Demand Analysis

What is Demand?

- Every want supported by the willingness and ability to buy constitutes for a particular product or service.
- In other words demand refers to the quantity of a good or service that consumers are willing and able to purchase at various prices dealing a period of time.
- For example: If I want a car and I cannot pay for it, there is no demand for the car from my side.
- A product or service is said to have demand when three conditions are satisfied:

1. Desire to acquire it
2. Ability to pay the specified price for it
3. Willingness to pay for it

- Unless all these conditions are fulfilled, the product is not said to have any demand.

$$Demand = Desire\ to\ acquire + willingness\ to\ pay + ability\ to\ pay$$

Demand Analysis:

- Demand analysis means the study of factors, which influence the demand of commodity or a service. It is only on the basis of these factors or determinants of demand one can forecast the demand.
- Under this demand analysis we study elasticity of demand and methods of its measurement, sales forecasts and different methods to forecast sales or demand, manipulating (handle skillfully) demand and appropriate change in allocation of resources.
- So analysis of demand enables the producer to adjust his production to demand to maximize the objective function.

Demand analysis objectives:

1. To study and analyze the determinants of demand
2. To measure the elasticity of demand
3. To prepare sales or demand forecasts
4. Manipulating demand and
5. To make appropriate changes in allocation of resources

Types of demand

- Demand is generally classified on the basis of various factors, such as nature of a product, usage of a product, number of consumers of a product, and suppliers of a product.
- The different types of demand are as follows:

1. Individual and market demand:

- It refers to the classification of demand of a product based on the number of consumers in the market.
- The quantity of a commodity which an individual is willing to buy at particular price of the commodity during a specific time period, given his money and income, his taste, and prices of other commodities is known as ***"Individual demand"*** for a commodity.
- The total quantity which all the consumers of a commodity are willing to buy at a given price per unit, given their money income, taste, and prices of other commodities is known as ***"market demand"*** for the commodity.

Types of demand

2. Demand for firm's product and industry's products:

- This refers to the classification of demand on the basis of market.
- The demand for the products of a firm at given price over a time period is known as ***"demand for the firm's product"***.
- For example, the demand for Toyota cars is organization demand or demand for firms product.
- The aggregate of demand for the product of all firms of a particular industry is known as the ***"market demand for industry's product"***.
- For example, the demand for cars of various brands, such as Toyota, Maruti Suzuki, Tata, and Hyundai, in India constitutes the industry' demand.

Types of demand

3. Autonomous demand and derived demand:

- This refers to the classification of demand on the basis of dependency on other products.
- Autonomous demand refers to the demand for products and services directly.
- The demand for a product arises out of the purchase of a parent product is known as Derived Demand.
- The demand for the services of a super specialty hospital can be considered as *"autonomous demand"*, where as the demand for the hotels around that hospital is called "derived demand".

Eg:

- If there is no demand for houses, there may not be demand for steel, cement, bricks, and so on.
- Demand for houses is autonomous where as demand for these inputs is *derived demand*.

Types of demand

4.<u>Demand for durable and non durable(perishable) goods:</u>

- Here the demand for goods is classified based on their durability or usage.
- Durable goods are those goods which give service relatively for a long period (or) these goods which will meet your current needs.
- Eg: clothes, shoes, houses, furniture, refrigerators, scooters etc.
- Non-durable goods are those goods which can be used or consumed only once and their total utility is exhausted in a single use.
- Eg: cement, coal, fuel, eatables like milk, vegetables, fish, rice, wheat, sugar etc.

5. <u>Short term and long term demand:</u>

- Refers to the classification of demand on the basis of time period.
- Short term demand refers to the demand for such goods are demanded over a short period.
- Eg: fashion consumer goods, goods for seasonal use such as umbrellas, raincoats, sweaters.
- Long term demand refers to the demand which exists over a long period.
- Eg: generic (groceries) goods.

Types of demand

6. Joint & composite demand:

- When two or more goods are jointly demanded at the same time to satisfy a single want, it is called *joint or complementary demand*.
- Eg: car and petrol, pen and ink, tea and sugar etc.
- The demand for a commodity that has several alternative uses is known as *composite demand*.
- Eg: coal is demand by railways, factories, households etc.

