

TOPIC 2: PRICE THEORY

INTRODUCTION TO PRICE ANALYSIS.

Price theory: this is economic theory that studies the effects of prices on the behavior of consumers, producers and resource owners.

Therefore, it explains the production, allocation, consumption and pricing of goods in the market

Price refers to the exchange value of a commodity in money terms

OR

It is the relative value in money terms of a product in a given period of time

OR

The amount of money that one has to give UP in order to obtain a good or service.

In lay man's language, Price is the amount the buyer pays for a commodity.

THE CONCEPT OF MARKET

A market can be defined as a situation where buyers and sellers negotiate for the exchange of a defined good OR

Refers to the interaction between sellers and buyers where negotiation for exchange of a commodity is made.

It's a set of arrangement through which a particular good is produced and exchanged.

Features of a market

- There should be buyers
- There should be sellers
- There should be a commodity i.e. a good or service
- There should be medium of exchange i.e. monetary or barter system
- There should defined/clear terms of sale i.e. spot or instalment payment

Types of markets

1. **Factor and product / commodity market.** A factor market is one where factors of production are traded while a product market is where final goods and services are traded.
2. **Free and controlled markets.** A free market is one where there is no government control over the market activities. The consumers and the producers have freedom of choice and enterprise respectively.

A controlled market is one where the government exerts a high degree of control over the market activities e.g. price legislation, setting of quarters, taxation etc.
3. **A forward market and a spot market.** A forward (future) market is one where negotiations are made and transactions carried out at a later time.

A spot market is one where negotiations are made and the product is traded there and then.
4. **Hyper market:** This is one where very large products are traded e.g. trains, aero planes and jets.
5. **Black market:** This is where products are traded at a price that is against the government legislated price.
6. **Money market:** This is one where short term financial assets are traded.eg. Treasury bills.
7. **Stock exchange market:** This is a market where already issued shares and stocks traded.

TYPES OF PRICES

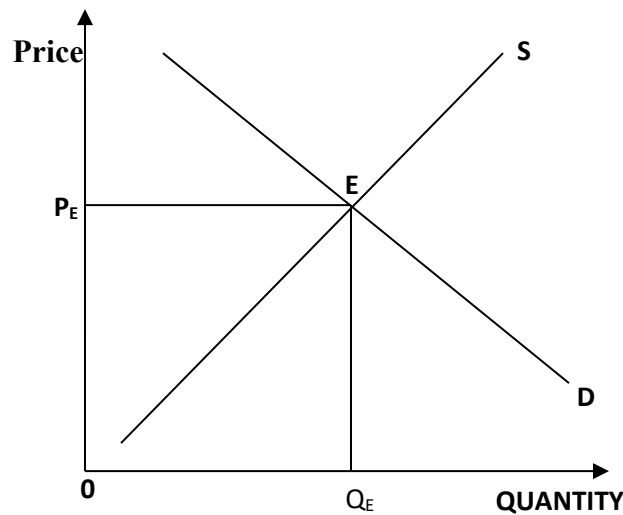
Prices can be classified as; market price, equilibrium price, normal price or reserve price.

Market price. Is defined as the ruling / prevailing price in the market for a short period of time

Equilibrium price. This is the price that prevails in the market when quantity supplied is equal to quantity demanded.

This price clears the market of its supply and demand. It's also called the **market clearing price.**

Illustration of equilibrium price



P_E –Equilibrium Price

Q_E –Equilibrium Quantity

S - Supply

D – Demand

Normal price. It is long run equilibrium price that persists in the market when supply and demand conditions are stable. (It's the equilibrium price that stays in the market in the long run)

It is the price obtained when quantity demanded is equal to quantity supplied in the long run period.

Reserve price. It is the least possible acceptable price to the seller of a particular product or the price below which a seller cannot accept to sell his or her product.

OR

Is the least/ minimum/ lowest price a producer/ seller is willing to accept in exchange of his/ her commodity below which he/ she retains the commodity.

DETERMINANTS OF RESERVE PRICE

1. Expected future demand for a commodity.

A producer who expects demand for his commodities to increase in the nearby future sets a high reserve price to retain many goods for sell in the future when demand increases while a producer who expects demand for his commodities to fall in the nearby future sets a low reserve price currently so as to sell off the commodity very fast before demand falls.

2. Expected future price of the commodity.

A Seller who expects the future price of the commodity to increase sets a high reserve price so as to retain many goods for sell at a higher price in the future. However, sellers expecting reductions in future prices set low reserve prices such that they sell more currently and avoid the lower prices in the Future.

3. Nature of the commodity (perishable goods vs durable goods)

A Seller dealing in durable goods sets a high reserve price because his goods are long lasting and can remain in good condition even when not bought urgently. However, a seller who deals in perishable goods sets a low reserve price to sell off the goods before they go bad.

4. Degree of necessity of the commodity.

Sellers dealing in commodities with a high degree of necessity set high reserve prices because they know that consumers cannot do without them. However, sellers dealing in commodities with a low degree of necessity set low reserve prices because they know that consumers can do without them.

5. Size of transport (carriage) and storage charges.

High storage and transport charges lead to a low reserve price because the seller wishes to sell off the commodity very fast before incurring more of these charges. However, low transport and storage charges lead to a high reserve price because the seller is not scared of transporting or storing goods for a long period of time.

6. The length of the gestation period

A Long gestation period leads to a high reserve price because the producer is aware of the inconveniences he/ she is going to go through to produce the next commodities. However, a short gestation period implies that the seller needs less time to produce the commodity and therefore he sets a low reserve price.

7. Level of liquidity preference of the producer/seller.

Sellers with urgent need for cash (high liquidity preference) set low reserve prices to ensure that they actually sell the goods for the money they need. However, sellers with no urgent need for cash (low liquidity preference) set high reserve prices.

NB: liquidity preference is the desire of an individual to hold wealth in cash or near cash form.

8. The cost of production.

Producers who incur high costs of production set high reserve prices because it is expensive for them to replace the sold goods. However, producers who incur low costs of production set low reserve prices because it is cheap for them to replace the sold goods.

METHODS OF PRICE DETERMINATION IN THE MARKET (HOW PRICES ARE DETERMINED)

Price determination refers to the process through which the price of a good or service is fixed in the market. Prices may be determined in different ways depending on the nature of the market, type of commodity, level of competition, and government involvement.

1. Through Bargaining / haggling
2. Through Auctioning / bidding
3. Through Signing treaties / agreements / collusion
4. Through the interaction Forces of demand and supply
5. Through Government price legislation
6. Through Price leadership
7. Through Independent pricing
8. Through Resale price maintenance
9. Through Offers at fixed price

1. Bargaining

This is a method where the buyer and seller negotiate until they agree on a price acceptable to both parties. The seller usually begins with a high price while the buyer offers a lower one, and discussion continues until a final price is reached.

This method is common in open markets, second-hand goods markets, and informal sectors where prices are not fixed.

Examples:

- Buying clothes in Owino Market
- Purchasing goats in village markets

- Buying used phones

Advantages

1. It enables consumers to retain some balance if they bargain and buy the product at a lower price.
2. It enables the seller to get more profit if he has strong bargaining power.
3. It enables consumers to practice their bargaining skills.

Disadvantages

1. Consumers may be cheated if they have low bargaining power
2. Some sellers may get very low profits if they have low bargaining power.
3. It is time consuming before the agreed price is reached
4. Tiring

2. Signing treaties / collusion

Under this method, producers or sellers agree among themselves to charge a common price. This is common in oligopolistic markets where few firms dominate.

The firms may sign formal agreements or secretly collude to avoid price wars and maximize profits.

Examples:

- Oil producing countries through OPEC agreeing on output levels
- Transport operators agreeing on fares
- Schools agreeing on uniform prices

Advantages

1. The price agreed upon is always fair for both producers and consumers.
2. It reduces competition between producers
3. Producers are able to plan properly since they are assured of stable income

4. Prices tend to be stable for a long period of time

Disadvantages

1. It is difficult and expensive to implement
2. It is difficult to anticipate change in the market
3. It does not consider differences in the production costs

3. Auctioning / bidding

This is where there are many intending buyers and one seller and the product is brought by the highest bidder (the one offering the highest price). The intending buyers compete for the commodity and this is called bidding.

Under this method, the seller has a reserve price. This method is common for rare goods, government property sales, art pieces, livestock, and treasury bills.

Examples:

- Sale of impounded vehicles
- Coffee auctions
- Land sales through bidding

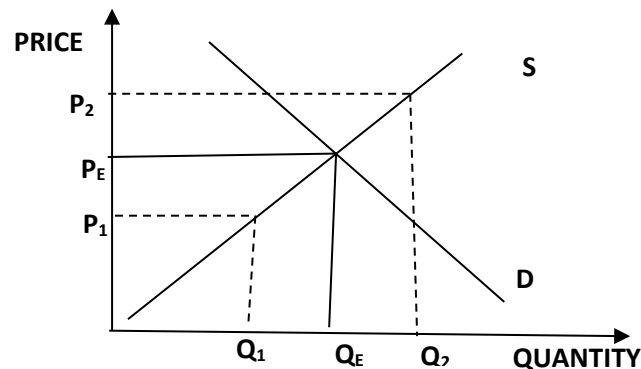
Advantages

1. Since the product is taken by the highest bidder, it enables the seller to get revenue and profit.
2. It enables some consumers to buy the product at a very low price especially where there is limited competition.
3. It gives consumers a chance to determine the price of a given product since they compete among themselves.
4. Poor consumers are not given a chance to buy the product even if they would have liked to have it.

4. Forces of demand and supply

This occurs in a free market economy where there is free interaction of market forces of demand and supply to determine the prices of the product. Price changes according to supply and demand conditions, where demand is more than the supply, price increases and when demand is less than supply, price reduce

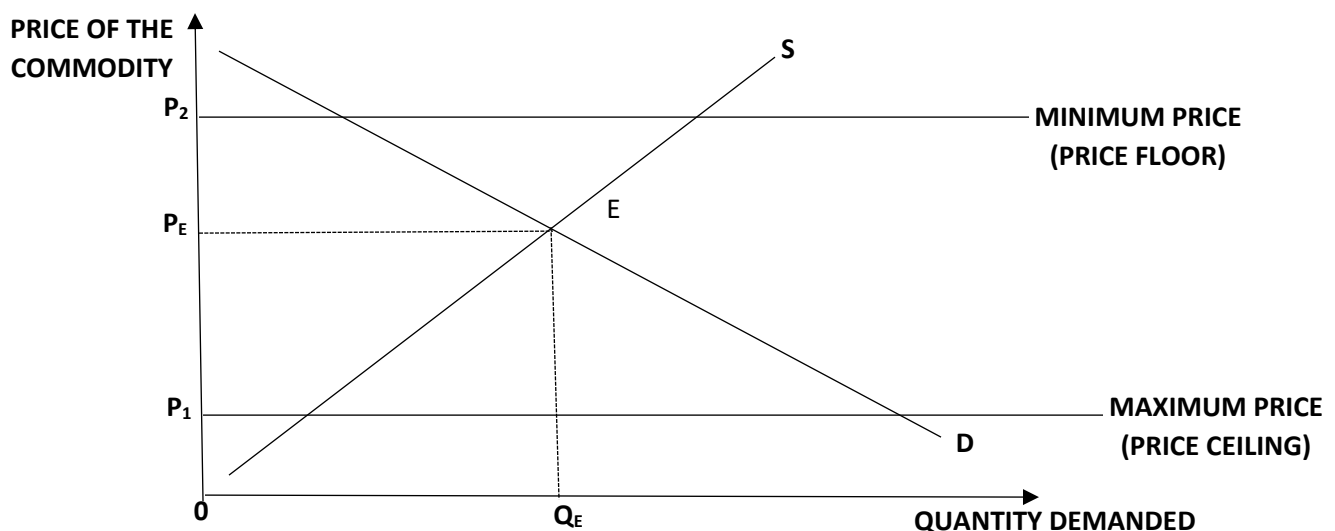
Illustration



NB : we need to understand the effects of changes in the forces of demand and supply on the price of the commodity in the market(**consider situations like when demand increases but supply remains constant, what happens, how about when supply increases at a constant demand?, what of when both increases at the same time.**)

5. **Government price legislation.** This is where the government fixes or sets prices for a particular product above or below the equilibrium and it is illegal to sell the product at a different price. This is by setting a maximum price to protect consumers or a minimum price to protect the producer.

Illustration



Price control or legislation takes two major forms namely;

Maximum price legislation. is the fixing or setting of prices of the commodities by the government below the equilibrium price above which it becomes illegal to sell the commodity and the major aim is to protect consumers.

