frac{\Delta Q_X}{\Delta P_Y} \times \frac{P_Y}{Q_X}$$

- ★ Goods are perfect substitute, cross elasticity is infinite.
- ★ Goods are close substitute, cross elasticity will be positive and large.
- ★ Goods are not close substitute, cross elasticity will be positive and small.
- ★ Goods are totally unrelated, cross elasticity between them is zero.

## Demand Forecasting

Forecasting of demand is the art and science of predicting the probable demand for a product or a service at some future date on the basis of certain past behaviour patterns of some related events and the



prevailing trends at present.

## Types of forecasts

- ✓ Macro - level forecasting deals with the general economic environment.
- ✓ Industry - level forecasting is concerned with the demand for the industry's product as a whole.
- ✓ Firm - level forecasting refers to forecasting the demand for a particular firm's product.

## Bases on Time Period

- ★ Short Term demand - 6 to 12m
- ★ Long Term forecasting - 1 to 5y

## Demand distinctions

- Producer's goods - for production
- Consumer goods - Final consumption
- Durable goods - Consumed over a long period of time.
- Non-Durable goods - cannot be consumed more than once.
- Derived demand - demand arises because demand for some other commodity.
- Autonomous demand - If the demand for a



for a product is independent of the demand for other good.

- Industry demand - total demand for the product of a particular industry.
- Demand for firm's product - Demand for the products of a particular firm.
- Short run demand - demand with its immediate reaction to changes.
- Long run demand - demand which exist over a long period.

## Factors affecting demand for non-durable consumer goods.

- ♣ Disposal Income
- ♣ Price
- ♣ Demography

## Factors affecting demand for durable consumer goods.

- ◆ Postpone
- ◆ Special facilities for their use
- ◆ Used by more than one person
- ◆ Replacement demand
- ◆ Prices and credit facilities.

## Factors affecting demand for producer goods.

- Growth Prospects
- Norms of consumption.



## UNIT-2



# Theory of consumer behaviour



## Nature of Human wants.

- wants refers to wish, desire or motive
- wants are unlimited
- wants differ in intensity
- wants is satiable
- wants are competitive
- wants are complementary
- wants are subjective and relative
- wants vary with time, place and person
- wants may become habits and customs
- wants are affected by income, taste, fashion.
- wants arise from multiple causes.



## ▶ Assumption of marginal utility analysis.

- Rationality (samjhdar)
- Cardinal measurement of utility - no. ke terms me
- Money is the measuring rod of utility.
- Theory assumes all the other factors constant
- Continuity in consumption.
- Units are homogenous or identical in nature
- Standard units
- Marginal utility of money remains constant.

## ▶ Classification of wants.

- Necessaries - essential for living
- Comforts - make life comfortable & satisfying
- Luxuries - which are superfluous & expensive.

## ▶ UTILITY

- Utility is thus the want satisfying power of a commodity
- Utility is subjective and relative entity.
- Marginal utility analysis propounded by **Alfred Marshall**.
- Indifference curve analysis propounded by **J.R. Hicks** and **R. G. D. Allen**.



## The Marginal Utility Analysis.

- It is a quantitative measure
- Utility is the numerical score in terms of utils.
- Total utility - as the sum of utility derived from different units of a commodity consumed by a consumer.
- Marginal utility - it is the utility derived from the marginal or one additional unit consumed or possessed by the individual.
- $MU_n = TU_n - TU_{n-1}$

## The Law of Diminishing Marginal Utility.

As consumer increases the consumption of any one commodity keeping constant the consumption of all other commodity, the marginal utility of the variable commodity must eventually decline.

- ★ TU rises as long as MU positive but at diminishing rate.
- ★ MU diminishes.
- ★ MU is zero TU is maximum (saturation point)
- ★ MU is negative, TU is diminishing.



## ▷ Properties of Indifference Curve

- Indifference curve slopes downward to the right - because ek ko sacrifice to durre ko gain.
- Indifference curves are always convex to origin - due to falling MRS.
- Indifference curve will be L shaped if two goods are perfect complementary.
- Indifference curve can never intersect each other - as higher and lower level are equal.
- A higher indifference curve represents a higher level of satisfaction than the lower indifference curve.
- Indifference curve will not touch either axes - as it is combination of two goods.