7. Direct demand and indirect demand:

- Demand for goods that are directly used for consumption by the ultimate consumer is known as *direct demand*.
- Eg: bread, tea, readymade shirts, scooters etc.
- The demand for goods is not used by consumer directly. They are used by producers for producing other goods. So, indirect demand is also known as *producer goods demand*.
- Eg: plant, machinery, tools, steel etc.

Types of demand

8. Market segment demand and Total market segment demand:

- Market segment demand refers to demand for the product in that specific market segment.
- The total market demand will be aggregate demand for the product from all the segments.
- [The market may be segment on the basis of age, sex, geographical conditions etc.]

Demand function

- The demand function is an algebric expression of the relationship between demand for a commodity and various determinants that affect this quantity.
- There are also two types of demand functions.
- They are:

1. Individual demand function:

An individual demand function refers to the quantities of a commodity demanded at various prices, given his income, prices of related goods and tastes.

It is expressed as:

$$D=f\,(p)$$

Where

- D= quantity demanded
- f = functional relation
- P = price of commodity

Demand function

2. Market demand function:

An individual demand function is the basis of demand theory.

But it is the market demand function i.e., the main interest to managers.

It refers to the total demand for a good or service of all the buyers taken together.

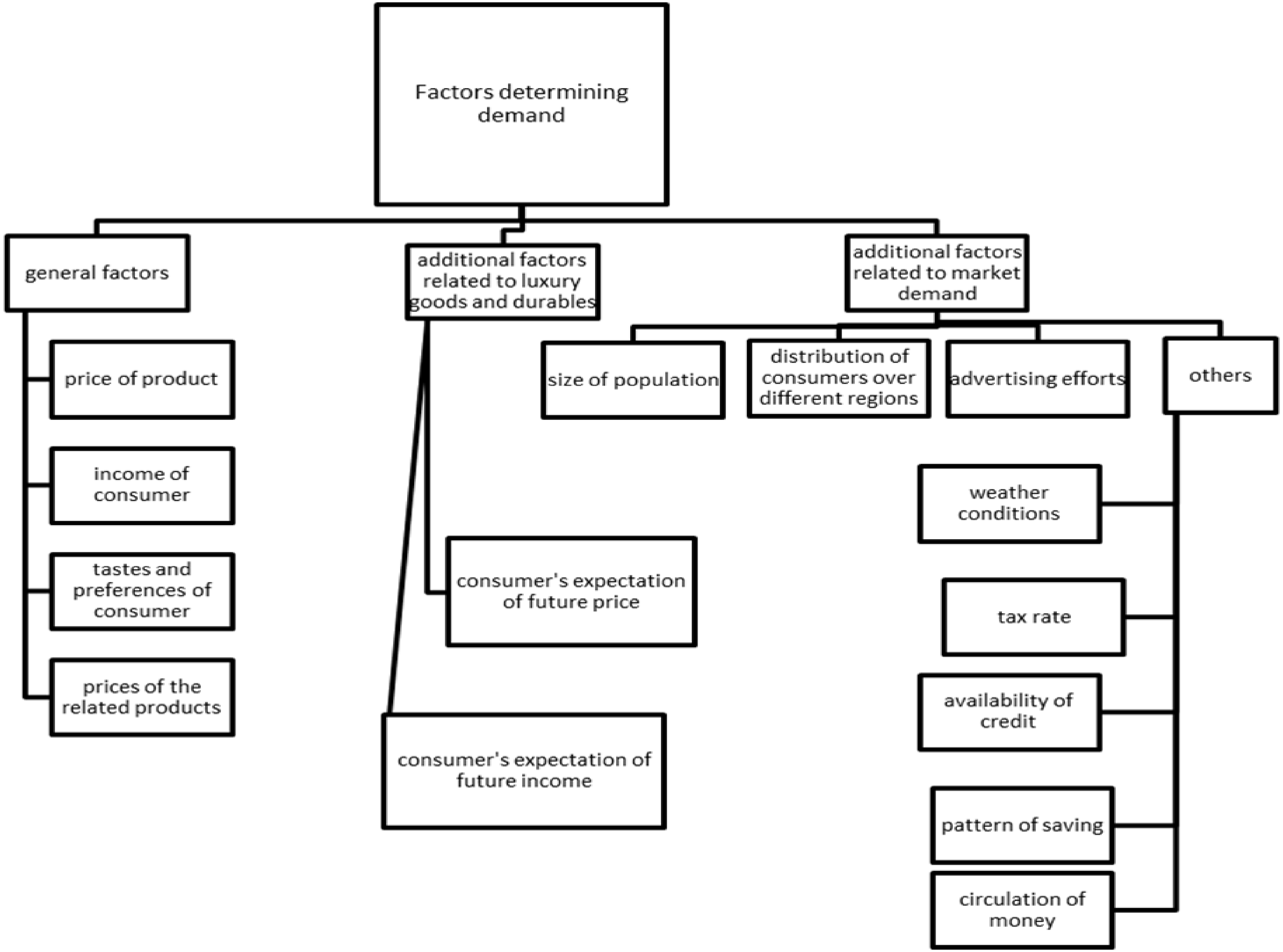
The market demand function may be expressed mathematically as:

$$\mathbf{D_X = f\,(P_X, Pr, M, T, A, U)}$$

Where

- D_x = quantity demanded for commodity
- f = functional relation
- P_x = price of commodity
- P_r = prices of related commodities i.e. substitutes and complementaries
- M = money income of the consumer
- T = taste of the consumer
- A = advertisement effect
- U = unknown variables

Factors determining the demand



Factors determining the demand

The demand for a particular product depends on several factors.

The following factors determine the demand for a given product.

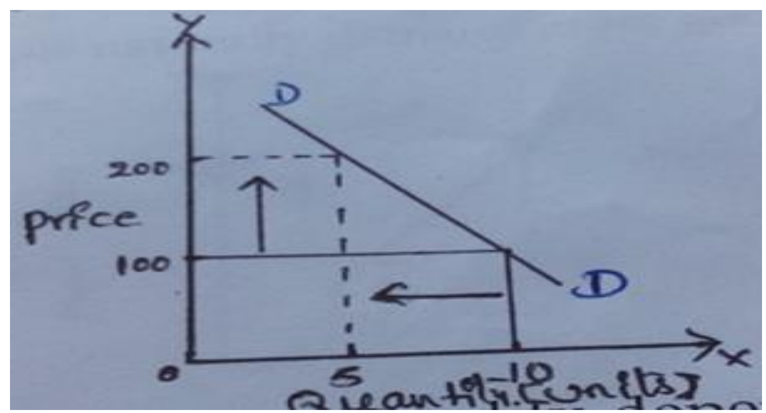
1. Price of product:

Demand for a product is inversely related to its price.

In other words, if price rises, the demand falls and vice versa.

This is the price of demand function showing the price effect on demand.

Price of the Product (Rs)	Quantity in (Units)
100/-	10
200/-	5



Factors determining the demand

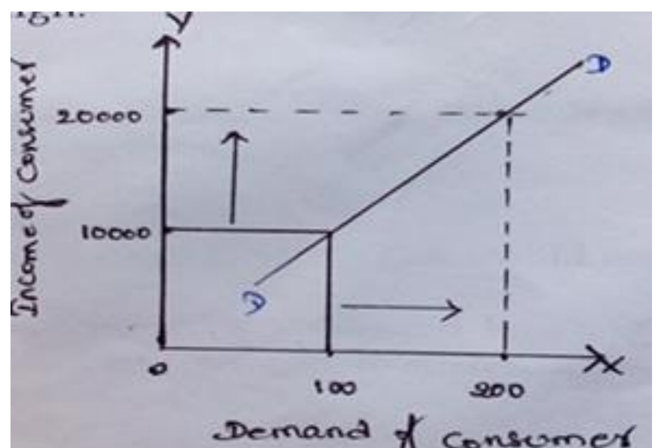
2. Income of the consumer:

It is the ability to buy a commodity depends upon the income of the consumer.

When the income of the consumer increases, they buy more and when the income of the consumer decreases, they buy less.

