

## **MODULE -2**

### **DEMAND ANALYSIS AND DEMAND FORECASTING**

Law of Demand, Exceptions to the Law of Demand, Elasticity of Demand – Classification of Price, Income & Cross elasticity, Advertising and promotional elasticity of demand. Uses of elasticity of demand for Managerial decision making, Measurement of elasticity of demand. Law of supply, Elasticity of supply, Demand forecasting: Meaning & Significance, Methods of demand forecasting.

#### **INTRODUCTION:**

The economy relies on the willingness of consumers to make purchases and the ability of companies to supply them. When consumers make more purchases, inflation and interest rates decrease. When consumers decrease their purchases or if producers are unable to supply, inflation and interest rates increase. Consumer demand drives production and supports a thriving economy. In this article, we provide the demand definition in economics, explore the different types of demand and explain the factors that influence it.

#### **MEANING OF DEMAND:**

Demand is an economic principle referring to a consumer's desire to purchase goods and services and willingness to pay a price for a specific good or service.

Demand refers to the willingness and ability of consumers to purchase a given quantity of a good or service at a given point in time or over a period in time. Demand is a consumer want or a need supported by an ability to pay.

#### **DEFINITION OF DEMAND:**

• Demand refers to consumers' desire to purchase goods and services at given prices. • Demand can mean either market demand for a specific good or aggregate demand for the total of all goods in an economy.

#### **TYPES OF DEMAND:**

- Joint demand
- Composite demand
- Short-run and long-run demand

- Price demand

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- Income demand
- Competitive demand
- Direct and derived demand

### **1. Joint demand**

Joint demand is the demand for complementary products and services. These can be products that are accessories for others or that people commonly purchase together. Foreexample, cereal and milk or peanut butter and jelly. The two are linked but demand for one is not necessarily dependent on the demand for the other.

### **2. Composite demand**

Composite demand happens when there are multiple uses for a single product. For example, corn can be used as animal feed, ethanol and food in its whole form. The rise in demand for any of these products leads to a shortage in supply for the others. This shortage can lead to a rise in price. **3.**

### **Short-run and long-run demand**

Short-run demand refers to how people will immediately react to price changes while elements are fixed. For example, if the demand for a product drastically decreases and a manufacturer has high overhead costs, they have no choice but to absorb the profits lost. Over time, or in the long run, companies have a chance to adjust to the new situation by decreasing labor or increasing price and supplies.

### **4. Price demand**

Price demand relates to the amount a consumer is willing to spend on a product at a given price. Businesses use this information to determine at what price point a new product should enter the market. Consumers will buy items based on their perception

of that product's value. Price elasticity refers to how the demand will change with fluctuations in price.

### **5. Income demand**

As consumers make more income, quantity demand increases. This means people will buy more overall when they earn more income. Tastes and expectations also change with an increase in income, reducing the size of one market and increasing the size of another. Consumers will often buy a product or service because it is what they can afford but may deem lower quality.

The demand for those lower-quality products will decrease as income increases.

## **6. Competitive demand**

Competitive demand occurs when there are alternative services or products a customer can choose from. From a business's perspective, they can use fluctuations in the price of their

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competitors to determine how their own will sell. An example of this is between name-brand and store-brand medicine. If a consumer prefers a name brand but it is out of stock or the price increases significantly, the store brand will see a rise in sales.

## **7. Direct and derived demand**

❖❖ Direct demand is the demand for a final good. Food, clothing and cell phones are an example of this. Also called autonomous demand, it's independent of the demand for other products. ❖❖

Derived demand is the demand for a product that comes from the usage of others. For example, the demand for pencils will result in the demand for wood, graphite, paint and eraser materials. In this example, the demand for wood is dependent on the demand for its uses.

## **FACTORS THAT INFLUENCE DEMAND:**

Demand is influenced by the activities of consumers and businesses. Businesses attempt to drive demand through marketing efforts. Consumers drive demand through their tastes, income levels and resistance to price increases.

### **1. Price:**

Price is the value of product or service expressed in monetary terms.

In other words, the price is the amount of money whose payment is expected or required for buying a product or accessing a service. A price of a product has a maximum effect on its demand. If other factors remaining constant (do not change) then the relationship between price and demand is as follows:

If a product's price is low, then its demand is high.

If a product's price is high, then there is low demand for it.

Hence, it can be said that price and demand are inversely proportional to each other, provided other determinants remain constant or do not change. In other words, if price increases then demand falls and vice-versa.