It's at times called the **price ceiling legislation.**

Price ceiling refers to the price set by the government below the equilibrium price to protect consumers above which it becomes illegal to sell the commodity to the consumer.

Reasons for price ceiling.

1. To control monopoly power.
2. To protect consumers against exploitation by producers.
3. To discourage production of demerit or undesirable goods.
4. To ensure that essential goods are made available to all income groups in the economy.
5. To maintain price stability thus controlling inflation.
6. To discourage production of demerit goods since the maximum price makes them less profitable.

Minimum price legislation. Refers to the setting of the price above the equilibrium price in order to protect producers below which it becomes illegal for the consumer to pay the commodity from the producer.

It's also known as **price floor legislation.**

Price floor refers to the price set above the equilibrium price to protect producers below which it becomes illegal for the consumer to buy the commodity from the producer.

Reasons for minimum price legislation.

1. To stabilize producers incomes such as farmers incomes because it protects them against continuous fluctuations in the market.
2. To protect producers from being exploited by large scale buyers.

3. To encourage continuous production.
4. To pull the economy out of the depression or recession.
5. To discourage consumption of undesirable products because they become expensive to consumers.
6. To reduce income inequality between workers and producers.
7. To ensure industrial peace / minimize industrial unrests by fixing a minimum wage to ensure that workers get stable wages.

NB: the reasons for price legislation can be drawn from the above.

IMPACT OF PRICE CONTROLS IN DEVELOPING COUNTRIES.

Positive Effects / Impacts

1. Consumers are protected from exploitation by producers.

When the government fixes a maximum price on essential commodities such as sugar, maize flour, medicine, and fuel, producers and traders are prevented from charging excessively high prices. This protects low-income consumers from being exploited, especially during shortages or emergencies when sellers may want to maximize profits unfairly.

2. Monopoly power is checked and hence controlled through a maximum price.

In many developing countries, some industries are dominated by a few large firms or monopolies. Such firms may charge very high prices because of limited competition. Government price ceilings help to control this monopoly power by restricting firms from overcharging consumers.

3. It ensures stability in prices and hence controlling inflation.

Price controls can reduce frequent price increases of basic commodities. When government fixes prices of key goods and services, sudden rises in the cost of living are minimized. This helps to control inflation and creates a more stable economic environment for households and businesses.

4. Encourages large scale production especially the minimum price.

When producers are guaranteed a minimum price for their products, they gain confidence that their goods will earn reasonable income. This encourages farmers and manufacturers to increase output and invest more resources into production, leading to large scale production.

5. Commodities are made available to all the income groups in the economy through the maximum price since it makes them affordable.

A maximum price lowers the selling price of essential goods, making them affordable even to poor households. This promotes fairness because both low-income and high-income earners can access necessities such as food, transport, and medicine.

6. Maintains industrial peace especially when the minimum wage is put in place.

When government sets a minimum wage, workers are assured of a basic level of income. This reduces complaints about low wages and can minimize strikes, demonstrations, and labour unrest. Good relations between employers and employees help maintain peace in industries.

7. Producers are protected from exploitation by large scale buyers through the minimum price.

Small producers, especially farmers, are sometimes exploited by middlemen or large buyers who offer very low prices. Government minimum prices ensure that producers receive a fair reward for their products and are not forced to sell at losses.

8. Producers realize stable incomes.

Minimum prices guarantee a certain level of earnings to producers regardless of market fluctuations. This gives farmers and manufacturers predictable incomes, enabling them to plan production, meet family needs, and reinvest in their businesses.

9. Reduces income inequality among workers since the minimum wage ensures at least same wages earned by workers.

A minimum wage sets a basic income level below which workers should not be paid. This reduces extreme wage differences between low-paid and better-paid workers, helping narrow income inequality and improve living standards of poor workers.

10. Discourages production of undesirable commodities through the maximum price.

When government fixes a low maximum price on harmful or socially undesirable goods, producers may earn less profit from producing them. As a result, they may reduce production of such commodities, for example certain luxury or harmful items.

11. Discourages consumption of undesirable commodities since the minimum price makes them expensive.

If government sets a high minimum price on undesirable goods such as alcohol or tobacco, their prices rise. High prices discourage consumers from buying them, helping reduce harmful consumption habits in society.

Negative Impacts / Effects

1. Encourages excess capacity or underutilization of the available resources due to maximum price set.

When prices are fixed too low, producers may reduce production because profits fall. Machines, land, labour, and factories may remain idle or underused since firms are unwilling to produce more at low controlled prices.

2. Leads to unmanageable surplus and hence storage problems emerge as a result of minimum price.

A minimum price encourages producers to supply more goods while consumers may demand less because prices are high. This creates excess supply or surplus. Unsold goods require storage facilities, and government may incur costs storing or buying the surplus.

3. Leads to increased cost of production especially when the minimum wage is set.

When government imposes a minimum wage, firms must pay workers higher wages. Labour is a major cost of production, so production costs rise. Small firms may find it difficult to meet these higher wage bills.

4. Leads to high cost of living hence reduced welfare due to the minimum price being high.

Minimum prices increase the selling price of goods above equilibrium level. Consumers pay more for commodities, reducing their purchasing power. This raises the cost of living and lowers consumer welfare, especially among the poor.

5. Reduces invention and innovation among producers and this retards economic growth.

Price controls limit the profits producers can earn. When profits are restricted, firms may lose motivation to invest in research, improved technology, and new production methods. This slows innovation and may retard economic growth.

6. Leads to unemployment due to reduced investment as a result of maximum price.

If maximum prices make business less profitable, investors may reduce production or close firms. This lowers demand for labour and causes unemployment, particularly in sectors affected by price ceilings.

7. Creates shortages in the market since the maximum price discourages large scale production.

When prices are fixed below market equilibrium, demand rises because goods are cheaper while supply falls because producers earn less profit. This causes shortages, queues, and rationing of commodities in the market.

8. Encourages trade malpractice e.g. smuggling, hoarding with their associated disadvantages.

Price controls may create opportunities for illegal activities. Traders may hide goods waiting for higher prices, smuggle goods to countries with better prices, or sell secretly on black markets. These practices reduce availability of goods and cause loss of government revenue.

9. Leads to high government expenditure in facilitating officers enforcing the prices.

Government needs inspectors, administrators, transport, and monitoring systems to enforce controlled prices. This requires large public expenditure which could have been used on schools, hospitals, or infrastructure.

10. Distorts the working of price mechanism since interferes with the determination of prices by forces of demand and supply.

Under normal market conditions, prices are determined by demand and supply. Price controls interfere with this natural adjustment process. As a result, markets may fail to allocate resources efficiently, causing shortages, surpluses, and inefficiency.

Conclusion

Although price controls can protect consumers and producers in developing countries, excessive government interference may create shortages, surpluses, unemployment, and black markets. Therefore, price controls should be carefully applied only where necessary.

REASONS FOR AVOIDANCE OF PRICE CONTROLS

Why may Government avoid price controls?

1. Fear of causing trade malpractices such as smuggling, black marketing, etc. Maximum price legislation leads to smuggling of goods to other countries while minimum price legislation leads to smuggling of goods into the country.
2. Fear of raising costs of production which arise out of high costs of raw materials resulting from minimum price legislation.
3. Fear of causing unemployment resulting from maximum price legislation which forces firms to close down as they cannot cover their average costs.
4. To avoid unmanageable surpluses and storage problems in case of a minimum price.
5. To avoid discouraging entrepreneurs through tampering with their profit margins in case of a maximum price.
6. To avoid high administrative costs on these price controls e.g. price support.
7. To avoid unnecessary distortion of the price mechanism which may lead to misallocation of resources.
8. Fear of reducing social welfare of the people due to high cost of living caused by minimum price legislation.
9. To avoid underutilization of resources in case of a maximum price.
10. Fear of causing shortages of goods and services resulting from maximum price legislation which discourages production.

6. Resale price maintenance

This is where manufacturers or producers of a product fix a price for that product at which it should be sold to the final consumers.

OR

It is a system of price determination where the manufacturers of a given product insist on fixing price up to the last stage of distribution e.g. manufacturers of newspapers, magazines, airtime, post office stamps. E.g. AIRTEL, MTN, New Vision, African Woman Publishers, the Independent Publishers.

Advantages of Resale Price Maintenance

1. It creates price stability.

Since the producer fixes a uniform selling price for all retailers, unnecessary price fluctuations are avoided. Consumers find the same product selling at nearly the same price in different shops and areas. This promotes certainty in the market and makes planning easier for both sellers and buyers.

2. Consumers are protected from being over charged since prices are indicated on the product.

Many products under resale price maintenance have marked prices printed on the package. This prevents dishonest retailers from charging consumers excessively high prices, especially where buyers have little market information. Consumers are therefore protected from exploitation.

3. It creates the manufacturers sale and profit, since they determine the prices.

When producers fix prices carefully, they can choose a price that attracts demand while still earning profit. Uniform prices help maintain the image of the product and may increase consumer confidence, leading to more sales and stable profits for manufacturers.

4. It is time saving since there is no bargaining involved.

Consumers do not need to negotiate prices with retailers because the price is already fixed. Buying and selling becomes faster and more convenient, especially in busy supermarkets, pharmacies, and retail shops where many customers are served daily.

5. It reduces competition between large scale and small scale retailers.

Large retailers often have more financial power and may lower prices to drive small retailers out of business. With resale price maintenance, all retailers charge the same price, so small traders are protected from unfair price competition by larger firms.

Disadvantages of Resale Price Maintenance

1. The consumers bargaining skills are minimized.

Because prices are fixed, consumers lose the opportunity to negotiate for lower prices. In markets where bargaining is common, buyers cannot use their negotiation skills to obtain discounts or better deals.

2. Less profits are made by middlemen since prices are fixed by producers.

Retailers and wholesalers may be unable to increase prices even when their operating costs such as transport, rent, or storage rise. Their profit margins become limited because they must sell at the producer's set price, reducing incentives to stock the product.

3. In case the price is high, some consumers are denied consumption of such products.

If the producer sets a high resale price, low-income consumers may fail to afford the product. This limits access to essential goods and reduces consumer welfare, especially in developing countries where incomes are low.

Conclusion

Resale price maintenance helps create order, price stability, and consumer protection, but it may limit competition, reduce retailer profits, and make some goods unaffordable when prices are set too high. Therefore, it should be used carefully depending on market conditions.

7.Independent pricing

Through Independent Pricing each firm sets its own price without consulting rivals. Firms consider their own costs, objectives, and demand conditions.

Common in monopolistic competition.

Examples:

- Salons charging different prices
- Restaurants setting own menu prices
- Private schools charging own fees

Advantages:

- Encourages competition
- Gives firms flexibility
- Consumers can compare prices

Disadvantages:

- Price instability
- Some firms may overcharge

8. PRICE LEADERSHIP

Price leadership is a situation where one dominant, large, or respected firm in an industry takes the lead in fixing the price of a product, and other firms in the same market follow by charging the same or nearly the same price.

It is common in **oligopoly markets**, where there are only a few large firms producing similar goods or services. Since each firm is aware that changing prices may trigger reactions from competitors, many prefer to follow the leading firm instead of setting independent prices.

In simple terms, one firm becomes the **price leader**, while the rest become **price followers**.

How Price Leadership Operates

The leading firm usually studies market conditions such as:

- Cost of production
- Consumer demand

- Competitors' behavior
- Government taxes
- Exchange rate changes
- Inflation levels

After analysis, the dominant firm announces or introduces a new price. Other firms then copy or adjust their prices close to that level to avoid losing customers or starting price wars.

Why a Firm Becomes a Price Leader

A firm may become a price leader because of:

1. Large market share.

A company controlling a large portion of sales can influence the whole market because many consumers buy from it.

2. Strong reputation and brand loyalty.

Consumers trust the firm, so competitors watch its pricing decisions closely.

3. Lower costs of production.

Efficient firms with lower costs can set prices that others struggle to ignore.

4. Better market information.

Large firms often have better knowledge about costs, demand, and trends.

5. Financial strength.

They can survive price changes longer than smaller competitors.

Price Leadership in Uganda's Context

1. Fuel Industry in Uganda.

When one major fuel company such as Shell, TotalEnergies, or another large marketer adjusts pump prices in Kampala due to global oil prices, transport costs, or exchange rate changes, many smaller filling stations often revise their prices soon after. They follow the market leader to remain competitive.

2. Telecommunication Sector.

When a dominant telecom company introduces new data bundles, call rates, or mobile money charges, rival telecom firms may respond by setting similar tariffs or promotional prices.

3. Cement Industry.

If a large cement producer in Uganda changes the price of cement bags due to higher electricity or transport costs, smaller producers and dealers may also adjust their prices.