A rich consumer demands more and more goods because his purchasing power is high.

Income of consumer (Rs)	Demand of consumer (Units)
10,000/-	100
20,000/-	200



Factors determining the demand

3. Taste and preferences:

The demand for a product depends upon tastes and preferences of the consumer.

If the consumers develop taste for a commodity they buy whatever may be the price.

A favorable in consumer preference will cause great demand to increase. Likewise an unfavorable change in consumer preferences will cause the demand to decrease.

4. Prices of related goods:

The demand for product "X" is determined by the prices of its related products: substitutes and complementaries.

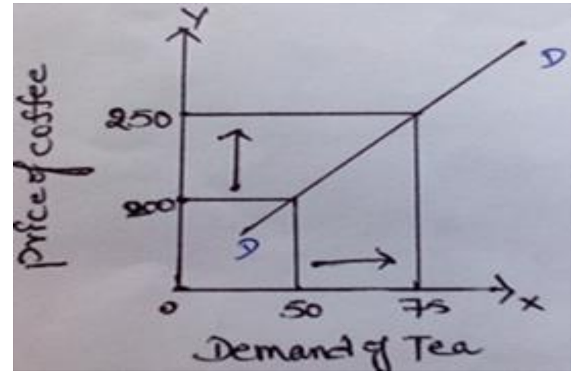
(I) Substitutes:

Commodities are substitutes when one can be replaced by another.

Eg: tea and coffee

Factors determining the demand

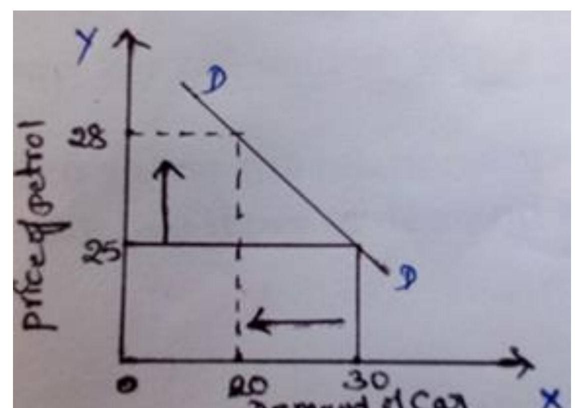
Price of coffee (Rs)	Demand of Tea (Units)
200/-	50
250/-	75



(II) Complemetaries: Commodities are complements when a change in the demand for some other commodity in the 'same direction'.

Eg: cars and petrol, refrigerator and voltage stabilizer etc.

Price of Petrol (Rs)	Demand of Car
25/-	30
28/-	20



Factors determining the demand

5. Consumer's expectation:

- A consumer's expectation about the future changes in price and income may also affect his demand.
- If a consumer expects a rise in prices he may buy large quantities of that particular commodity.
- Similarly, if he expects its prices to fall in future, he will tend to buy less at present.
- Similarly, expectation of rising income may induce him to increase his current consumption.

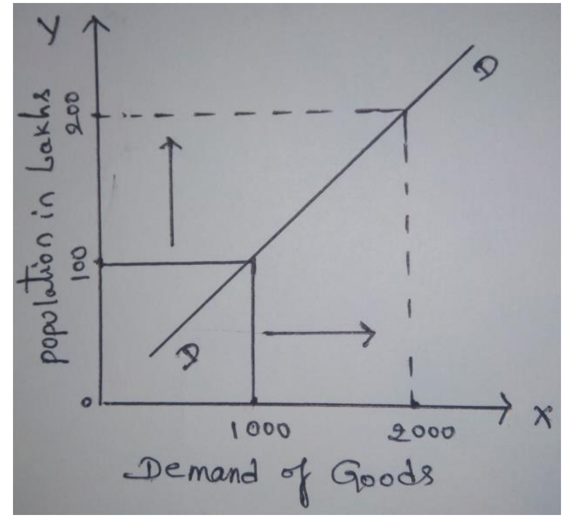
6. Size of population:

The size of population is also another important factor that affects the market demand.

With the increase in population, people naturally demand more goods for the survival.