### **2. Income**

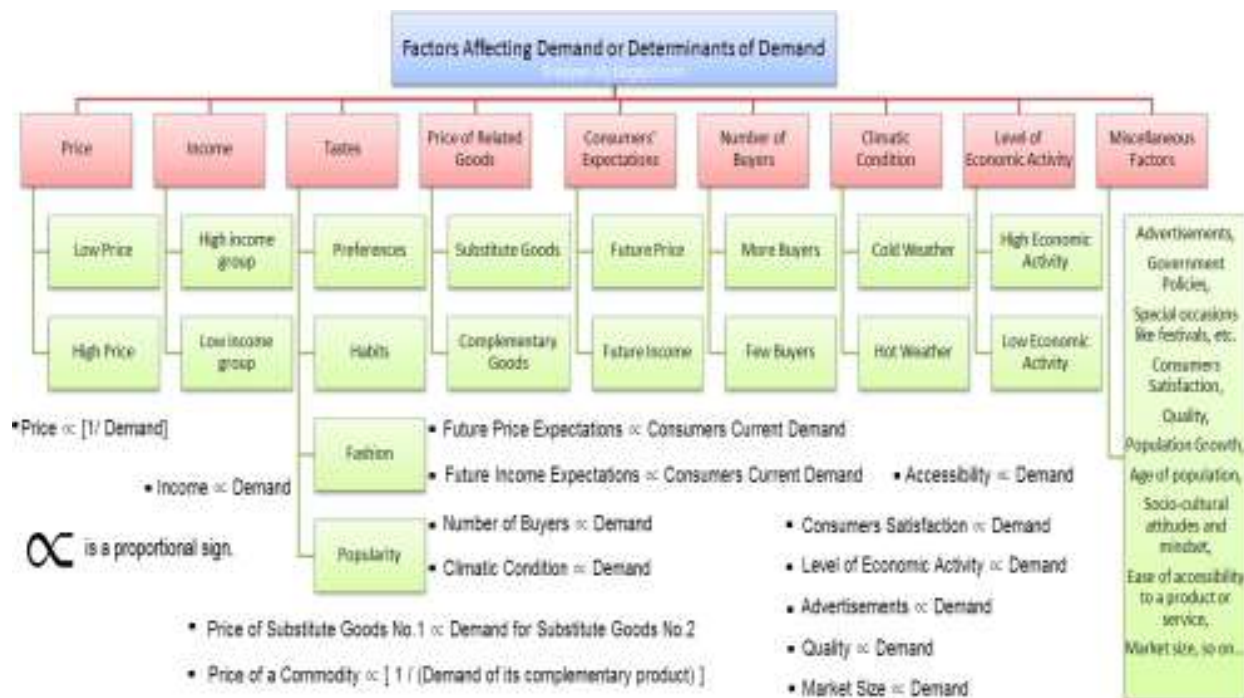
Income of an individual is his capacity to earn money. A person with a higher income makes more

money and vice-versa. After the determinant of price, income is the second most significant factor that affects demand. The relation between income and demand is as follows:

If income is high, then demand is also high.

If income is low, then demand is minimum. So, we can say, income is directly proportional to demand.

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### 3. Tastes

Tastes, Preferences, Habits, Fashion, and Popularity, also has an impact on the demand. Tastes of people i.e. their likes and dislikes affect demand: If people like a product, then its demand is high even when charged at higher prices.

If people dislike a product, then its demand is low even when charged at lower prices. Fashion or current trend in the **market** has an impact on the demand for a type of product. For example, now, young generation in India prefers to wear fashionable and comfortable western apparels over traditional and cheaper Indian clothes.

Popularity or fame also affects the demand for a product. For example, people prefer to buy regularly advertised and popular branded products over lesser known alternatives.

#### **4. Price of Related Goods**

Related Goods exhibit some relationship with each other.

These are of two types:

- Substitute Goods, and
- Complementary Goods.

Substitute Goods are products that can easily replace each other. That is, they can take each other's place. In other words, they act as an alternative to each other to satisfy a similar want or desire. They are even called Supplementary Goods because they readily supplement each other's role or function just

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in case of unavailability, scarcity, higher market price, etc.

#### **5. Consumers' Expectations**

Consumers' expectations arise out of their predictions about:

- Future Price, and
- Future Income.

If there is an expectation of a rise in the future price of an essential commodity, then current demand for it increases. If consumers are expecting a fall in the future price of an essential commodity, then current demand for it will also fall.

If consumers are expecting a rise in their future income, then their current demand will increase. If consumers are expecting a fall in their future income, then their current demand will decrease.

#### **6. Number of Buyers**

The number of buyers or consumers' population is another determinant of demand:

If buyers are more, then their demand will also be more.

If buyers are few, then their demand will also be small.

So, the population of consumers is directly proportional to the demand they generate in the market.

#### **7. Climatic Condition**

The climatic condition or weather of an area is also a determinant of demand. For example:

In colder regions, there is a high demand for woolen clothes.

In hotter areas, there is more demand for cotton clothes.

#### **8. Level of Economic Activity**

The level of economic activity is a determinant of demand: A high level of economic activity usually comprises of huge investments in infrastructure development, high rate of employment, high consumption power, rising standard of living of people, etc. It increases demand. Contrarily, a low level of economic activity displays characteristics like lack of investments, increase in the unemployment rate, low purchasing power, plunging living standards of people, so on. It decreases demand.