4. Soft Drinks Market.

If a leading beverage producer changes the price of soda or bottled water, retailers and competing firms may revise their own prices.

5. Banking Sector.

When major commercial banks revise lending interest rates or savings charges, smaller banks may follow similar pricing trends.

Types of Price Leadership

1. Dominant Firm Price Leadership.

A large firm with the biggest market share sets the price, and smaller firms follow.

Example: A leading telecom company setting common market trends.

2. Barometric Price Leadership.

A respected firm with good market knowledge changes price first, and others assume it reflects market conditions.

Example: A major fuel company reacting first to world oil prices.

3. Collusive Price Leadership.

Firms secretly agree to let one firm announce prices on behalf of all.

This is less legal and may harm consumers.

Advantages of Price Leadership

1. Creates price stability.

Prices do not change frequently because firms follow one leader.

2. Avoids price wars.

Competing firms avoid continuously reducing prices against each other.

3. Easy decision making for smaller firms.

Small firms save time and cost of conducting their own pricing research.

4. Predictable market environment.

Consumers and producers can plan better when prices are stable.

5. Encourages orderly competition.

Firms may compete through quality, packaging, or customer care instead of constant price cuts.

Disadvantages of Price Leadership

1. Consumers may pay high prices.

If the leader sets high prices, other firms copy, reducing consumer welfare.

2. Reduces competition.

Firms may become passive and stop competing aggressively.

3. Smaller firms lose independence.

They depend on the dominant firm's decisions.

4. Can lead to exploitation.

If firms follow the leader blindly, prices may remain high even when costs fall.

5. Barrier to new firms.

New entrants may struggle to challenge established leaders.

Why Price Leadership is Common in Developing Countries Like Uganda

- Some industries have few large firms.
- Small firms lack market research capacity.
- Consumers prefer known brands.
- Markets are concentrated in urban centres.
- High costs make firms avoid price wars.

Conclusion

Price leadership is an important method of price determination in Uganda, especially in sectors like fuel, telecom, banking, cement, and beverages. One strong firm influences market prices while others follow. Although it promotes stability and avoids destructive competition, it may reduce competition and keep prices high.

THE ROLE OF PRICE IN AN ECONOMY.

- 1. Price determines the value of the commodity.** Price reflects how much a commodity is worth in the market. Goods that are highly valued by consumers, either because they are scarce or highly demanded, tend to have higher prices. On the other hand, goods that are abundant or less desired have lower prices. Therefore, price acts as a measure of the importance or usefulness of a commodity in satisfying human wants.
- 2. Guides the producer on what to produce.** Producers are motivated by profit. When the price of a commodity is high, it signals that demand is strong and profits are likely to be high. As a result, producers allocate more resources towards producing such goods. Conversely,

goods with low prices are less attractive to produce because they yield lower profits, so producers may reduce or stop their production.

3. Determines income distribution for factors of production. Price also determines how income is shared among the factors of production such as land, labour, capital, and entrepreneurship. Each factor earns a reward (rent, wages, interest, profit) depending on its demand and supply in the market. Factors that are highly demanded or scarce earn higher rewards, while those that are abundant earn lower incomes. This leads to differences in income levels among individuals.

4. Price determines where to produce. Producers choose production locations based on profitability. They tend to locate their businesses in areas where they can sell their products at higher prices or where demand is strong. For example, firms may locate in urban areas where consumers have higher purchasing power, enabling them to charge better prices and maximize profits.

5. Guides the producer on when to produce. Producers adjust their production timing based on price changes. They prefer to produce and supply goods when prices are high in order to earn more revenue. For instance, farmers may store produce and sell during seasons of scarcity when prices rise instead of selling immediately after harvest when prices are low.

6. Guides the producer on how to produce. Price influences the choice of production techniques. Producers aim to minimize costs and maximize profits. If prices are low, producers may adopt cheaper methods of production to remain profitable. If prices are high, they may invest in more efficient or advanced technologies to increase output and take advantage of higher returns.

7. Determines the demand of the commodity. Price has an inverse relationship with quantity demanded. *Ceteris paribus* (other factors constant), when the price of a commodity rises, consumers buy less of it because it becomes more expensive. When the price falls, consumers are encouraged to buy more since the commodity becomes more affordable. This relationship is explained by the law of demand.

8. Determines the supply of the commodity. Price has a direct relationship with quantity supplied. *Ceteris paribus*, when the price of a commodity increases, producers are willing to supply more because higher prices mean higher profits. When the price falls, producers reduce supply since production becomes less profitable. This is explained by the law of supply.

9. Determines the profits of the producer.

Profit is the difference between total revenue and total cost of production. Price plays a central role in determining the level of profit because it directly affects the revenue a producer earns from selling goods or services. When the price of a commodity is high, and costs of production remain constant, the producer earns higher revenue and therefore higher profits. On the other hand, if the price is low, revenue reduces and profits may fall or even turn into losses if costs exceed revenue.

THE DEMAND THEORY

Demand theory is one of the most important concepts in Economics because it helps us understand **how consumers make decisions** about what to buy, how much to buy, and when to buy. In everyday life, people are constantly choosing between different goods and services such as food, clothing, transport, and airtime, but their choices are limited by income, prices, and preferences.

Demand theory explains the relationship between the **price of a commodity and the quantity that consumers are willing and able to buy** over a given period of time. It shows that consumer behavior is not random but follows certain patterns that can be studied and predicted.

Definitions

Demand is the amount of a product that one is able and willing to buy at a given price in a given period of time.

OR

It refers to the human desire of a given product backed by the ability to pay for it in a given period of time.

Effective demand: This is the actual buying of a given product which is backed up by the necessary money.

Quantity demanded: This is actual amount of the product buyers are willing and able to buy at various prices in a given period of time.

Individual demand: This refers to the quantity of a given product that an individual is willing and able to buy at various prices in a given period of time.

REASONS WHY PEOPLE DEMAND FOR GOODS AND SERVICES

Demand for goods and services is influenced by different motives beyond just price and income. These reasons help explain **why consumers behave differently** in the market.

1. Functional demand. This is demand for goods and services because of their ability to satisfy basic human wants or needs. Consumers buy such products because they are useful in everyday life. These goods perform essential functions such as feeding, sheltering, clothing, or facilitating movement.

For example, people demand food to satisfy hunger, clothes for protection, and transport services to move from one place to another. This type of demand is common and forms the largest part of consumer demand in any economy, especially in developing countries where basic needs take priority.

2. Speculative effect. This arises when consumers buy goods because they expect future changes in price or availability. If people expect prices to rise in the near future, they increase their current demand in order to avoid paying higher prices later. On the other hand, if they expect prices to fall, they may postpone buying.

For example, in Uganda, when people hear that fuel prices are likely to increase, they may rush to fuel their vehicles. Similarly, traders may stock goods like sugar or cement expecting to sell them later at higher prices.

3. Impulsive demand. This is demand that occurs suddenly without prior planning. It is influenced by emotions, attraction, or immediate desire after seeing a product. Consumers do not intend to buy the product beforehand but are persuaded by its appearance, packaging, or advertising.

For example, a student seeing snacks, drinks, or fashionable items may decide to buy them immediately even without planning. Supermarkets often arrange products strategically to encourage such purchases.

4. Veblen effect. This occurs when consumers demand goods because they are expensive and seen as symbols of prestige or status. The higher the price of the product, the more attractive it becomes to certain consumers who want to show uniqueness or exclusivity.

Such consumers reduce demand when many people start using the same product because it loses its exclusiveness. They then shift to more expensive or rare alternatives.

Examples include luxury cars, expensive phones, designer clothes, and high-end houses.

5. Snob effect / to show off. Closely related to the Veblen effect, the snob effect occurs when individuals buy goods mainly to display wealth, social class, or status. Consumers derive satisfaction not just from using the product but from being seen using it.

Unlike normal demand, this is driven by pride, prestige, and the desire for recognition. For example, some individuals may buy very expensive clothes, cars, or gadgets mainly to impress others rather than for their usefulness.

6. Bandwagon effect (To be like others). This is demand that arises because many people are buying a product. Consumers feel the need to follow trends or fit into a group. The popularity of a product increases its demand, even if it is not necessarily better than alternatives.

For example, students may buy certain types of shoes, phones, or clothing styles simply because their friends or celebrities are using them. Social influence plays a big role in this type of demand.

7. Complementary demand. This is demand for goods that are used together with other goods. When a consumer owns one product, they automatically demand another that complements it.

For example, owning a car creates demand for fuel, tyres, and servicing. Buying a phone leads to demand for airtime, data, chargers, and earphones. The demand for one good leads to the demand for another related good.

FACTORS AFFECTING QUANTITY DEMANDED OF A COMMODITY

Demand is affected by the following;

1. Price of a commodity; a high price of a commodity leads to low quantity demanded of such a commodity because consumers find it expensive to buy, while low price leads to high quantity demanded of a commodity because consumers find it cheap to buy.

2. The price of a substitute good. High price of a substitute good leads to high demand of the commodity in question, this is so because consumers find it cheaper to buy that commodity in question. However a low price of a substitute good leads to low demand for the commodity in question since consumers find it expensive to buy the commodity in question.

3. The price of complements/Price of complementary goods; High price of a complementary good leads to low demand for the commodity in question, this is so because less of the complementary good is bought which leads to low demand for the commodity in question since the two are used together in the satisfaction of human wants. However low price of a complementary good leads to high demand for a commodity in question, this is so because high quantity of a complementary good is bought since the two commodities are used together in the satisfaction of human wants.

4. The level of the consumer income; high level of consumer's level of income leads to high quantity demanded of a given commodity because the consumer has the capacity/ability to purchase the commodity. However low income of a consumer leads to low quantity demanded of a given commodity because of the low purchasing power of the consumer.

5. Consumer's tastes and preferences; favourable tastes and preferences lead to high demand for goods because many people go for that commodity while unfavourable tastes and preferences leads to low demand for commodity because few people go for that commodity . **6. The population/the market size;** A high population size leads to high market for goods thus leading to high demand for such goods because there many potential buyers for such goods. On the other hand a low population size leads to low demand for goods because there a few potential buyers for such goods.

7. Government policy as regards taxation or subsidization of a commodity; High level of taxation of a commodity leads to low demand for a commodity, this is so because high taxation makes the commodity expensive due to high price. On the other hand low level of taxation of the

commodity leads to high demand for a commodity, this is so because low taxation makes the commodity cheap due to low price.

8. The level/nature of income distribution; even distribution of income leads to high demand for goods, this is so because of the high purchasing power of the majority of the people. However uneven distribution of income leads to low demand for goods because of the low purchasing power of the majority of the people.

9. Future price expectation; An expectation of high price of the commodity in future leads to a high demand for goods, this is so because consumers buy high quantity of goods currently so as to avoid buying at high prices. On expectation of a low price of a commodity in future leads to a low demand for goods, this is so because consumers buy low quantity currently so as to buy high quantity in future at low price.

10. Seasonal factors; Favourable season for a given commodity leads to high demand for a given commodity because there is apparent need for it. On the other hand unfavourable season/end of season leads to low demand for a good, this is so because there is no/limited apparent need for the commodity. .

11. The degree of advertising; A high degree of intensive and persuasive advertising lead to high demand for a good because of a high level of awareness by the consumers and being convinced to buy the good. On the other hand a low degree of advertising leads to low demand for a good, this is so because many consumers are not made aware of the existence of the good and convinced to buy.

12. Availability of credit facilities. Commodity demand is high when consumers are allowed to take goods on credit because many consumers without immediate cash are able to buy the commodity. However, commodity demand is low when consumers are not allowed to buy goods on credit because the few buyers with cash are the only ones who buy.

13. Size of the market/ population size. A Large population size with a high purchasing power leads to high demand of the commodity because many people demand for it and can afford to pay for it while a small size of the population leads to low demand of the commodity because few people consume the commodity.

14. The prevailing economic conditions in an economy. Commodity demand tends to be high during periods of economic prosperity (boom) because during such times, people are employed and earn fair income to purchase the commodity. However, commodity demand is low during periods of economic depression because many people have no jobs and thus have no income to purchase the commodity.

NB: the above factors are neutral in nature(explaining what leads to low quantity demanded and what leads to high quantity demanded) so we are expected to extract factors leading to low quantity and those leading to high quantity demanded of a commodity.