Factors determining the demand

Population (in Lakhs)	Demand of goods (Units)
100	1000
200	2000



7. Advertising efforts:

Advertisement helps in increasing demand by informing the potential consumers about the availability of the product, by showing the superiority of the product, and by influencing consumer choice against the rival products.

8. Distribution of consumer's over different regions:

it is also another important factor determine the demand based on social, economic and demographical reasons.

Factors determining the demand

9. Others

Weather conditions:

the demand for certain items purely depends on climatic and weather conditions. They are seasonal factors.

Eg: Demand for cool drinks in summer.

Demand for sweaters in winter season.

Tax rate:

The tax rate also affects the demand. High tax rate would generate low demand for goods.

Availability of credit:

The purchasing power is influenced by the availability of credit. If there is availability of credit cheap, the consumers try to spend more on consumer durables, thereby demand for certain products increase.

Pattern of saving:

Demand is also influenced by the pattern of saving. If people begin to save more, their demand will decrease and if saving is less, their demand will increase.

Circulation of Money:

It also affects the demand. If more money circulates among the people, more of a thing is demanded by the people because they have more purchasing power and vicev ersa.

Law of demand:

- Law of demand explains the relationship between change in quantity demanded and change in price.
- It states that higher the price, the lower would be quantity demanded in the market; and lower the price, the higher would be the quantity demanded in the market.
- In other words, the law of demand says that the price and the quantity demanded are inversely related, all other things being equal.

According to Marshall, "The amount demanded increases with a fall in price, and diminishes with a rise in price". Thus it expresses an inverse relation between price and demand.

The law refers to the direction in which quantity demanded changes with a change in price.

Law of demand:

Assumptions of law of demand:

- Income level should be remain constant
- Taste of the buyer should not change
- Prices of other goods should remain constant
- No new substitute for the commodity
- Price rise in future should not be expected

Given these assumptions, the law of demand is explained in terms of demand schedule and a demand curve.

Demand schedule:

It is a table or a chart which shows the relationship between price and demand of a commodity or service unit of time. There are two types of demand schedules.

- Individual market schedule
- Market demand schedule

Law of demand:

Individual demand schedule:

This is a tabular statement showing the different quantities of a commodity demanded by a consumer or house hold with a given period of time at different prices.

Daily demand schedule of a household for apples:

Price (per Kg)	Apples Demanded (in Kg)
10	1
8	2
6	3
4	4
2	5

Law of demand

Market demand schedule:

- refers to the total demand for a commodity by all the consumers.

Price (per kg)	Quantity demanded by household A	Quantity demanded by household B	Quantity demanded by household C	Quantity demanded by household D	Market demand (in kg)
10	1	2	0	0	3
8	2	3	1	0	6
6	3	4	2	1	10
4	4	5	3	2	14
2	5	6	4	3	18

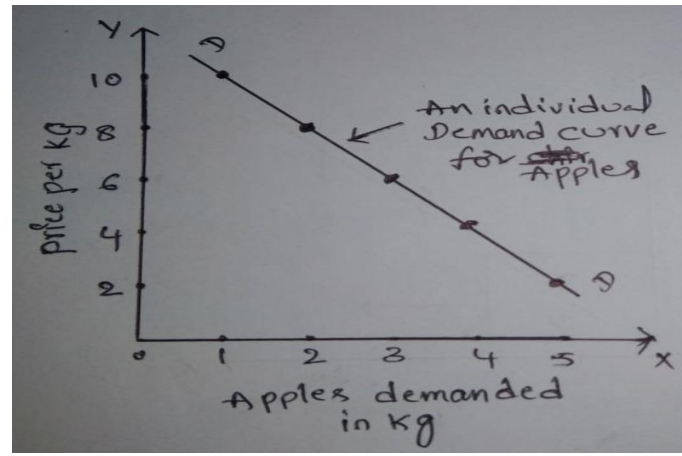
Law of demand

Demand curve:

The graphical representation of demand schedule is the demand curve I.e. the whole of a line showing price-demanded relationship is called demand curve.