If economic activity increases, demand also increases and vice-versa.

### **DEMAND ANALYSIS:**

Demand analysis is the process of understanding the customer demand for a product or service in a target market. Companies use demand analysis techniques to determine if they can successfully enter a market and generate expected profits to expand their business operations. It also gives a better understanding of the high-demand markets for the company's offerings, using which

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businesses can determine the viability of investing in each of these markets.

Steps in market demand analysis:

- ❖ Market identification
- ❖ Business cycle
- ❖ Product Niche
- ❖ Evaluate competition

### **LAW OF DEMAND:**

The Law of demand explains the functional relationship between price of a commodity and the quantity demanded of the commodity. It is observed that the price and the demand are inversely related which means that the two move in the opposite direction.

An increase in the price leads to a fall in quantity demanded and vice versa. This relationship can be stated as "Other things being equal, the demand for a commodity varies inversely as the price".

Chief Characteristics of the Law of Demand

The following are the chief characteristics of the Law of Demand.

**1. Inverse Relationship.** The relationship between price and the demand of a particular commodity is inverse i.e., the demand of a commodity will fall with the increase in the price of the commodity or it will increase with the fall in the price.

**2. Price an Independent Variable and Demand a Dependent Variable.** In the Law of Demand, price



is regarded as an independent variable that affects the demand inversely. Thus, it is the effect of price on demand that is to be examined and not the effect of demand on price.

**3. It is a Qualitative Statement.** The Law of Demand simply explains the direction of change in the demand with the increase or decrease in the price of a commodity. It does not explain the quantum of change. The law is thus, a qualitative statement and not a quantitative statement. **4. Other thing remains the same.** The Law of Demand applies only when other things remain the same. In other words, there should be no change in factors influencing demand except price.

**Exceptions to the law of demand:**

1. **Giffen Goods:** Giffen goods are the inferior goods whose demand increases with the increase in its prices. There are several inferior commodities, much cheaper than the superior substitutes often consumed by the poor households as an essential commodity. Whenever the price of the Giffen goods increases its quantity demanded also increases because, with an increase in the price, and the income remaining the same, the poor people cut the consumption of superior substitute and buy more quantities of Giffen goods to meet their basic needs.

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2. **Veblen Goods:** Another exception to the law of demand is given by the economist Thorstein Veblen, who proposed the concept of “**Conspicuous Consumption.**” According to Veblen, there are a certain group of people who measure the utility of the commodity purely by its price, which means, they think that higher priced goods and services derive more utility than the lesser priced commodities.

3. **Expectation of Price Change in Future:** When the consumer expects that the price of a commodity is likely to further increase in the future, then he will buy more of it despite its increased price in order to escape himself from the pinch of much higher price in the future. On the other hand, if the consumer expects the price of the commodity to further fall in the future, then he will likely postpone his purchase despite less price of the commodity in order to avail the benefits of much lower prices in the future.

4. **Ignorance:** Often people are misconceived as high-priced commodities are better than the low priced commodities and rest their purchase decision on such a notion. They buy those commodities whose price are relatively higher than the substitutes.

5. **Emergencies:** During emergencies such as war, natural calamity- flood, drought, earthquake, etc., the law of demand becomes ineffective. In such situations, people often fear the shortage of the

essentials and hence demand more goods and services even at higher prices.

6. **Change in fashion and Tastes & Preferences:** The change in fashion trend and tastes and preferences of the consumers negates the effect of law of demand. The consumer tends to buy those commodities which are very much 'in' in the market even at higher prices.
7. **Conspicuous Necessities:** There are certain commodities which have become essentials of the modern life. These are the goods which consumer buys irrespective of an increase in the price. For example TV, refrigerator, automobiles, washing machines, air conditioners, etc.
8. **Bandwagon Effect:** This is the most common type of exception to the law of demand wherein the consumer tries to purchase those commodities which are bought by his friends, relatives or neighbors. Here, the person tries to emulate the buying behavior and patterns of the group to which he belongs irrespective of the price of the commodity.

#### **ASSUMPTIONS OF THE LAW OF DEMAND:**

The Law of Demand is based on the following assumptions :

- (1) No change in taste, habits, preferences : It is assumed that there is no change in the taste, habits, preferences of a rational consumer. Thus, consumers' choice of product must remain the same.
- (2) No change in the income level: If the consumer's income rises, he will demand more though the prices of commodities rise. In such a situation, the law will not hold good.
- (3) No change in population : The law is based on the assumption that there should be no change in population, size, sex ratio, age composition, etc.