DEMAND FUNCTION

The quantity demanded of a given product, can be expressed as a function of the factors that determine its demand therefore, quantity demanded of a given period of time is a function of the determinant of an individual's demand for it. It can be expressed as; quantity demanded of

$$x = f (Px, PR, Y, T, A, \dots \dots \dots)$$

Where P = Price

Y = Income

PR = Price related goods

T = Tastes and preferences

A = Advertisement

INDIVIDUAL DEMAND VS MARKET DEMAND

1. Individual Demand

Individual demand refers to the quantity of a good or service that **a single consumer** is willing and able to buy at different prices over a given period of time.

It focuses on the behavior of **one buyer** and how that buyer responds to changes in price and other factors such as income, tastes, and preferences.

Explanation

Each consumer has their own needs, income level, and preferences. Therefore, the quantity demanded by one person may differ from another. For example, one student may buy more airtime than another depending on their needs and financial ability.

Example. If the price of soda is:

- UGX 1,000 → a student buys 3 bottles
- UGX 2,000 → the same student buys 1 bottle

This shows how one individual adjusts demand when price changes.

Key Features

- Refers to one consumer
- Depends on personal income and preferences
- Shows individual behavior in the market
- Represented by an **individual demand schedule or curve**

NB: *The factors affecting individual demand are the same as explained above (factors affecting quantity demanded of a commodity)*

2. Market Demand

Market demand refers to the total quantity of a good or service that **all consumers in the market** are willing and able to buy at different prices over a given period of time.

It is obtained by **adding together the individual demands** of all consumers in the market.

Explanation

Market demand reflects the combined behavior of many buyers. It shows the overall demand for a product in an economy or a specific area.

Example

Assume three consumers demand soda:

Price (UGX)	Consumer A	Consumer B	Consumer C	Market Demand
1,000	3	2	5	10
2,000	1	1	2	4

Market demand is the **sum of all individual demands** at each price.

Key Features

- Refers to all consumers in the market
- Obtained by horizontal summation of individual demand
- Influenced by population size and distribution of income
- Represented by a **market demand curve**

FACTORS THAT INFLUENCE MARKET DEMAND

Market demand refers to the total quantity of a commodity demanded by all consumers in the market. It is influenced by several factors beyond just the price of the product itself.

1. The general price level of the product. The price of a commodity directly affects how much of it consumers are willing and able to buy. When the price of a product is high, many consumers demand less because the commodity is expensive. On the other hand, when the price is low, more consumers are encouraged to buy, leading to high market demand. This relationship is explained by the law of demand.

2. The total household income. Market demand depends on the overall income of consumers in the economy. When household incomes is high, people have more purchasing power and are able to buy more goods and services, thus high demand. Conversely, when incomes are low, consumers spend less, leading to low market demand, especially for normal goods.

3. The price of other related products. The demand for a commodity is influenced by the prices of related goods, which may be substitutes or complements. If the price of a substitute good rises, consumers switch to the cheaper alternative, increasing its demand. If the price of a complementary good rises, demand for the related product falls because the two goods are used together.

4. Income distribution among the consumers. How income is distributed within a population affects market demand. If income is evenly distributed, more people have the ability to buy goods, increasing overall demand. However, if income is concentrated in the hands of a few individuals, demand for basic goods may be low while demand for luxury goods may increase.

5. Market size. Market size refers to the number of buyers in the market. A larger population means more consumers, which increases market demand. Factors such as population growth, migration, and urbanization can expand market size and raise demand for goods and services.

6. Amount of money in circulation. When there is more money circulating in the economy, consumers have greater purchasing power, which increases demand for goods and services. On the other hand, when money supply is low, consumers have limited spending ability, leading to reduced demand.

7. Government policies of taxation and subsidization. Government actions such as taxes and subsidies affect market demand. High taxes increase the price of goods, discouraging consumption and reducing demand. Subsidies lower the cost of production and may reduce prices, encouraging consumers to buy more and increasing demand.

8. Seasonal factors. Demand for some goods changes with seasons or time of the year. For example, demand for umbrellas and gumboots increases during the rainy season, while demand for cold drinks rises during hot weather. Seasonal changes therefore cause fluctuations in market demand.

9. Price expectations / speculation. Consumers' expectations about future prices influence current demand. If people expect prices to rise in the future, they increase their present demand to avoid higher costs later. Conversely, if they expect prices to fall, they may postpone purchases, reducing current demand.

NB: (emphasis should also be put on understanding factors leading to low market demand and high market demand) these should be generated from the above neutral factors.

Relationship between the Two

Market demand is formed by combining all individual demands. Any change in individual demand (e.g., due to income or tastes) will affect overall market demand.

For example, if many individuals increase their demand for smartphones, the total market demand will rise.

THE DEMAND SCHEDULE

This is a table showing the amount of a commodity demanded at various prices by a consumer or groups of consumers during a particular period of time. This schedule can be compiled either for an individual or for all individuals in the market.

INDIVIDUAL DEMAND SCHEDULE

Meaning

An individual demand schedule is a table that shows the different quantities of a commodity that **a single consumer** is willing and able to buy at various prices over a given period of time, *ceteris paribus* (other factors remaining constant).

It represents the behavior of one buyer in response to changes in the price of a commodity.

Explanation

An individual demand schedule illustrates the relationship between **price** and **quantity demanded** for one consumer. It shows that when the price of a commodity changes, the quantity demanded by that individual also changes.

Usually, as the price falls, the quantity demanded increases, and as the price rises, the quantity demanded decreases. This reflects the **law of demand**.

Example of an Individual Demand Schedule

Price of Soda (UGX)	Quantity Demanded (Bottles per week)
3,000	1
2,500	2
2,000	3
1,500	4
1,000	6

Interpretation

The table shows that:

- At a high price of UGX 3,000, the consumer buys only 1 bottle

- As the price falls to UGX 2,000, the consumer increases demand to 3 bottles
- At a lower price of UGX 1,000, demand rises to 6 bottles

This indicates an **inverse relationship** between price and quantity demanded.

Assumptions (*Ceteris Paribus*)

The demand schedule is constructed under the assumption that other factors remain constant, such as:

- Income of the consumer
- Tastes and preferences
- Prices of related goods
- Population
- Expectations

MARKET DEMAND SCHEDULE

Meaning

A market demand schedule is a table that shows the total quantity of a commodity that **all consumers in the market** are willing and able to buy at different prices over a given period of time, *ceteris paribus* (other factors remaining constant).

It represents the combined demand of all individual consumers in the market.

Explanation

A market demand schedule is obtained by **adding together the quantities demanded by all individual consumers at each price**. It shows how the total demand in the market changes as the price of a commodity changes.

Like individual demand, it also shows an **inverse relationship** between price and quantity demanded. As the price falls, total market demand increases, and as the price rises, market demand decreases.

Example of a Market Demand Schedule

Assume there are three consumers (A, B, and C) in the market:

Price (UGX)	Consumer A	Consumer B	Consumer C	Market Demand
3,000	1	2	1	4
2,500	2	2	2	6
2,000	3	3	2	8
1,500	4	3	3	10
1,000	5	4	3	12

Interpretation

The table shows that:

- At a high price (UGX 3,000), total market demand is low (4 units)
- As the price falls to UGX 2,000, market demand increases to 8 units
- At a low price (UGX 1,000), market demand rises to 12 units

This confirms that **market demand increases as price falls**.

How Market Demand is Derived

Market demand is derived through **horizontal summation** of individual demand schedules. This means adding the quantities demanded by each consumer at each price level.

Assumptions (*Ceteris Paribus*)

The market demand schedule assumes that other factors remain constant, such as:

- Consumers' incomes
- Tastes and preferences
- Prices of related goods
- Population size
- Government policies

THE DEMAND CURVE

A demand curve is a locus of points which shows the relationship between quantities demanded of a given product at various prices in a given period of time.

OR

It can also be defined as a curve that shows the quantity demanded of a given product at a various prices in a given period of time. It is a graphical representation of the demand schedule.

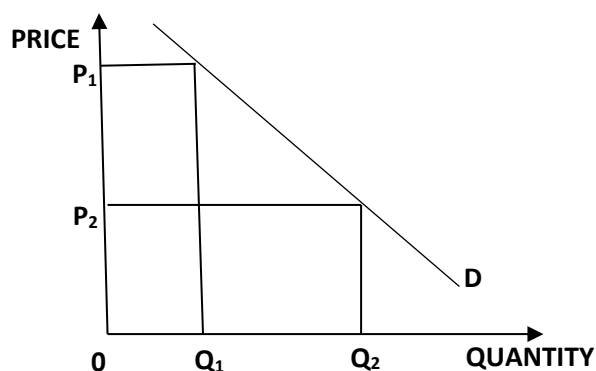
It is drawn on the assumption that,

Holding other factors constant, the higher the price, the lower the quantity demanded and the lower the price, the higher the quantity demanded.

Slope of the demand curve

A normal demand curve slopes downwards from left and therefore has a negative slope. This illustrates the law of demand which states that *ceteris paribus*, the higher the price, the lower the quantity demanded and the lower the price, the higher the quantity demanded

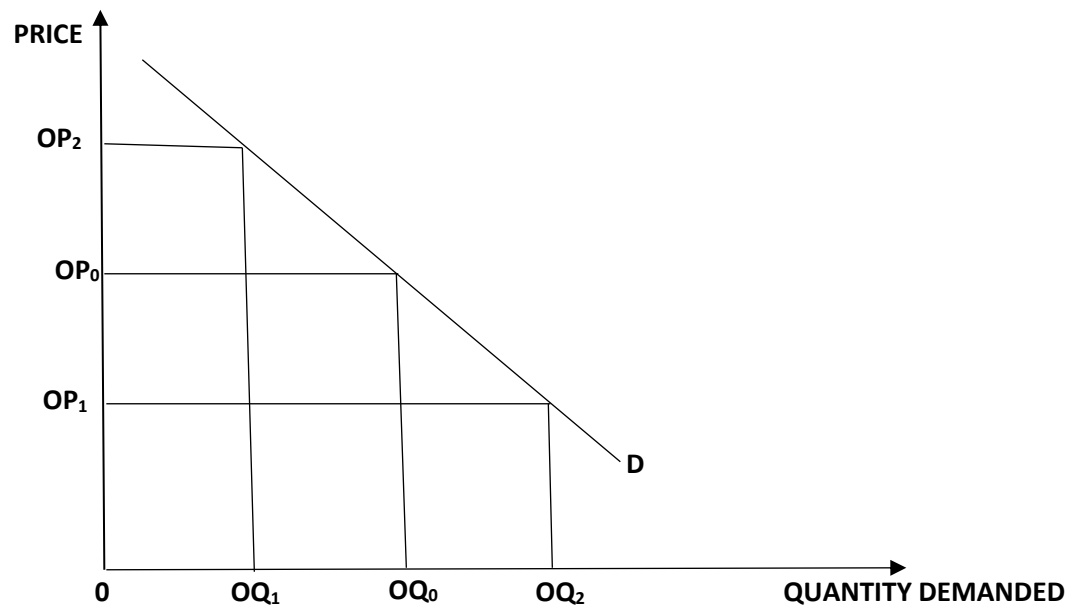
Illustration



THE LAW OF DEMAND

It states that “Holding other factors constant, the higher the price, the lower the quantity demanded of a commodity and vice-versa”

Illustration



Price and quantity demanded are inversely related i.e. as price increases from OP_0 to OP_1 , quantity demanded decreases from OQ_0 to OQ_1 and vice-versa.

QUALITIES OF A NORMAL DEMAND CURVE

1. It must be downward sloping from left to right.
2. It should not touch either of the axes. If it touches the Y-axis, it implies that a consumer incurs a cost for a commodity which has not been obtained. (He pays a price at zero quantity). If it touches the X-axis, it implies that the consumer is buying a commodity at zero prices.

Reasons why the normal demand curve slopes downwards / has a negative slope / slopes frame left to right / expressing law of demand

A normal demand curve is one that slopes downwards from left to right following the law of demand.

The following reasons explain why the demand curve slopes downwards from left to right.

1. The law of diminishing marginal utility

According to this law, when a consumer buys more units of the commodity, the marginal utility of that commodity continues to decline; and therefore the consumer will buy more units of the commodity only when the price reduces. When fewer units are available, utility will be high and the consumer will be prepared to pay more for that commodity. This proves that demand will be low at a higher price and that is why the demand curve is downward sloping.

2. The substitution effect of a price change.

When the price of the commodity falls, the price of substitutes remaining the same, a consumer reduces the quantities of other substitute goods whose prices now appear relatively high and increases the quantity of the commodity whose price has fallen. When the price of the commodity under consideration increases, the consumer leaves the commodity and buys the substitutes, given constant prices of substitutes hence the downward sloping demand curve.