Demand curves are two types:

1. Individual demand curve
2. Market demand curve



Individual demand curve:

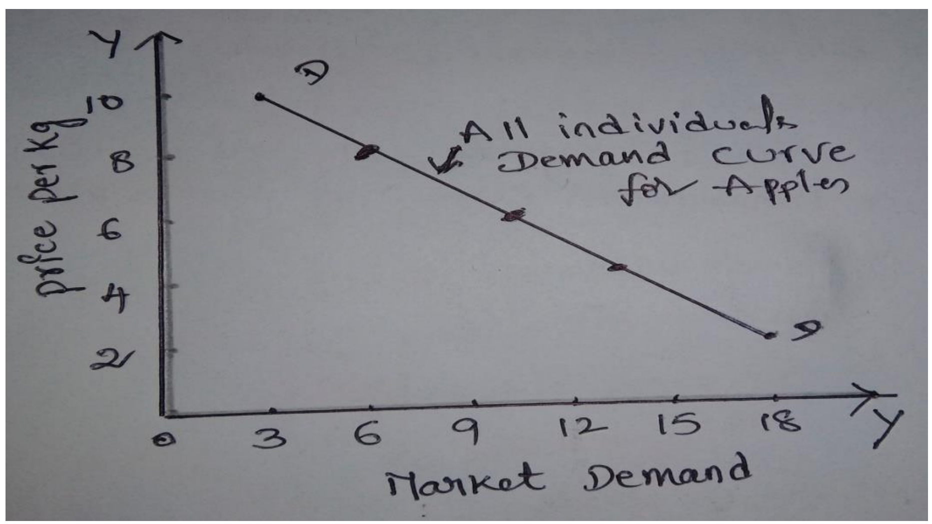
Individual demand curve represents the graphical representation of various quantities of a commodity demanded by a single consumer per period of time at various quantities of commodity, keeping all the other factors affecting the demand constant.

Law of demand

Market demand curve:

Market demand curve represents the diagrammatic presentation of various quantities of commodity demanded by all the existing consumers per period of time at various prices of the commodity keeping all the factors affecting demand constant.

It is a summation of all the consumers purchasing the commodity at various price levels.



Change in demand/Shift in demand

- Change & Shift in demand
  - Extension and contraction of demand (movement along the demand curve) caused by change in price
    - extension of demand(downward movement of demand curve)
    - contraction of demand(upward movement of demand)
  - Decrease and increase of demand (shift in demand curve) caused by the factors other than price
    - increase in demand(upward shift of demand curve)
    - decrease in demand(Downward shift of demand curve)

Change in demand/Shift in demand

Change in demand:

The extension and contraction in demand due to change in the price is called change in demand.

Change in demand leads to a change in demand curve to the downward or the upward movement.

So it is known as extension or contraction of demand.

Shift in demand:

The increase or decrease in demand due to change in the factors other than price is called shift in demand.

shift in demand leads to a shift in demand curve to the right or the left.

So it is known as increase or decrease of demand.

Change in demand/Shift in demand

Extension of demand:

An extension is the downward movement along a demand curve which indicates that a higher quantity is demanded for a given fall in the price of the good.

Px in Rs	Dx in Units
20	100
15	150

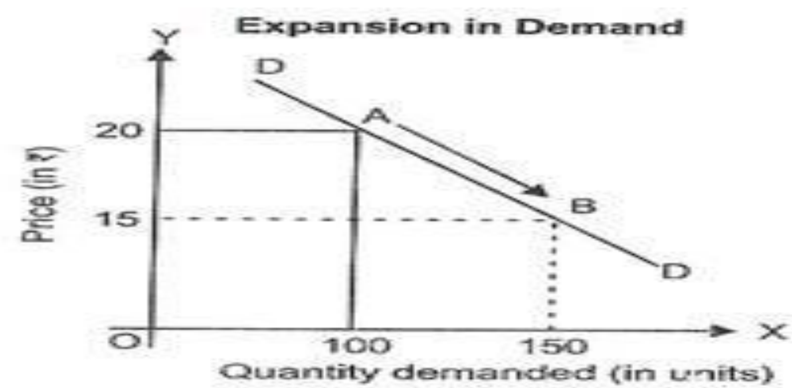


Fig. 3.5

Change in demand/Shift in demand

Contraction of demand:

A contraction is the upward movement along a demand curve, which indicates that a lower quantity is demanded for a given increase in the price of the good.