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- (4) No change in prices of related goods : The law assumes that the prices of close substitutes and the complementary products should remain constant.
- (5) No expectation of future change in the price: If the consumers expect high rise in the price in future, they demand more though current price is high. In such condition, the Law of Demand cannot be verified.
- (6) No change in taxation : It is assumed that the structure of direct and indirect taxes remain constant. Thus, the disposable income of a consumer should remain the same.
- (7) No introduction of new product: It is assumed that there is no introduction of a new product in the market. Thus, the consumer's taste, habits and preferences remain constant.
- (8) No change in technology : The law assumes that the present technology of production remains constant.

#### **Elasticity of Demand:**



- ▶ Elasticity is a measure of a variable's sensitivity to a change in other variables—[or a single variable](#). Most commonly this sensitivity is the change in quantity demanded relative to changes in other factors, such as price.
- ▶ Elasticity is defined as a ratio of the percentage change in the dependent variable to the percentage change in the independent variable

### 1. Price Elasticity of Demand:

**Price Elasticity of Demand:** The price elasticity of demand, commonly known as the elasticity of demand refers to the responsiveness and sensitiveness of demand for a product to the changes in its price.

The response of the consumers to a change in the price of a commodity is measured by the price elasticity of the commodity demand.



**Elasticity of Demand Formula** =  $\frac{\text{Percentage Change in Demand}}{\text{Percentage Change in Price}}$

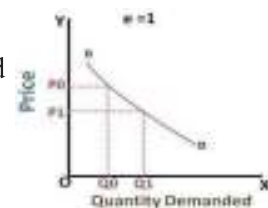



#### Types of price Elasticity of Demand

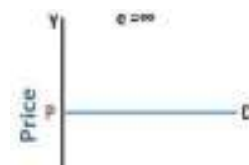
The following are the main types of price elasticity of demand:

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1. **Perfectly Elastic Demand ( $E_p = \infty$ ):** The demand is said to be perfectly elastic when a slight change in the price of a commodity causes a major change in its quantity demanded. Such as, even a small rise in the price of a commodity can result into fall in demand even to zero. Whereas a little fall in the price can result in the increase in demand to infinity. In perfectly elastic demand the demand curve is a **straight horizontal line** which shows, the flatter the demand curve the higher is the elasticity of demand.

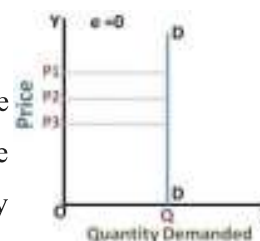


2. **Perfectly Inelastic Demand ( $E_p = 0$ ):** When there is no change in the demand for a product due to the change in the price, then the demand is said to be perfectly inelastic. Here, the demand curve is a **straight vertical line** which shows that the demand remains

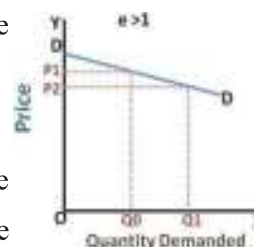


unchanged irrespective of change in the price., i.e. quantity OQ remains unchanged at different prices,  $P_1$ ,  $P_2$ , and  $P_3$ .

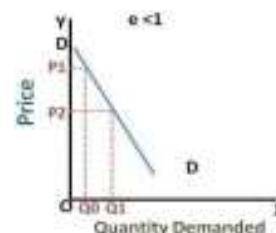
3. **Relatively Elastic Demand ( $1$  to  $\infty$ ):** The demand is relatively elastic when the proportionate change in the demand for a commodity is greater than the proportionate change in its price. Here, the demand curve is **gradually sloping** which shows that a proportionate change in quantity from  $OQ_0$  to  $OQ_1$  is greater than the proportionate change in the price from  $OP_1$  to  $OP_2$ .



4. **Relatively Inelastic Demand ( $0-1$ ):** When the proportionate change in the demand for a product is less than the proportionate change in the price, the demand is said to be relatively inelastic demand. It is also called as the elasticity less than unity, i.e. 1. Here the demand curve is **rapidly sloping**, which shows that the change in the quantity from  $OQ_0$  to  $OQ_1$  is relatively smaller than the change in the price from  $OP_1$  to  $OP_2$ .



5. **Unitary Elastic Demand ( $E_p = 1$ ):** The demand is unitary elastic when the proportionate change in the price of a product results in the same change in the quantity demanded. Here the shape of the demand curve is a **rectangular hyperbola**, which shows that area under the curve is equal to one.