## Consumer Surplus

Marshall defined the concept of consumer surplus as the "excess of the price which a consumer would be willing to pay rather than go without a thing over that which he actually does pay", is called consumer surplus.

### APPLICATIONS

- Consumer surplus is a measure of the welfare that people gain from consuming goods and services.



- Helps in setting price.
- Large scale investment decision involve cost benefit analysis which takes into account the extent of consumer surplus.
- For raising price.
- Guide to finance ministry.

## LIMITATIONS

- Cannot be measured precisely.
- In case of necessities, consumer surplus is infinite.
- Consumer surplus is affected by availability of substitute.
- No simple rule for deriving the utility scale.
- Consumer surplus cannot be measured in terms of money.
- Concept can be accepted only if it is assumed that utility can be measured in terms of money or otherwise.

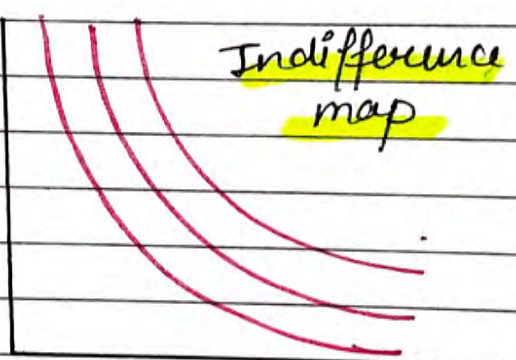
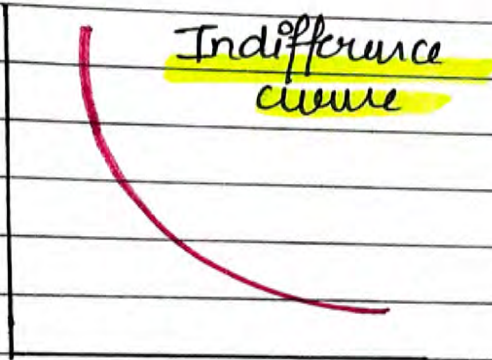
## ▶ LIMITATIONS AND EXCEPTIONS OF THE LAW OF DIMINISHING MARGINAL UTILITY

- ★ Rigorous Assumption
- ★ Not Independent
- ★ Law is not universal
- ★ Prestigious goods.
- ★ Hobbies, rare collection, creative art, painting, music, poetry etc.
- ★ In case of habit
- ★ People with miserly behaviour.



# Indifference Curves

- Is a curve which represents all those combination of two goods which give same satisfaction to the consumer.
- It is also called as iso-utility curve or equal utility curve.
- A set of indifference curve is known as indifference map.



# Marginal rate of substitution (MRS)

- Is the rate at which a consumer is prepared to exchange goods X and Y, holding the level of satisfaction constant (i.e. moving along the indifference curve).
- MRS is falling beoz consumer want to gain more and sacrifice less.
- Two reasons for this -
  - ★ want for a particular good is satiable so that when a consumer has more of it, his intensity of want for it decreases.





- Most goods are imperfect substitute of one another.  
If perfect substitute the MRS will be constant.

# UNIT-3 Supply

Supply refers to the amount of a good or service that the producers are willing and able to offer to the market at various prices during a given period of time.

## Determinants of Supply -

- Price of the good - P increases S increases
- Prices of the related goods - P increases of related goods S increases of it.
- Prices of factors of production - Cost increases Supply decreases.
- State of technology - new technology S increases.
- Government policy - taxes increases S decreases  
subsidy increases S increases.
- Nature of competition and size of industry -  
competitive S increases
- Expectations - Future price increase S decreases  
currently.
- No. of sellers - more firms more S
- Other factors - govt. policies, natural factors etc.