Price in Rs	Dx in Units
20	100
25	70

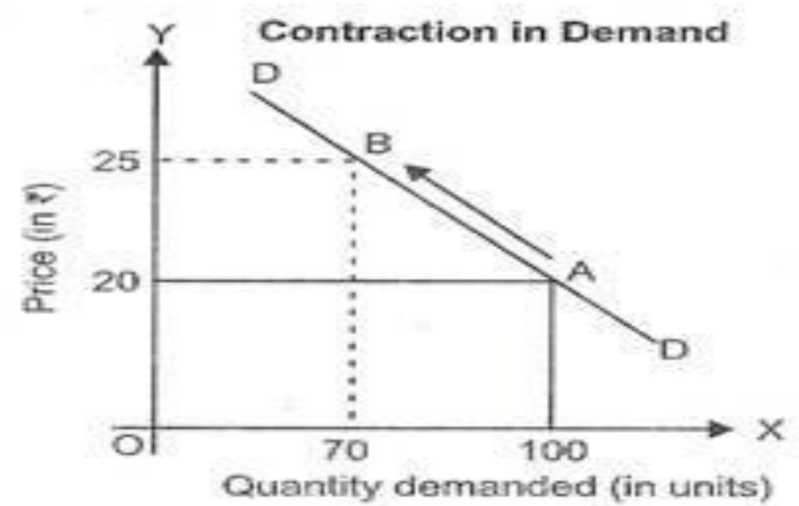


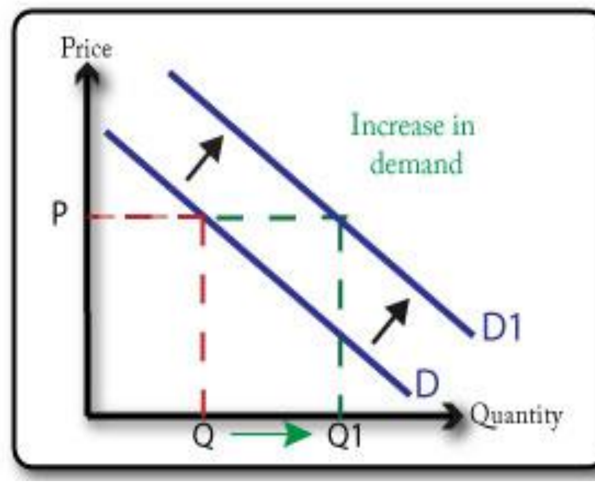
Fig. 3.6

Change in demand/Shift in demand

Increase in demand or upward shift of demand curve:

If the consumers are willing and able to buy more quantity of goods at the same price, the result will be an increase in demand .The demand curve will shift to the right.

Price in Rs	Dx in units
10	20
10	25



shift may be due to:

- Increase in consumer income.
- Increase in the price of substitutes
- Increase in taste of consumer etc.

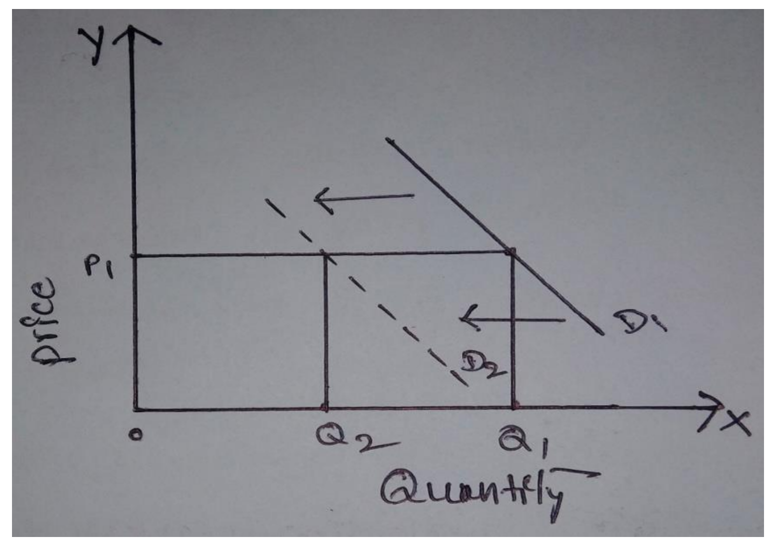
Change in demand/Shift in demand

Decrease in demand or downward shift of demand curve:

A decrease in demand occurs when buyers are ready to buy less of a product at the same price because of factors like fall in income, fall in the price of substitute and fall in tastes by consumers and rise in price of complementary goods and so on.

A decrease in demand will shift the demand curve to the left.

Px in Rs.	Dx in Units
10	20
10	15



Exception to the law of demand (or) operation of the law of demand:

- According to law of demand, more of a commodity will be demanded at lower prices, than at higher prices, other things being equal.
- The law of demand is valid in most of the cases.
- However there are certain situations where the law of demand does not apply or becomes ineffective, i.e. with a fall in the price the demand falls and with the rise in price the demand rises are called as the **exceptions to the law of demand**.
- The following are the important Exceptions to the law of demand.

Conspicuous goods:(Veblen goods):

- Some consumers measure the utility of a commodity by its price .i.e. ,if the commodity is expensive they think that it has got more utilities.
- As such they buy less of this commodity at low price and more of it at high price.
- Diamonds and platinum are often given an examples of this case.
- Higher the price of diamonds, higher is the prestige value attached to them and hence higher is the demand for them.

Exception to the law of demand (or) operation of the law of demand:

Giffen goods (Giffen's paradox):

people whose income are low purchase more of a commodity such as broken rice, bread etc (which is their staple food) when its price rises.

Conversely when its price falls, instead of buying more. they buy less of this commodity and use the savings for the purchase better goods such as meat.

This phenomenon is called Giffen's paradox and such goods are called inferior or Giffen goods.

In case of ignorance of price changes:

At times, the customer may not keep track of changes in price.

In such a case, he tends to buy even if there is increase in price.

Where there is a shortage of necessities feared:

If the customers fear that there could be shortage of necessities, then this law does not hold good.

They may tend to buy more than what they require. Immediately, even if the price of product increases.

Exception to the law of demand (or) operation of the law of demand:

Necessities of life:

- Normally, the law of demand does not apply on necessities of life such as salt, rice, medicine etc. even the price of these goods increases, and the consumer does not reduce their demand.
- Rather he purchases them even the prices of these goods increase often by reducing the demand for comfortable goods.
- This is also a reason that the demand curve slopes upwards to the right. In case of these exceptions, the demand curve slopes upwards. An exceptional demand curve is shown in below figure:

Figure 10.7

Why does the demand curve slope downwards?

- The law of demand states that ,other things remaining the same an individual consumer will buy more units of a commodity at a lower price and less of that commodity at a higher price.
- Generally, The demand curve slopes downwards from left to right .
- Some of the reasons for the downward slope of demand curve are :

Traditional view:

Law of diminishing marginal utility:

As one goes on consuming more and more units of a commodity its utility to him goes on diminishing.

Diverse uses of a commodity:

A commodity tends to be put to more use when it becomes cheaper, thus, the existing buyers purchase more and some new consumers enter the market thus more demand is created when price falls.

Why does the demand curve slope downwards?

Change in the no. of consumers:

When the price of a commodity is reduced. then many other consumers who were not consuming the commodity earlier will start purchasing it now.

Thus the existing buyers purchase more and some new consumers enter the market.

Modern view:

Income effect:

A fall in the price of a superior good will lead to a rise in the consumers real income.

The consumer can therefore buy more of it .On the contrary, rise in the price of a superior good will result in a decline in the consumer real income: The consumer will therefore, buy less of it.

Substitution effects:

A fall in the price of a good, while the prices of its substitutes remain unchanged, will make it attractive to the buyers who will now demand more of it. On the contrary, a rise in the price of a commodity, while the price of its substitutes remains unchanged, will make it unattractive to the purchasers who will now purchase less of it.


Question?


THANK
YOU