## FACTORS AFFECTING PRICE ELASTICITY OF DEMAND

The Factors affecting Price Elasticity of Demand are as follows:

### 1. Nature Of Commodity

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Nature of the commodity is the most important factor that affects the price elasticity of demand. There are three types of commodities: Necessaries, Comforts and luxuries. Necessaries are those goods which are mandatory for survival of human being. Comforts are those which make our life smooth and happy living. Luxuries are the goods considered as status symbol. The price elasticity of demand of these three kinds of goods is:

NATURE OF GOODS	PRICE ELASTICITY OF DEMAND
Necessaries	Less elastic

Comforts	Unitary elastic
Luxuries	Highly elastic

## 2. Availability Of Substitutes

Substitutes are those which can be used in place of one another. Example: Tea and Coffee, Pepsi and Coke etc. The price elasticity in case of availability of substitutes is:

Easy Availability of Substitutes	Highly Elastic Demand
Less Substitutes Available	Less Elastic Demand

## 3. Alternative Or Multiple Uses

There are some commodities which can be used alternatively or these commodities have multiple uses like milk, coal etc. The demand for these goods rises as the price falls and vice versa. The price elasticity of demand in this case is as follows:

Goods having Multiple uses	Highly Elastic Demand
Goods having Single use	Less Elastic Demand

## 4. Time Period

In Economics, the time is divided into two horizons: Short Period and Long Period. The elasticity of demand is also get affected by the duration of time.

Long time period	Highly elastic demand
Short time period	Less elastic demand

## 5. Income Of Consumer

Elasticity of demand for a commodity also depends upon the income level of the consumers. If the buyers are high end consumers i.e. rich, they will not care for the price. Accordingly, elasticity of demand is expected to be low. Example: Demand for cars by multi-billionaires. On the other hand, if income level of the buyers is low, elasticity of demand is expected to be high. Example:

## 6. Level Of Price

Elasticity of demand also depends upon the level of price of the commodity. The commodities having the highest or lowest price carry less elasticity of demand. On the contrary, the commodities with medium ranged price have highly elastic demand.

High price	Less elastic demand
Medium price	Highly elastic demand
Low price	Less elastic demand

## 7. Standard Of Living

The society where the standard of living of the people is high, the elasticity of demand is low and where the standard of living is low, the elasticity of demand is high.

## 8. Postponement Of Use Of Commodity

The commodities whose demand can be postponed in near future have more elastic demand. Example: Demand for luxury furniture or car etc. Whereas for those goods whose demand cannot be postponed have less elastic or inelastic demand. Example: Demand for food.

## 9. Habits Of Consumer

Commodities which have become habits of consumer have inelastic demand because demand does not get affected by change in price.

## 10. Proportion Of Income Spent On A Commodity

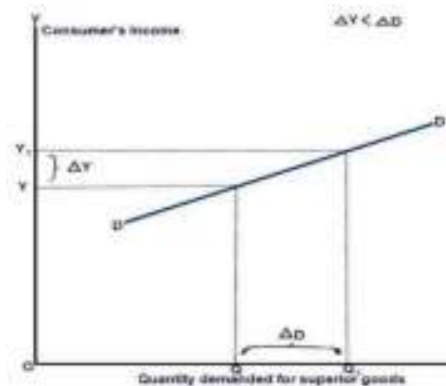
Goods on which consumer spend a small proportion of their income like toothpaste, newspaper etc. will have an inelastic demand. On the other hand, goods on which the consumers spend a large proportion of their income like clothes, scooter etc. tends to have elastic demand.

## INCOME ELASTICITY OF DEMAND:

It measures the responsiveness of demand after a change in income level of individuals. Income elasticity of demand refers to the sensitivity of the quantity demanded for a certain good to a change in real income of consumers who buy this good, keeping all other things constant

“It is the ratio of percentage change in quantity demanded over the percentage change in income level of individuals”.

$$\text{Income Elasticity of Demand} = \frac{\text{Percentage Change in Quantity Demand } (\Delta D/D)}{\text{Percentage Change in Income } (\Delta I/I)}$$



In the given figure, quantity demanded and consumer's income is measured along X-axis and Y axis respectively. The small rise in income from OY to OY1 has caused greater rise in the quantity demanded from OQ to OQ1 and vice versa. Thus, the demand curve, DD shows income elasticity greater than unity.

### CROSS ELASTICITY OF DEMAND:

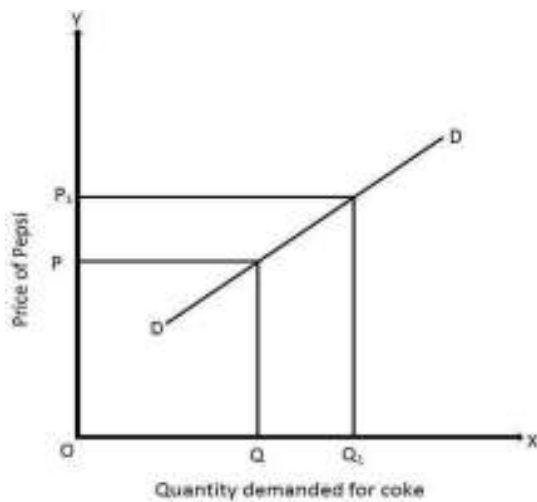
It measures the responsiveness of demand of one product, after a change in price level of other product. “It is the ratio of percentage change in quantity demanded of any one product (X) over the percentage change in price level of other product (Y)”.