# Marginal rate of substitution (MRS)

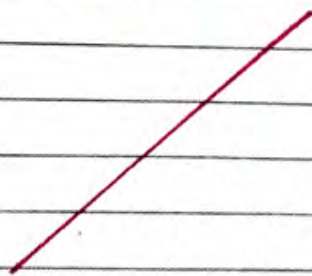
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  - ★ want for a particular good is satiable so that when a consumer has more of it, his intensity of want for it decreases.
  - ★ Most goods are imperfect substitute of one another. If perfect substitute the MRS will be constant.

## ▶ The Law of Supply

Other things remain constant, P increases S increases and vice versa (positive relation).

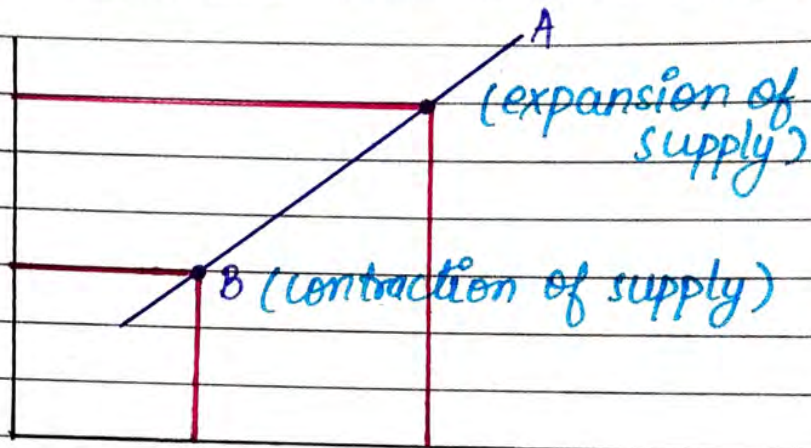
Price

Supply

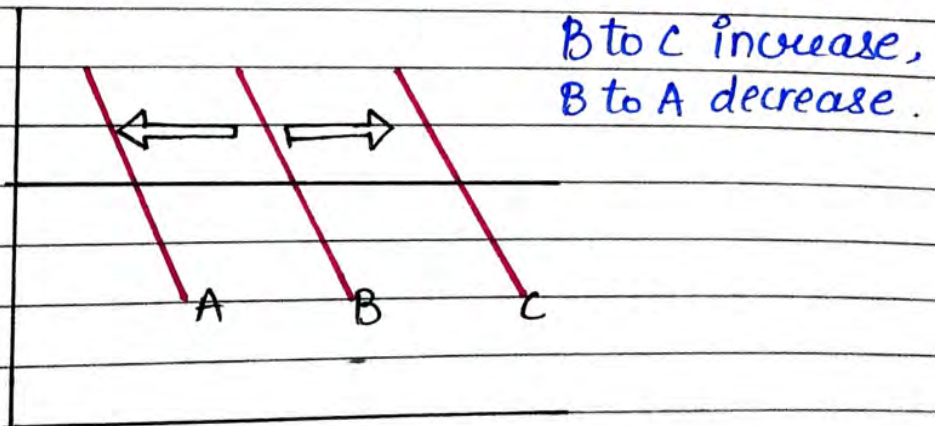




**Movements on the supply curve - increase or decrease in the quantity supplied (due to price).**



**Shift in supply curve - increase or decrease in supply (due to change in other factors other than price).**





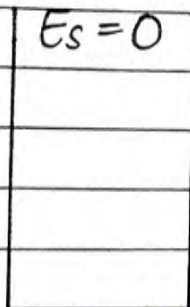
# Elasticity of supply

As the responsiveness of the quantity supplied of a good to a change in price.