3. The income effect of a price change. (Real income effect)

When an individual has a fixed income and the price of the commodity reduces, his real income increases and hence he can buy more units of the commodity with his fixed income. On the other hand when the price increases, the consumer's real income decreases and hence he buys less units of the commodity hence the downward sloping demand curve.

4. The total effect of a price change.

This is the combination of the substitution and income effects. When the price of the commodity falls, the quantity demanded increases because many new buyers are attracted while an increase in price leads to a decrease in demand because it scares away buyers hence the inverse relationship between price and quantity demanded which produces a downward sloping demand curve.

5. Behavior/presence of low income earners.

The demand curve depends upon the behavior of low income earners. They buy more when price reduces and less when the price increases. This leads to a downward sloping demand curve. (The rich do not have effect on the demand curve because they are capable of buying the same quantity even at a higher price)

6. Different/various uses of certain commodities.

Some goods have more than one use e.g. water, electricity, etc. such that when the price of the commodity increases, consumers tend to use it for essential purposes only hence reducing on its demand. On the other hand when the price reduces, the consumers put the commodity to many uses thereby increasing quantity demanded hence a downward sloping curve.

WHY MAY CONSUMERS BUY LESS OF A COMMODITY WHEN IT'S PRICE FALLS?

1. When the commodity is a Giffen good.

A Giffen good is an inferior good that takes a large share of a consumer's income, such that when its price falls, consumers reduce its consumption and shift to better alternatives. The fall in price increases real income, allowing consumers to buy superior goods instead. For example, if the price of basic food like posho falls, some low-income households may reduce its consumption and buy rice or meat instead.

2. When there is anticipated further price reduction in future.

If consumers expect the price to fall even more in the near future, they may delay buying the commodity now. As a result, current demand decreases despite the price fall. For example, if people expect the price of smartphones or electronics to drop further, they may postpone purchases.

3. When consumers prefer goods of ostentation / Snob effect.

Some consumers value exclusivity and prestige. When the price of such goods falls, they become less attractive because they are no longer seen as unique or prestigious. As a result, demand decreases.

For example, luxury items like expensive watches or designer clothes may lose appeal when their prices drop.

4. When a fall in price is associated with a fall in quality.

Consumers may interpret a price reduction as a sign of poor quality. They may believe the product is defective, outdated, or inferior. This reduces their willingness to buy the product. For example, if the price of a branded product suddenly drops significantly, consumers may suspect it is fake or substandard.

5. During a period of economic depression.

In times of economic downturn, incomes fall and unemployment rises. Even if prices decrease, consumers may lack the purchasing power to buy more goods. They may reduce consumption to basic necessities only.

For example, during economic hardship, people may cut down on non-essential goods even when prices are low.

WHY MAY CONSUMERS BUY MORE OF A COMMODITY WHEN ITS PRICE INCREASES?

1. When the commodity is a good of ostentation.

Some goods are demanded more when their prices rise because they signal wealth, status, or prestige. Higher prices make them more attractive to certain consumers who want to show social class.

For example, expensive cars, luxury phones, or high-end fashion may attract more buyers when prices increase.

2. When there is anticipated further increase in price in the future.

If consumers expect prices to rise even higher later, they may rush to buy more now to avoid paying more in the future. This increases current demand despite the price increase. For example, if fuel prices are expected to rise, people may buy more fuel immediately.

3. In case of ignorance effect.

Some consumers may mistakenly believe that higher prices indicate better quality. Due to lack of information, they associate expensive goods with superiority and therefore demand more as prices rise.

For example, a consumer may prefer a more expensive brand of medicine or electronics thinking it is more effective or durable.

4. When there is persuasive advertising.

Strong advertising can influence consumer behavior regardless of price. Even if prices rise, effective promotion can convince consumers that the product is worth buying, increasing demand. For example, heavily advertised products like beverages, cosmetics, or telecom services may experience increased demand despite price increases.

5. During a period of economic prosperity.

When the economy is doing well, incomes rise and employment levels are high. Consumers have more purchasing power and confidence, so they may buy more goods even when prices increase. For example, during periods of economic growth, demand for cars, electronics, and luxury goods may rise despite higher prices.

Conclusion

Although the law of demand generally holds, these exceptions show that consumer behavior is influenced by expectations, income levels, social factors, and perceptions of quality. Understanding these exceptions helps explain real-life market situations more accurately.

ABNORMAL/ REGRESSIVE/ EXCEPTIONAL DEMAND CURVES

These are curves which do not obey the law of demand which states that the higher the price, the lower the quantity demanded and the lower the price, the higher the quantity demanded ceteris paribus. Such curves take a different shape from the one of the normal demand curve.

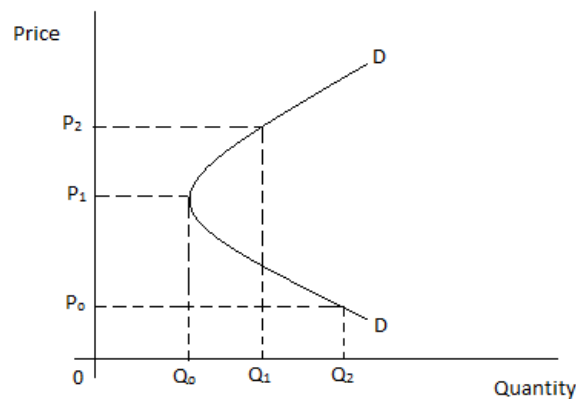
The following are the factors that violate the law of demand.

1. Demand for articles of ostentation/ luxuries/ conspicuous consumption.

These are goods bought by the rich people to impress or attract the attention of others.

for example sports cars, golden earrings. More of such goods are demanded at a higher price than at a lower price.

The demand curve for luxuries is regressive at the upper level.

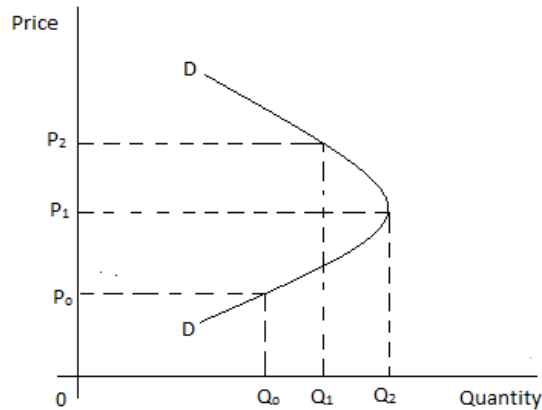


The quantity demanded is very high at a low price. As the price increases to an average price, the quantity demanded reduces so much because many poor people can no longer afford. As the price increases further to a very high price, the quantity demanded increases because all the rich people start buying the commodity.

2. Demand for giffen goods.

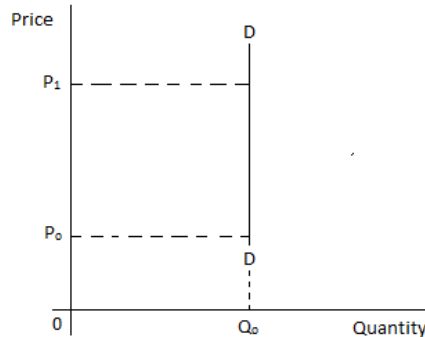
These are inferior goods which take a large proportion of the budget of low-income earners such that when their prices increase, the consumer reduces the consumption of other goods and buys the giffen good. Examples of giffen goods are the basic foodstuffs such as rice, maize, bananas and cassava.

For these giffen goods, the demand curve is regressive at the lower level such that if prices over increase, consumers have to lower the demand altogether.



An increase in the price from OP_0 to OP_1 causes an increase in amount demanded i.e. from OQ_0 to OQ_2 .

3. Demand for necessities. Goods which are very essential tend to have a fixed demand at different price levels. E.g. salt.



Quantity demanded remains constant even when the price increases from P_0 to P_1

4. Speculation (future price expectations)

When consumers expect a future price increase, they buy more units of the commodity in the current period even if the commodity's price is high. On the other hand, when they expect a future price fall, they buy less units of the commodity even if its price is low hence violating the law of demand.

5. Ignorance effect.

Some consumers may buy more units of the commodity at high prices due to information asymmetry/ market imperfection. Some also buy the more expensive item because they believe it to be of better quality.

6. Effect of an economic boom or depression.

In times of a depression, fewer quantities of goods are purchased even when their prices are reduced. This is because in times of an economic depression, purchasing power is very low.

In times of an economic boom, more quantities of goods are purchased even when their prices are increased. This is because in times of an economic boom, purchasing power is very high. In both cases, the demand curve is positively sloped.

7. Addiction to the consumption of the commodity.

Consumers who are addicted to consumption of particular commodities normally buy the same quantities of the good even if the price increases e.g. smokers.

8. Special seasons.

For example Christmas season, Iddi season, in such seasons, people can afford to buy goods at high prices due to the high need for them.

TYPES OF DEMAND/DEMAND INTERRELATIONSHIPS

Composite demand. This is the total demand for a product that serves many purposes such that its total demand is got by adding up total quantity demanded for it for all several uses of it. E.g. demand for water, electricity, cotton, steel, timber, etc.

Examples of composite demand include;

Demand for electricity (for lighting, ironing, cooking, etc.)

Demand for water (for cooking, bathing, etc.)

Demand for timber (for construction, furniture making, manufacturing, etc.)

Demand for cotton wool (for cloth making, cushioning, cleaning, etc.)

(Add more examples)

Joint / complementary demand. This refers to the demand for goods that go hand in hand such that an increase in demand for one, leads to an increase in demand for others e.g. cars and fuel, guns and bullets, mobile phones and sim-cards.

Examples of joint demand include;

1. **Cars and fuel (petrol/diesel).** A person who owns a car must also demand fuel for it to operate. Without fuel, the car cannot be used.

2. **Phones and airtime/data.** Owning a mobile phone creates demand for airtime and internet data to make calls and access online services.

3. **Printers and ink cartridges.** A printer requires ink to function, so demand for printers leads to demand for ink cartridges.

Competitive demand. This refers to demand for products which serve the same purpose such that increase in price for one increases the quantity demanded for the other whose price has remained constant e.g. coffee and tea, nomi and Omo.

Examples of competitive demand include;
Demand for tea and coffee, Demand for Omo
and Nomi

Derived demand. This refers to the demand for a product not for its own sake but as a result of the demand for another product it is used to produce e.g. demand for factors of production like land, labour and capital is derived from the demand for commodities which such factors are used to produce.

Examples of derived demand include; Demand for land, Demand for capital, Demand for entrepreneurs, Demand for organization

Independent demand. This refers to demand for a given product whose demand does not / is not affected by the demand for other products.

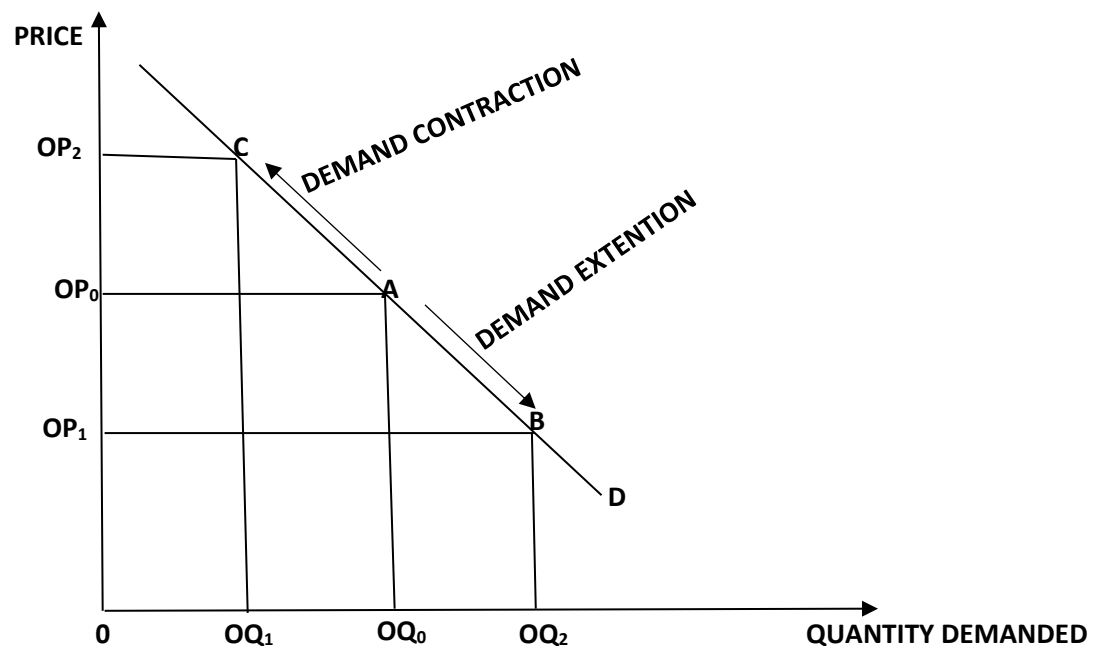
Examples of independent demand
include; Demand for clothes and food
Demand for a car and a pen Etc.