The cross elasticity of demand for substitute goods and complimentary goods is always positive because the demand for one good increases when the price for the substitute goods and complimentary goods increases.

For example: if there is an increase in the price of tea by 10%. and the quantity demanded for coffee increases by 2%, then the cross elasticity of demand =  $2/10 = +0.2$ .

If two commodities are unrelated goods, the increase in the price of one good does not result in any change in the demand for the other goods.

$$\text{Cross Elasticity of Demand} = \frac{\% \text{ increase in quantity demanded of product A}}{\% \text{ increase in price of product B}}$$



In the above figure, quantity demanded for Coke and price of Pepsi are measured along X- axis and Y-axis respectively. When the price of Pepsi increases from OP to OP1, quantity demanded for coke rises from OQ to OQ1 and vice versa. Thus, the demand curve DD shows positive cross elasticity of demand.

### ADVERTISING AND PROMOTIONAL ELASTICITY OF DEMAND:

In the modern competitive or partial competitive market economy, advertising has a great significance. Under advertising, various visible or verbal activities are done by the firm for the purpose of creating or increasing demand for its goods or services. Informative advertising is very helpful for the consumer in making rational purchase decisions.

“It is a ratio of percentage change in quantity demanded of any goods and services over the percentage change in expenses incurred for advertising and promotion”.

Following is the formula for advertising elasticity.  $EA = \text{Percentage } \Delta Q / \text{Percentage } \Delta A$

$$\text{Cross Elasticity of Demand} = \frac{\% \text{ increase in quantity demanded}}{\% \text{ increase in advertisement expenses}}$$

The extension of demand through advertising can be measured by advertising or promotional elasticity of demand (EA) which measures the expected changes in demand as a result of change in other promotional expenses. The demand for some goods is affected more by advertising.

- Advertising elasticity of demand (AED) measures the impact advertising expenditure has in



generating new sales for a company.

- Companies want a positive AED because this indicates their advertising efforts are resulting in an increased demand for their goods and services.
- AED may not be the most accurate predictor of advertising's impact on sales because it does not take into account other factors that affect demand, such as changes in consumer tastes and spending habits.

Consumer demand can also be impacted by the price of products and the availability of lower-priced substitutes.

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### **USES OF ELASTICITY OF DEMAND FOR MANAGERIAL DECISION MAKING:**

- **Determination of Price policy:** Determination of Prices means to determine the cost of goods sold and services rendered in the free market. A manufacturer has to consider the elasticity of demand for the product.
- **Price discrimination:** it is an act of selling same products at different prices to different section of customers or in different sub-markets. A monopolist adopts a price discrimination policy only when the elasticity of demand of different consumers or sub-markets is different. Consumers whose demand is inelastic can be charged a higher price than those with more elastic demand.
- **Public utility pricing:** In case of public utilities which are run as monopoly undertakings e.g. elasticity of water supply, railways, postal services, price discrimination is generally practiced, charging higher prices from consumers or users with inelastic demand and lower prices in case of elastic demand.
- **Shifting of tax burden:** It is possible for a business to shift a commodity tax in case of inelastic demand to his customers. But if the demand is elastic, he will have to bear the tax burden himself, otherwise demand for his goods will go down sharply.
- **Pricing of Joint supply products:** Certain goods, being products of the same process are jointly supplied, e.g. wool and mutton. Here if the demand for wool is inelastic compared to the demand for mutton, a higher price for wool can be charged with advantage.
- **Super Markets:** Super-markets are a combined set of shops run by a single organization selling a wide range of goods. They are supposed to sell commodities at lower prices than charged by

shopkeepers in the bazaar. Hence, price policy adopted is to charge slightly lower price for goods with elastic demand.

- **Use of machines on employment:** Workers often oppose use of machines out of fear of unemployment. Machines need not always reduce demand for labor as this depends on price elasticity of demand for the commodity produced. When machines reduce costs and hence price of products, if the products demand is elastic, the demand will go up, production will have to be increased and more workers may be employed for the product

is inelastic, machines will lead to unemployment as lower prices will not increase the demand.

- **Factor pricing:** The factors having price inelastic demand can obtain a higher price than those with elastic demand. Workers producing products having inelastic demand can easily get their

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wages raised.

- **Taxation policy:** Government can easily raise tax revenue by taxing commodities which are price inelastic.

### **DEMAND FORECASTING:**

A forecast is a prediction or estimation of a future situation, under given conditions. Demand forecasting is a technique that is used for the estimation of what can be the demand for the upcoming product or services in the future.

Demand forecasting is a field of predictive analytics which tries to understand and predict customer demand to optimize supply decisions by corporate supply chain and business management. Demand estimation and forecasting means when, how, where, by whom and how much will be the demand for a product or service in near future. The process of demand estimation/forecasting can be broken into two parts i.e. analysis of the past conditions and analysis of current conditions with reference to a probable future trend. It helps in estimating the most likely demand of a good or service under given business conditions.