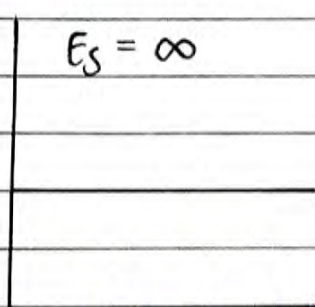
$$E_s = \frac{\% \text{ change in Quantity supplied}}{\% \text{ change in Price}}$$

$$E_s = \frac{\Delta q_s}{\Delta P} \times \frac{P}{q_s}$$

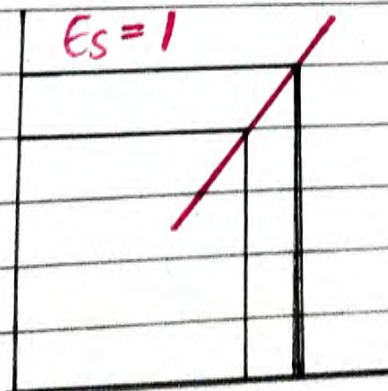
## Types of Supply Elasticity



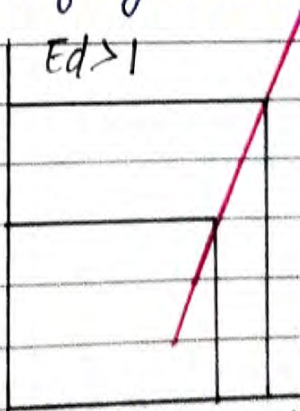
Perfectly inelastic



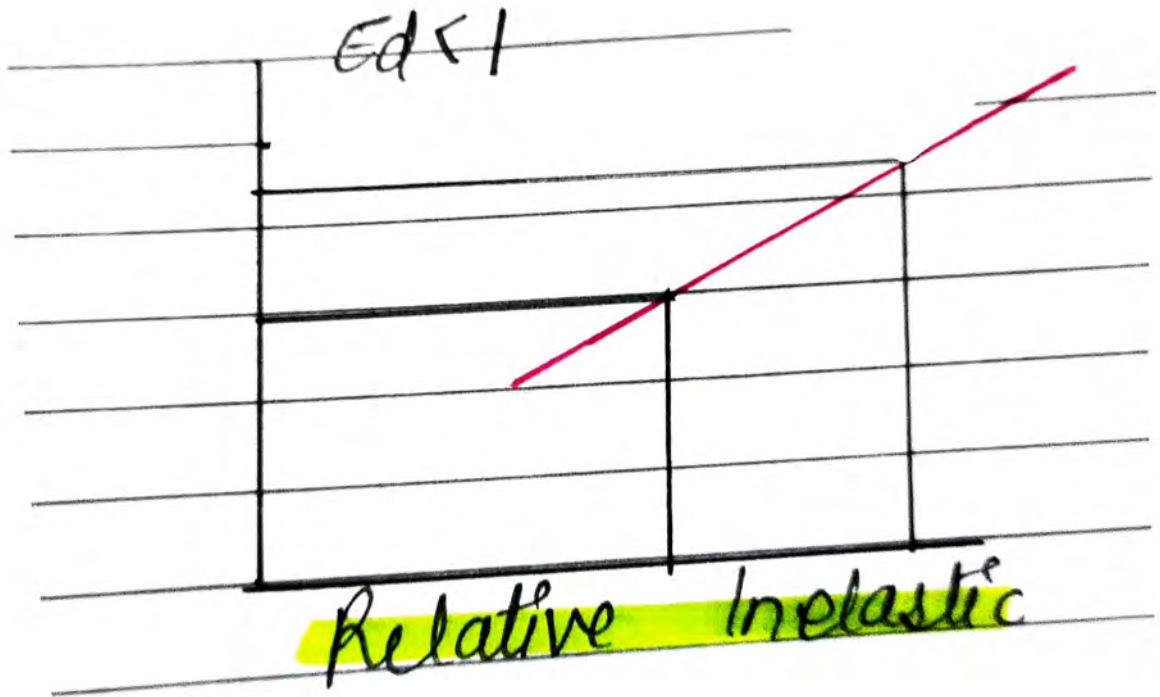
Perfectly Elastic



Unitary



Relatively elastic





# Arc elasticity

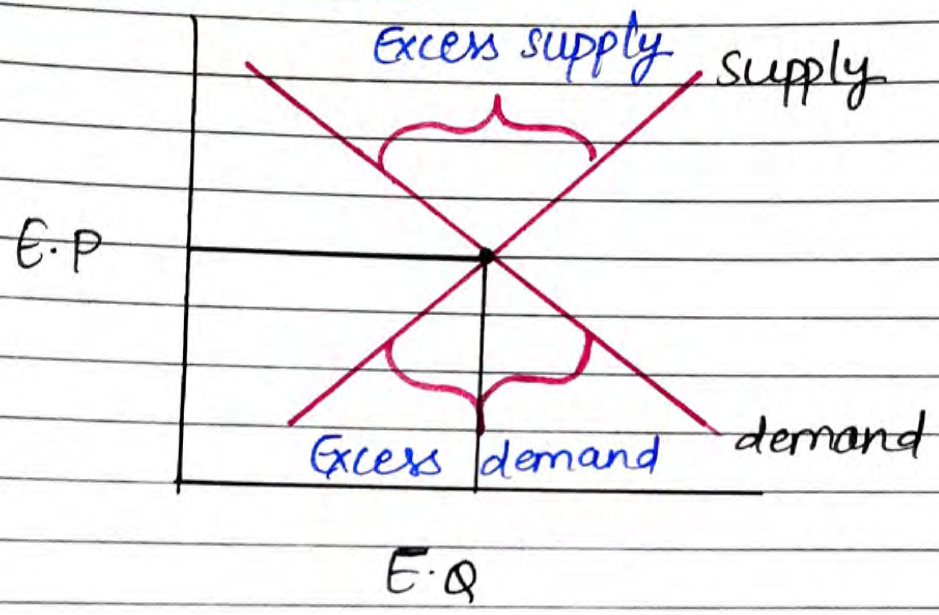
$$E_p = \frac{Q_2 - Q_1}{Q_2 + Q_1} \times \frac{P_2 + P_1}{P_2 - P_1}$$

## → Determinants of elasticity of Supply

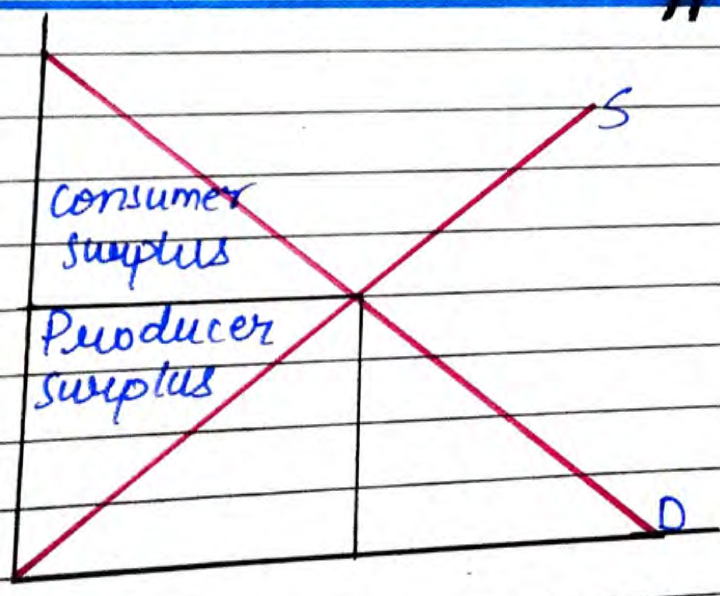
- \* Cost increases  $S$  is inelastic and vice versa
- \* Long period supply is elastic and vice versa
- \* Large number of producers supply is elastic and vice versa
- \* Unutilized capacity is there supply is elastic and vice versa
- \* Raw material and inputs cheaper supply is elastic and vice versa
- \* Adequate stocks of raw material etc supply will be elastic and vice versa
- \* Factor of production commonly available and can easily be substituted or increased then supply is elastic and vice versa
- \* Capital and labour are occupationally mobile then supply is elastic and vice versa

\* Expectation of substantial rise in price supply would be inelastic and vice versa.

### Equilibrium Price



### Market Equilibrium and social efficiency





जिंदगी की इस  
जंग में

तू खुद ही खुदका  
हमसफर है!