CHANGE IN QUANTITY DEMANDED AND CHANGE IN DEMAND

Change in quantity demanded refers to increase or decrease in the quantity demanded of a given product in the market due to a change in its own price, holding other factors constant.

It is illustrated by the movement along the same demand curve either upwards or downwards.

Illustration of change in quantity demanded



NOTE: Change in quantity demanded can either be a contraction or extension in demand.

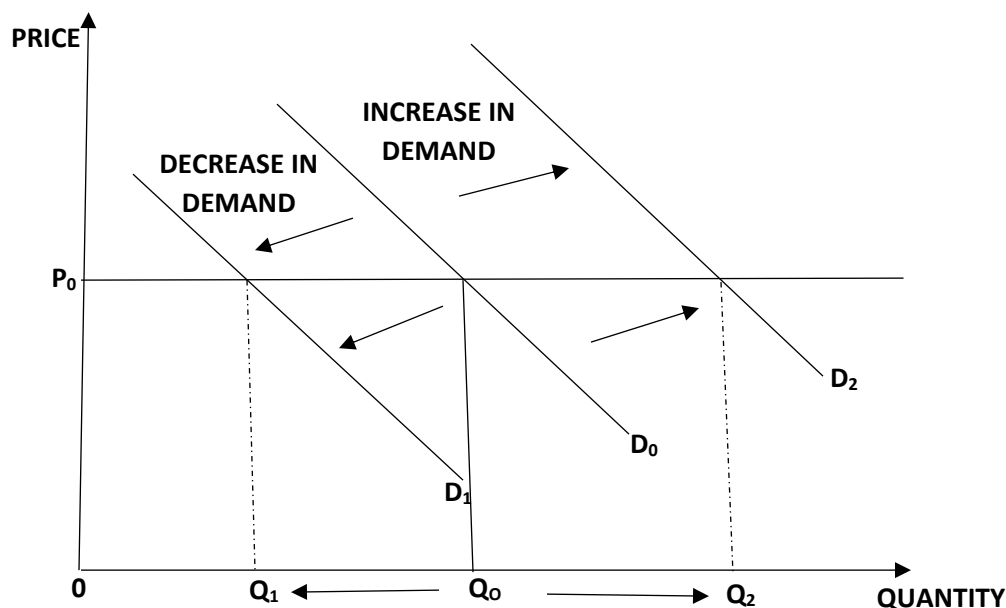
- **Contraction in demand** refers to a decrease in quantity demanded of a commodity brought about by increase in price holding other factors constant. This is shown by movement from point A to B in the above diagram.
- **Extension in demand** refers to increase in quantity demanded of a commodity brought about by decrease in price holding other factors constant. This is shown by a movement from point A to C in the above diagram.

CHANGE IN DEMAND

This refers to an increase or decrease in the demand of a given commodity brought about by changes in other factors that affect demand when its own price is constant.

It is illustrated by a shift of the demand curve either to the left or to the right indicating an increase or decrease in demand respectively.

Illustration



From the above illustration, D_0 is the original demand curve.

D_1 shows a shift of the demand curve inwards from D_0 representing a decrease in demand. D_2 shows a shift of the demand curve outwards from D_0 representing an increase in demand.

FACTORS / DETERMINANTS OF A CHANGE IN DEMAND

- 1) **Change in price of substitutes.** An increase in price of a substitute commodity leads to an increase demand for the commodity whose price has remained constant because it's cheaper while a decrease in price of a substitute leads to a decrease in demand of the commodity whose price has remained constant since it now becomes expensive for the consumer to buy.
- 2) **Change in price of a complementary commodity.** An increase in the price of a complement leads to a decrease in demand for a commodity since the commodity cannot be used in the absence of a complement while a decrease in the price of a complement leads to an increase in demand for the commodity since the complement becomes cheaper.
- 3) **Change in the income level of the consumer.** An increase in the income of a consumer leads to an increase in the demand for the commodity since the increase in income increases the purchasing power of the consumer while a decrease in consumer's income leads to

decrease in demand for the commodity since the decrease in income reduces the purchasing power of the consumer.

- 4) **Change in the consumer's tastes and preferences.** Favourable change in tastes and preferences leads to an increase in demand for the commodity since the consumer develops more taste for it while unfavourable change in tastes and preferences for the commodity leads a decrease in demand for the commodity since the consumer's tastes are no longer in favour for the commodity.
- 5) **Change in the consuming population of the commodity.** An increase in the population since followed with a corresponding increase in the purchasing power leads to an increase in demand since there are many consumers and with a high purchasing power while a decrease in the population size leads to a decrease in demand since the decrease in population leads to a reduction in the number of consumers.
- 6) **Change in government policy of taxation and subsidization.** An increase in the level of taxation followed by reduction in the level of taxation leads to a decrease in the demand of the commodity since the increase in taxation reduces the disposable income of consumers while a decrease in the level of taxation leads to an increase in the demand of the commodity since a reduction in taxation leaves the consumers with more disposable income.
- 7) **Change in the availability of credit facilities.** An increase in the availability of credit facilities leads to an increase in the demand of the commodity since it enables consumers to obtain more of the commodity on credit while a decrease in the availability of credit facilities leads to a decrease in the demand of the commodity since it makes it difficult for consumers to obtain goods on credit.
- 8) **Change in the levels of advertisement.** An increase in the level of advertisement leads to an increase in demand of the commodity since it increase awareness to consumers about the availability of the commodity while a decrease in the level of advertisement leads to a decrease in demand of the commodity since it makes consumers less aware about the availability of the commodity.
- 9) **Expectation of future price changes.** Expectation of a future price increase leads to an increase in demand of the commodity currently since consumers don't want to incur the high price in future while expectation of a future price decrease leads to a decrease in

demand of the commodity currently since consumers want to benefit from the price decrease in future.

10) **Change in the political situation in the country.** The political climate becoming stable leads to an increase in demand of the commodity since it makes consumers confident to move to market centers to buy the commodity without fear of losing life while unfavourable change in the political climate leads to a decrease in demand of the commodity since it creates fear among consumers to move to market centers to buy the commodity.

11) **Change in season.** A favourable change in season leads to an increase in demand for the commodity since the season favours it and hence consumers buy more of it while unfavourable change in the season leads to a decrease in demand since the season does not favour it and hence consumers reduce its demand.

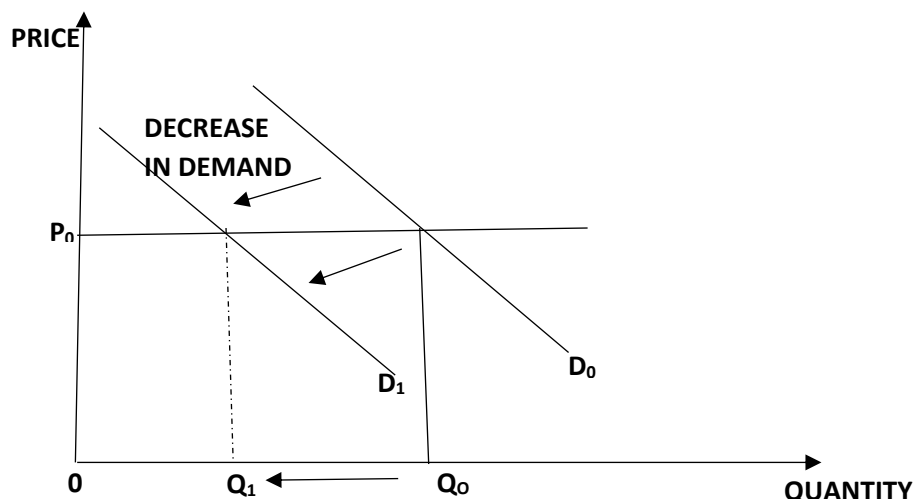
DECREASE IN DEMAND

This refers to a reduction in the demand of a given commodity when its price is constant due to other factors that influence demand being unfavorable.

Or: This refers to a decline in demand of a commodity due to factors that influence demand becoming unfavourable while holding price of the commodity (in question) constant.

It is represented by a total shift of the demand curve inwards to the left holding the commodity price constant.

Illustration of a decrease in demand



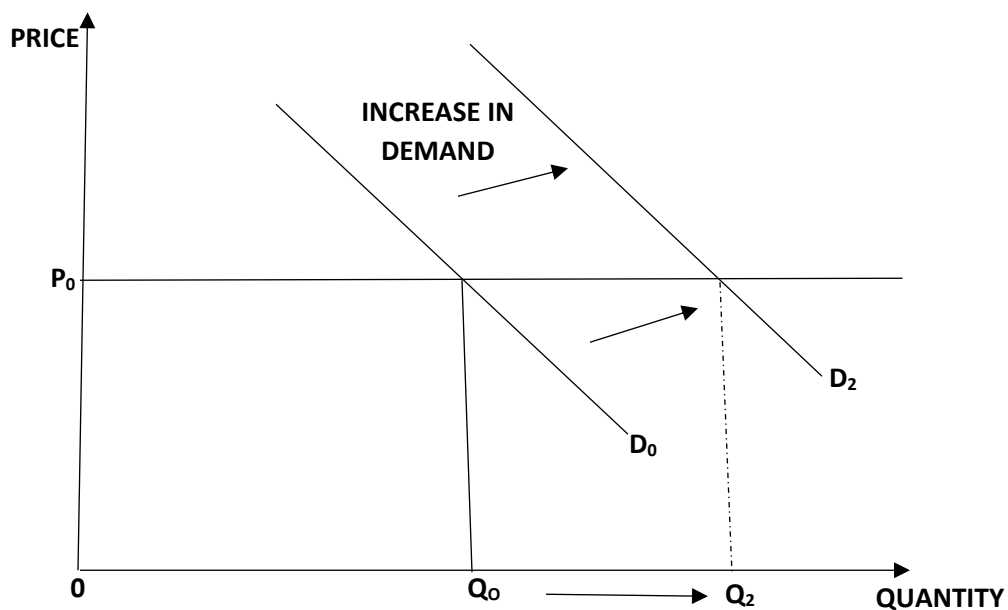
Decrease in demand is caused by;

1. Decrease in consumer's income
2. Decrease in advertisement
3. Expectation of a future price decrease.
4. Unfavourable seasonal changes
5. Decrease in population / market size
6. Unfavourable change in the tastes and preferences
7. Decrease in price of substitute product
8. Unfavourable economy / economic depression
9. Decline in the quantity of products

INCREASE IN DEMAND

This is the demand for more quantities of a commodity due to conditions of demand/ factors that influence demand becoming (more) favourable while holding price of the commodity (in question) constant.

It is represented by a total shift of the demand curve outwards to the right holding the commodity price constant.



Increase in demand is caused by;

10. Increase in consumer's income
11. Increase in advertisement
12. Expectation of a future price increase.
 Favourable seasonal changes
13. increase in population / market size
14. favourable change in the tastes and preferences
15. increase in price of substitute product

THE THEORY OF SUPPLY

The theory of supply is a fundamental concept in Economics that explains the behavior of **producers (firms)** in the market. While demand theory focuses on consumers, supply theory focuses on how producers decide **what to produce, how much to produce, and when to supply goods and services**.

Supply refers to the quantity of a good or service that producers are **willing and able to offer for sale at different prices over a given period of time**. Just like consumers aim to maximize satisfaction, producers are mainly driven by the desire to **maximize profits**.

At the center of supply theory is the relationship between **price and quantity supplied**. This relationship is explained by the **law of supply**

Effective supply. This refers to the actual amount of a given product, producers or suppliers bring to the market at a given price in a given period of time.

WHY DO PRODUCERS SUPPLY GOODS?