### **Significance of demand forecasting is shown in the following points**

#### **i. Fulfilling objectives:**

- ▶ Implies that every business unit starts with certain pre-decided objectives. Demand forecasting helps in fulfilling these objectives. An organization estimates the current demand for its products and services in the market and move forward to achieve the set goals.
- ▶ For example, an organization has set a target of selling 50, 000 units of its products. In such a case, the organization would perform demand forecasting for its products. If the demand for the organization's products is low, the organization would take corrective actions, so that the set objective can be achieved.

**ii. Preparing the budget:**

Plays a crucial role in making budget by estimating costs and expected revenues. For instance, an organization has forecasted that the demand for its product, which is priced at Rs. 10, would be 10,00,00 units. In such a case, the total expected revenue would be  $10 \times 100000 = \text{Rs. } 10,00,000$ . In this way, demand forecasting enables organizations to prepare their budget.

**iii. Stabilizing employment and production:**

Helps an organization to control its production and recruitment activities. Producing according to the forecasted demand of products helps in avoiding the wastage of the resources of an organization. This further helps an organization to hire human resource according to requirement. For example, if an organization expects a rise in the demand for its products, it may opt for extra labor to fulfill the increased demand.

**iv. Expanding organizations:**

Implies that demand forecasting helps in deciding about the expansion of the business of the organization. If the expected demand for products is higher, then the organization may plan to expand further. On the other hand, if the demand for products is expected to fall, the organization may cut down the investment in the business.

**v. Taking Management Decisions:**

Helps in making critical decisions, such as deciding the plant capacity, determining the requirement

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of raw material, and ensuring the availability of labor and capital.

**vi. Evaluating Performance:**

Helps in making corrections. For example, if the demand for an organization's products is less, it may take corrective actions and improve the level of demand by enhancing the quality of its products or spending more on advertisements.

**vii. Helping Government:**

Enables the government to coordinate import and export activities and plan international

trade. **Methods of demand forecasting:**

**1. Opinion Polling Method/Qualitative methods**

In this method, the opinion of the buyers, sales force and experts could be gathered to determine the emerging trend in the market.

**The opinion polling methods of demand forecasting are of three kinds:**

**(a) Consumer's Survey Method or Survey of Buyer's Intentions:**

In this method, the consumers are directly approached to disclose their future purchase plans. This is done by interviewing all consumers or a selected group of consumers out of the relevant population. This is the direct method of estimating demand in the short run.

**(i) Complete Enumeration Survey:**

Under the Complete Enumeration Survey, the firm has to go for a door to door survey for the forecast period by contacting all the households in the area. This method has an advantage of first hand, unbiased information, yet it has its share of disadvantages also. The major limitation of this method is that it requires lot of resources, manpower and time.

**(ii) Sample Survey and Test Marketing:**

Under this method some representative households are selected on random basis as samples and their opinion is taken as the generalised opinion. This method is based on the basic assumption that the sample truly represents the population. If the sample is the true representative, there is likely to be no significant difference in the results obtained by the survey. Apart from that, this method is less tedious and less costly.

A variant of sample survey technique is test marketing. Product testing essentially involves placing the product with a number of users for a set period. Their reactions to the product are noted after a period of time and an estimate of likely demand is made from the result.

**(iii) End Use Method or Input-Output Method:**

This method is quite useful for industries which are mainly producers goods. In this method, the sale of the product under consideration is projected as the basis of demand survey of the industries using this product as and intermediate product, that is, the demand for the final product is the end use demand of the intermediate product used in the production of this final product.

**(b) Sales Force Opinion Method:**

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This is also known as collective opinion method. In this method, instead of consumers, the opinion of the salesmen is sought. Sales person in the company to make an individual forecast for his or her particular sales territory. These individual forecasts are discussed and agreed with the sales manager. The composite of all forecasts then constitutes the sales forecast for the organisation.

**(c) Experts Opinion Method:**

This method is also known as “Delphi Technique” of investigation. The Delphi method requires a panel of experts, who are interrogated through a sequence of questionnaires in which the responses to one questionnaire are used to produce the next questionnaire. Thus any information available to some experts and not to others is passed on, enabling all the experts to have access to all the information for forecasting.

**2. Statistical Method/ Quantitative methods**

Statistical methods have proved to be immensely useful in demand forecasting. In order to maintain objectivity, that is, by consideration of all implications and viewing the problem from an external point of view, the statistical methods are used.

**(i) Trend Projection Method:**

A firm existing for a long time will have its own data regarding sales for past years. Such data when arranged chronologically yield what is referred to as ‘time series’. Time series shows the past sales with effective demand for a particular product under normal conditions. Such data can be given in a tabular or graphic form for further analysis. This is the most popular method among business firms, partly because it is simple and inexpensive and partly because time series data often exhibit a persistent growth trend.