Producers supply goods and services for various economic and social reasons, although the main objective is usually to **maximize profits**. The following are the key reasons:

- 1. To earn profits.** This is the main motive of most producers. Producers supply goods because they expect to earn profit, which is the difference between total revenue and total cost. When prices are high and costs are low, profits increase, encouraging producers to supply more goods.
- 2. To meet consumer demand.** Producers supply goods in response to the needs and wants of consumers. When there is high demand for a commodity, producers increase supply in order to satisfy consumers and maintain their market share.
- 3. To survive in the market.** Firms must continue producing and supplying goods in order to remain in business. If they stop supplying, they may lose customers and be pushed out of the market by competitors.
- 4. To expand the business.** Producers may increase supply in order to grow their firms. Expansion allows them to increase output, enter new markets, and benefit from economies of scale, which can reduce costs and increase profits in the long run.
- 5. To utilize available resources.** Producers supply goods in order to make use of available factors of production such as land, labour, and capital. Idle resources lead to losses, so firms engage in production to ensure efficient utilization.
- 6. To respond to high prices.** High market prices act as an incentive for producers to supply more goods. When prices rise, producers are motivated to increase output because higher prices mean higher potential profits.
- 7. To fulfill government requirements or policies.** In some cases, producers supply goods to comply with government regulations, policies, or directives. For example, governments may encourage or require production of certain essential goods through incentives or legal measures.
- 8. To achieve social objectives.** Some producers, especially government enterprises and non-profit organizations, supply goods not mainly for profit but to improve social welfare. For example, they may provide essential services like education, healthcare, or public transport at affordable prices.

9. To maintain customer loyalty and reputation. Firms supply goods consistently in order to build trust and maintain good relationships with customers. Reliable supply helps retain customers and strengthens the firm's reputation in the market

SUPPLY FUNCTION

Meaning

A supply function is a **mathematical relationship** that shows how the quantity supplied of a commodity depends on its price and other factors that influence supply.

It expresses supply in the form of an equation.

General Form

$$Q_s = f(P, C, T, G, N, E)$$

Where:

- **Q_s** = Quantity supplied
- **P** = Price of the commodity
- **C** = Cost of production
- **T** = Technology
- **G** = Government policy (taxes/subsidies)
- **N** = Number of producers
- **E** = Expectations

This shows that supply depends not only on price but also on other factors.

Simplified Supply Function

When we assume other factors remain constant (*ceteris paribus*), the supply function becomes:

$$Q_s = f(P)$$

This means quantity supplied depends only on price.

SUPPLY SCHEDULE

Meaning

A supply schedule is a **table** that shows the different quantities of a commodity that producers are willing and able to supply at various prices over a given period of time.

Types of Supply Schedules

(a) Individual Supply Schedule

This shows the quantity supplied by **one producer** at different prices.

Example:

Price (UGX)	Quantity Supplied (Units)
1,000	2
2,000	4
3,000	6
4,000	8
5,000	10

(b) Market Supply Schedule

This shows the **total quantity supplied by all producers** in the market at different prices.

Example:

Price	Firm A	Firm B	Firm C	Market Supply
1,000	2	1	3	6
2,000	4	2	4	10
3,000	6	3	5	14

Market supply is obtained by **adding individual supplies**.

FACTORS THAT DETERMINE THE QUANTITY OF A COMMODITY SUPPLIED

1. Price of the commodity.

A **high** market price creates a strong profit incentive that encourages producers to offer more units for sale because the revenue earned per unit exceeds the marginal cost of production; **whereas**, a **low** price reduces the potential for profit, causing producers to withhold supply or switch to other goods as the price may not cover their basic costs of operation. For example, if the price of maize in the market rises, farmers will be motivated to sell off their entire harvest to maximize their income.

2. The cost of production.

When the cost of production is **low**, perhaps due to cheap raw materials or affordable labor, firms enjoy a wider profit margin and are willing to supply more output to the market; **while**, **high** production costs, such as expensive electricity or high wages, narrow the profit margin, making it difficult for firms to maintain large volumes of supply without incurring losses. For instance, if the price of fertilizers and seeds is low, a commercial farmer will be able to plant and supply more bags of rice than when the prices are high.

3. The number of firms in the industry.

A **high** number of firms operating within an industry leads to a large total volume of goods being brought to the market because the productive capacity of the entire sector is expanded; **however**, when the number of firms is **low**, such as in a monopoly or oligopoly, the total output capacity of

the industry is limited, resulting in a smaller quantity supplied. For example, the supply of telecommunication services in a country is much higher when there are five competing networks compared to when there is only one provider.

4. Level of technology used.

The use of a **high** level of advanced technology, such as automated assembly lines or computerized systems, increases the speed of production and reduces unit costs, which allows for a larger supply; **whereas**, a **low** level of technology, often characterized by manual methods and old machinery, results in slow production and a restricted quantity of goods. A practical example is a bakery using a modern electric oven which can supply hundreds of loaves of bread daily, while a bakery using a traditional wood-fire oven can only supply a few.

5. Length of gestation period.

Commodities with a **low** or short gestation period, such as poultry or vegetables, allow producers to respond quickly to market changes by bringing goods to market in a matter of weeks; **while**, those with a **high** or long gestation period, such as cattle or timber, cannot be supplied immediately even if prices rise because the biological or manufacturing process takes years to complete. For instance, a farmer can quickly increase the supply of tomatoes in three months, but a vanilla farmer cannot increase supply immediately because the crop takes years to mature.

6. The objective of the firm.

If a firm's priority is **high** sales volume or market dominance, they will supply large quantities to the market even at slim profit margins to drive out competitors; **however**, if the objective is purely profit maximization, the firm may keep supply **low** to create an artificial shortage that maintains a higher market price. An example is a new soft drink company that supplies massive quantities at a low price just to get people to recognize their brand name.

7. The supply of factor inputs.

A **high** level of availability of factors of production like fertile land, skilled labor, and capital allows for a continuous and large-scale supply of goods; **whereas**, a **low** supply of these essential inputs creates a production bottleneck that forces the firm to keep its supply levels down. For

example, a construction company can supply many housing units if cement and skilled masons are readily available, but the supply will stay low if there is a nationwide shortage of cement.

8. The price of a jointly supplied commodity.

In cases where two goods are produced together, a **high** price for the main product, such as beef, leads to an increased slaughter rate which automatically results in a **high** supply of the joint product, like hides; **while**, a **low** price for the main product leads to reduced production, causing the supply of the joint product to remain **low** as well. This means that even if the price of leather is high, its supply will remain low if the demand and price for beef are low.

9. The price of a competitively supplied product.

When the price of a competing product that uses the same resources, such as wheat, is **high**, farmers will shift their land and labor toward it, leaving the supply of the alternative, such as maize, **low**; **however**, if the price of wheat is **low**, resources are shifted back to maize, and its supply becomes **high**. For example, a furniture maker will supply more chairs and fewer tables if the market price for chairs becomes significantly higher than that of tables.

10. Political climate in the area.

A **high** level of political stability creates a secure environment that encourages firms to invest in long-term production and keep supply chains open; **whereas**, a **high** level of political instability, such as civil unrest or war, creates risk and uncertainty, leading to a **low** supply as producers flee or factories are destroyed. A country at peace will have a high and steady supply of manufactured goods, while a country in conflict will see its markets empty of basic supplies.

11. Natural factors / Climatic conditions.

Favorable climatic conditions, such as reliable rainfall and sunshine, lead to **high** yields in agricultural sectors, ensuring a large supply of food to the market; **while**, adverse conditions such as prolonged drought, floods, or locust invasions result in **low** yields and a significant shortage. For example, during a year with perfect weather, the supply of coffee in Uganda is usually very high, whereas a year of drought results in a very low supply.

12. Level of development of infrastructures.

A **high** level of infrastructural development, such as paved roads, railway lines, and stable electricity, lowers the cost of moving goods and allows for a large supply to reach distant markets; **however**, a **low** level of infrastructure makes it expensive and slow to transport goods, keeping the quantity supplied to the market **low**. For instance, a farmer in a remote area with poor, muddy roads will supply less milk to the city than a farmer located near a modern highway.

13. Degree of freedom of entry of firms.

When there is a **high** degree of freedom for new firms to enter the industry without strict legal or financial barriers, the total number of producers increases, leading to a large market supply; **whereas**, when freedom of entry is **low** due to expensive licenses or government restrictions, the market remains dominated by a few firms, keeping the total supply **low**. An example is the hair salon industry where entry is easy and supply is high, compared to the electricity distribution industry where entry is difficult and supply is controlled.

14. Government policy of taxation and subsidization.

A **high** level of government subsidization, where the state pays for part of the production costs, encourages a large supply by making it cheaper for the firm to operate; **while**, **high** taxation acts as a financial burden that increases costs and discourages production, keeping the quantity supplied **low**. For example, if the government provides a subsidy on fuel, the supply of transport services will be high, but if the government puts a high tax on fuel, the supply of transport services will fall.

15. Working conditions.

High-quality working conditions, including fair wages, medical insurance, and safety equipment, lead to motivated workers and high productivity which boosts supply; **however**, **low**-quality working conditions lead to frequent labor strikes and inefficiency, which results in a **low** quantity of goods being produced. A factory that treats its workers well will have a high and consistent output, whereas one with poor conditions may face constant shutdowns.

16. Expectation of future price changes.

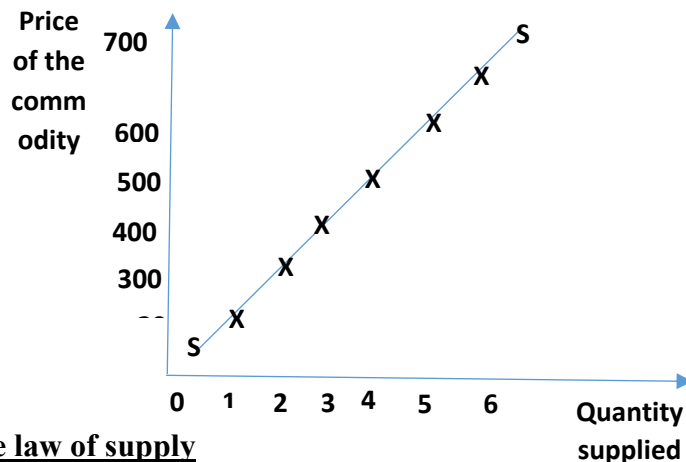
If the expectation of a future price increase is **high**, producers may hold back their current stocks in warehouses to sell them later for more money, keeping current supply **low**; **whereas**, if they expect prices to be **low** in the future, they will release all their current stock immediately to avoid losses, making the current supply **high**. For example, if sugar producers expect the price of sugar to double next month, they will supply very little to shops today

THE SUPPLY CURVE

A Supply curve is a locus of points showing different quantities of a commodity that producers are able to offer to the market for sale at given prices in a given period of time.

It can also be defined as a graphical representation of the supply schedule, a normal supply curve is upward sloping from left to right as shown below;

Normal supply curve

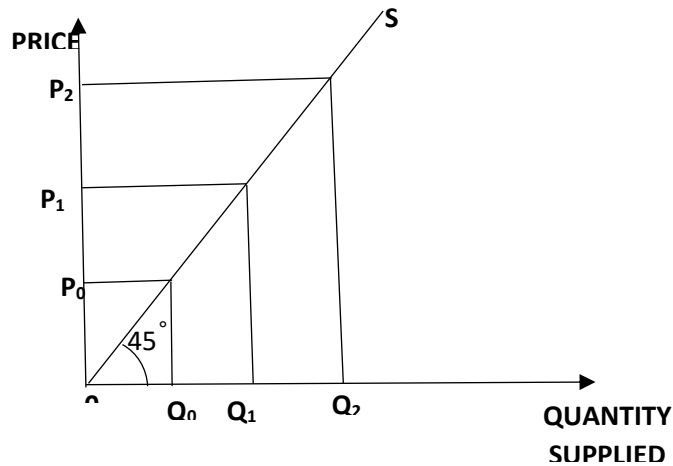


The law of supply

The **Law of Supply** is a fundamental principle in Economics that describes the functional relationship between the market price of a commodity and the quantity of that commodity that producers are willing to offer for sale.

The law of supply states that all factors held constant, the higher the price, the higher the quantity of a commodity supplied and the lower the price, the lower the quantity of a commodity supplied.

Illustration



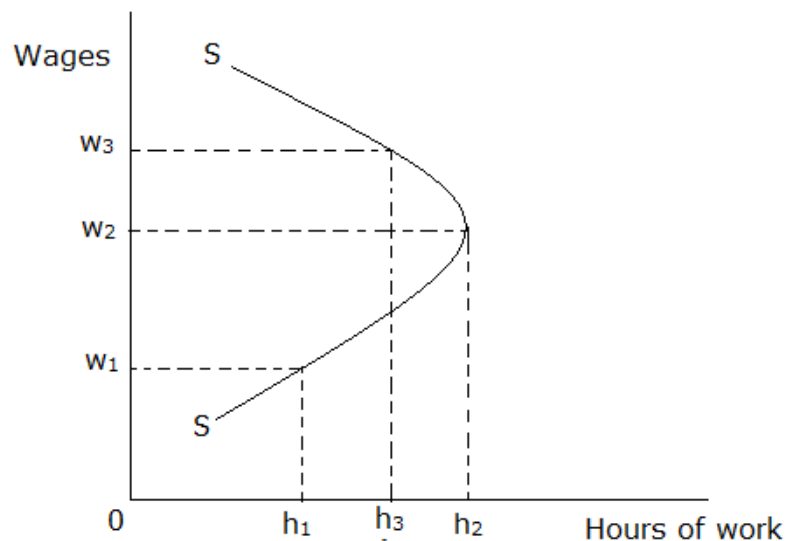
ABNORMAL/ REGRESSIVE/ EXCEPTIONAL SUPPLY CURVES

These are curves which do not obey the law of supply which states that the higher the price, the higher quantity supplied and the lower the price, the lower the quantity supplied *ceteris paribus*.