**The trend can be estimated by using any one of the following methods:**

**a) Graphical Method:**

This is the most simple technique to determine the trend. All values of output or sale for different years are plotted on a graph and a smooth free hand curve is drawn passing through as many points as possible. The direction of this free hand curve—upward or downward— shows the trend.

**(b) Least Square Method:**

Under the least square method, a trend line can be fitted to the time series data with the help of statistical techniques such as least square regression. When the trend in sales over time is given by straight line, the equation of this line is of the form:  $y = a + bx$ .

**(ii) Barometric Technique:**

This method is based on the notion that “the future can be predicted from certain happenings in the present.” In other words, barometric techniques are based on the idea that certain events of the present can be used to predict the directions of change in the future. This is accomplished by the use of economic and statistical indicators which serve as barometers of economic change.

**(iii) Regression Analysis:**

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It attempts to assess the relationship between at least two variables (one or more independent and one dependent), the purpose being to predict the value of the dependent variable from the specific value of the independent variable.

The basis of this prediction generally is historical data. This method starts from the assumption that a basic relationship exists between two variables. An interactive statistical analysis computer package is used to formulate the mathematical relationship which exists.

**(iv) Econometric Models:**

Econometric models are an extension of the regression technique whereby a system of independent regression equation is solved. The requirements for satisfactory use of the econometric model in

forecasting is under three heads: variables, equations and data.

The appropriate procedure in forecasting by econometric methods is model building. Econometrics attempts to express economic theories in mathematical terms in such a way that they can be verified by statistical methods and to measure the impact of one economic variable upon another so as to be able to predict future events.

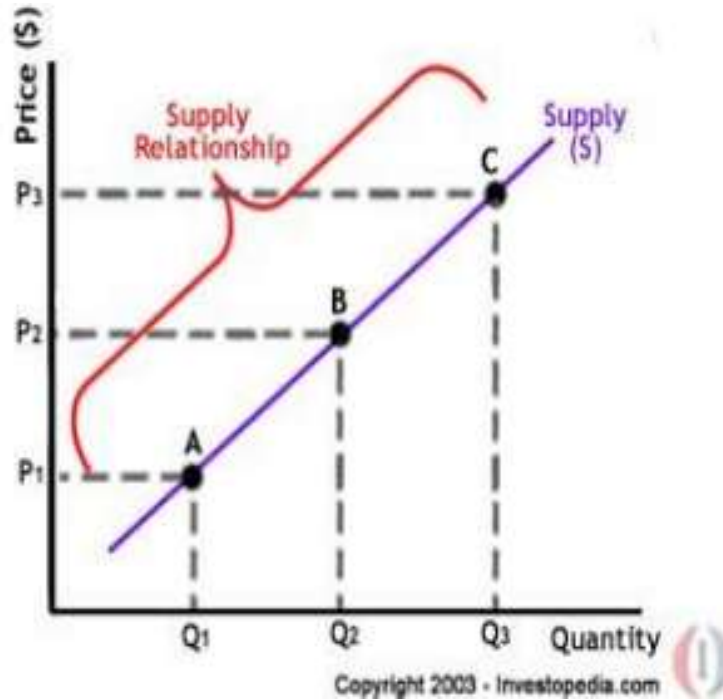
## **LAW OF SUPPLY**

The law of supply is the microeconomic law that states that, all other factors being equal, as the price of a good or service increases, the quantity of goods or services that suppliers offer will increase, and vice versa.

The law of supply says that as the price of an item goes up, suppliers will attempt to maximize their profits by increasing the number of items for sale.







- An economic law stating that as the price of a good or service increases, the quantity supplied increases, and vice versa .
- The law of supply says that a higher price will induce producers to supply a higher quantity to the market.
- Because businesses seek to increase revenue, when they expect to receive a higher price for something, they will produce more of it.
- When college students learn that computer engineering jobs pay more than English professor jobs, the supply of students with majors in computer engineering will increase

#### **FACTORS AFFECTING SUPPLY:**

There are many factors affecting the supply of a commodity in the market including 1. Input costs,

2. Price of the commodity,

3. The state of technology at a given time, taxation,

4. Prices of other goods,

5. Objective of the seller,

6. Number of firms selling the same commodity among others.

**EXCEPTIONS TO THE LAW OF SUPPLY:**

◆◆ The law will not apply **if there are future expectations for further** change in prices. ◆◆ If **sellers expect further fall in prices** in future, they would be ready to sell more even at low prices.

◆◆ For **perishable goods like milk, vegetables, fish, eggs, etc. the supply is not affected by their prices**. Sellers cannot hold these goods for long.

Even for **agricultural goods, the supply depends more on natural factors** such as drought, floods, natural calamities etc. and less on their prices.



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