The following are the factors that violate the law of supply.

1. Supply of labour.

The supply curve for labour is as shown below.

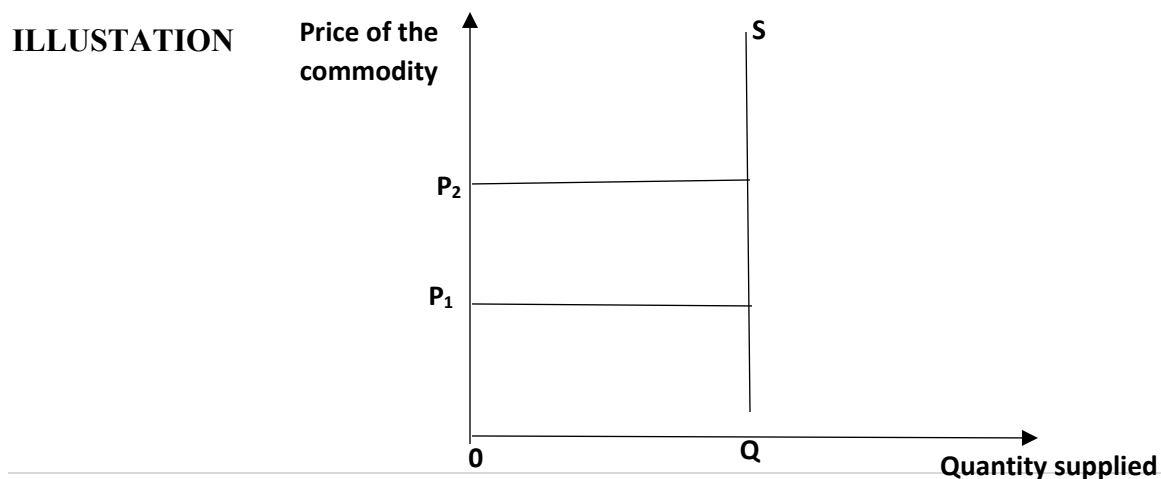


From the curve, when the wage increases from OW_1 to OW_2 , labour supply increases from Oh_1 to Oh_2 . Further increase in wages from OW_2 to OW_3 leads to a reduction in labour supply from Oh_2 to Oh_3 . This is due to the following factors;

- **Preference of leisure by workers;** When workers are paid a high wage, they tend to use their excessive earnings for leisure activities other than work hence violating the law of supply.
- **Presence of target workers,** these are workers who get employed in order to achieve certain targets e.g. to construct a house and when such workers are paid a high wage, they easily acquire their targets and as a result they may stop working even when promised higher wages hence violating the supply law.
- **Cultural factors;** women who have several family responsibilities reduce the number of hours worked even when the wage rate is increased due to the need to fulfill the family obligations. Also sometimes it's due to old age; workers will work for less hours despite the wage increase if they are very old and weak.
- **Reduction in the real income due to high rates of inflation,** this reduces purchasing power of the money wage in terms of the goods and services bought by the workers.
- **Progressive tax system:** increased rate of taxation as the income of the workers increases discourages workers hence reducing the number of hours worked even when the wage is high.
- When workers are avoiding risks; this is especially with jobs like soldier, miners, chemists
- **Poor working conditions;** workers will work for few hours despite the wage increase due to poor working conditions. Also when workers are avoiding risks; this is especially with jobs like soldier, miners, chemists etc.

2. Supply of a fixed commodity

In such a circumstance, even when the price of the commodity increases the quantity supplied may not increase and the supply curve of this commodity is said to be perfectly inelastic.



From the diagram above it can be seen that the supply remains the same despite an increase in price

3. Expectation of future price changes (speculation). If producers expect the prices to increase in future, they put less on the market even if prices are slightly increasing. This is because they expect to get a lot of profits in future by selling at high prices. On the other hand, if the prices are expected to fall in the future, producers supply more even if the prices are slightly decreasing. This causes an abnormal supply curve.

4. Supply of perishable goods. For perishable goods, more is supplied immediately after harvest whether prices are high or low hence violating the law of supply.

5. Exhaustion of raw materials. In this case, even if there is an increase in price, quantity supplied may not increase because the producers have no requirements to produce final goods.

6. Existence of commodities supplied by the government. The government may decide to supply certain essential commodities to consumers at lower prices to improve peoples' standards of living. This creates a regressive supply curve.

7. Speculation by producers

At times producers tend to predict that the price of a commodity may increase in future and as a result, even if the price of the commodity increases currently, they may supply less so as to wait and enjoy very high prices and violate the law of supply.

TYPES OF SUPPLY

1. Complementary (Joint) supply.

Joint supply refers to the supply of two or more commodities from the same process of production/ same source/ same resources such that an increase in the supply of one commodity leads to increase in the supply of the other.

Examples of joint supply include;

- i. Supply of meat and skin from slaughtered animals/ beef and hides from slaughtered animals Supply of petrol, diesel and paraffin from crude oil (through fractional distillation)
- ii. Supply of mutton and wool
- iii. Supply of maize flour and maize bran

2. Competitive supply

This refers to the supply of two or more commodities that use the same resources for their production such that an increase in the supply of one product leads to decline in the supply/ production of the other.

Examples of competitive supply include;

- i. Supply of eggs and meat from chicken
- ii. Supply of milk and meat from cows
- iii. Crop and animal production from a piece of land. Supply of jerry cans and basins from plastics

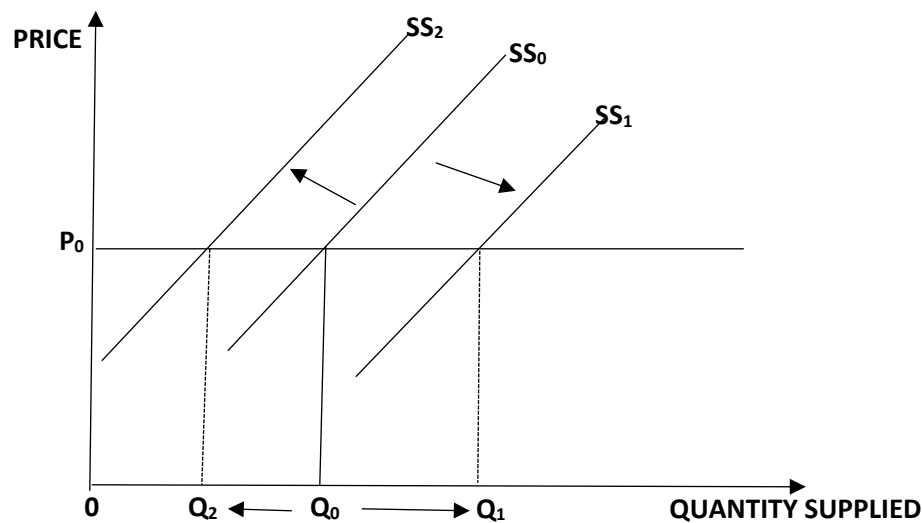
3.Composite supply. This refers to supply of a commodity that has got more than one source of production. Eg. Cooking oil can be got from sun flower, cotton, simsim, g/nuts etc. **Water supply.** Water can be supplied from different sources such as rivers, boreholes, rainwater, and piped water, **Electricity.** Electric power can be generated from hydroelectric dams, solar energy, thermal plants, and wind energy.

CHANGE IN SUPPLY AND CHANGE IN QUANTITY SUPPLIED

Change in supply is an increase or decrease in the supply of a given product when its price is constant due to changes in other factors which influence supply.

It is illustrated by a shift in the supply curve either to the left or to the right of the shape of the original curve meaning a decrease or increase in supply respectively.

Illustration of change in supply



SS_0 to SS_1 – increase in supply

SS_0 to SS_2 – decrease in supply

From the above diagram, supply curve SS_0 is the original supply curve with original price P_0 and original quantity Q_0 .

At a constant price P_0 a favourable change in the factors affecting supply leads to an increase in supply thus the supply curve shifts outwards to SS_1 .

At a constant price, the unfavourable change in factors affecting supply leads to a decrease in supply thus the supply shifts inwards to SS_2 .

FACTORS AFFECTING CHANGE IN SUPPLY OF A COMMODITY

1. **Change in level of technology used in production.** An improvement in technology used in production leads to an increase in supply of the commodity since it makes production easy and efficient while a reduction in technology used in production leads to a decrease in supply of the commodity since it makes production tiresome to workers.
2. **Change in the demand for the commodity.** An increase in the demand of the commodity leads to an increase in supply of the commodity since the increase in demand creates a

bigger market for the commodity while a decrease in demand for the commodity leads to decrease in supply since a decrease in demand reduces the market for the commodity.

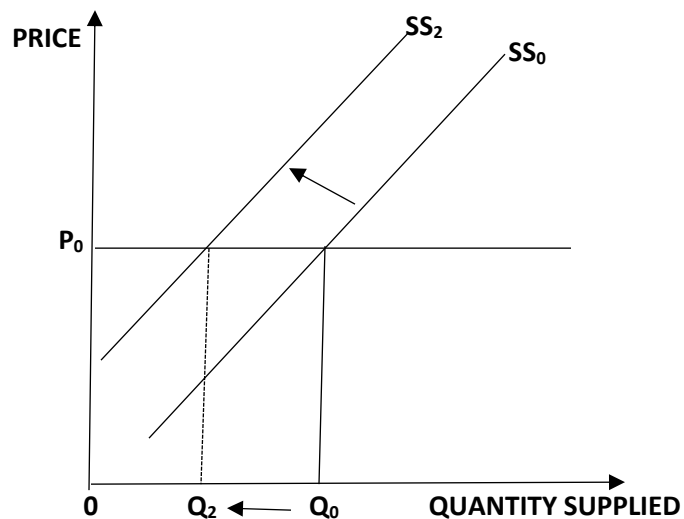
3. **Change in government policy of taxation and subsidization to producers.** An increase in taxation leads to a decrease in supply since the increase in taxation increases the cost of production while a decrease in taxation leads to an increase in supply since it lowers the cost of production thus enabling producers obtain raw-materials at a cheaper price.
4. **Change in the gestation period of producing the commodity.** In a situation where the gestation period becomes shorter, the supply of the commodity increases since less time is taken to produce the final product while an increase in the gestation period leads to a decrease in supply since more time is now required to produce the commodity.
5. **Change in the number of producers.** An increase in the number of producers of the commodity leads to an increase in supply since the increase in number of producers increases the number of producers producing the same commodity while a decrease in the number of producers leads to a decrease in supply of the commodity since it reduces the producers producing the commodity.
6. **Change in political situation/ climate.** In a situation where the political climate becomes stable, supply increases since it creates confidence among producers to produce the commodity while in a situation where the political climate becomes unstable, supply decreases since it discourages production among producers due to fear of loss of life and property.
7. **Change in working conditions.** An improvement in working conditions of workers leads to an increase in supply. This is because workers become motivated to work and hence become more productive while a decline in working conditions leads to a decrease in supply since it demotivates workers which makes them less productive.
8. **Change in the objectives of the firm.** Change in the objective of the firm from sales maximization to profit maximization, supply decreases since the firm now produces little output in order to sell at high price while in a situation where the firm's objective becomes sales maximization, the supply of the commodity increases since the firm produces more in-order to maximize sales.
9. **Change in price of other goods.** An increase in the price of the substitute commodity leads to a decrease in supply of the commodity whose price has remained constant since

producers prefer supplying commodities whose prices are high while a decrease in price of the substitute commodity leads to an increase in supply of the commodity since its price is now considered high by the producers.

10. Change in the price of factors of production. An increase in prices of factors of production leads to a decrease in supply of the commodity since it leads to increase in the cost of production while a decrease in the prices of factors of production leads to an increase in the supply of the commodity since it reduces the cost of production.

11. Speculation in the market. Expectation of a price increase leads to an increase in supply of the commodity since producers now supply more in order to fetch more profits while expectation of a price decrease leads to a decrease in supply since producers now supply less in order to avoid making losses.

A DECREASE IN SUPPLY.

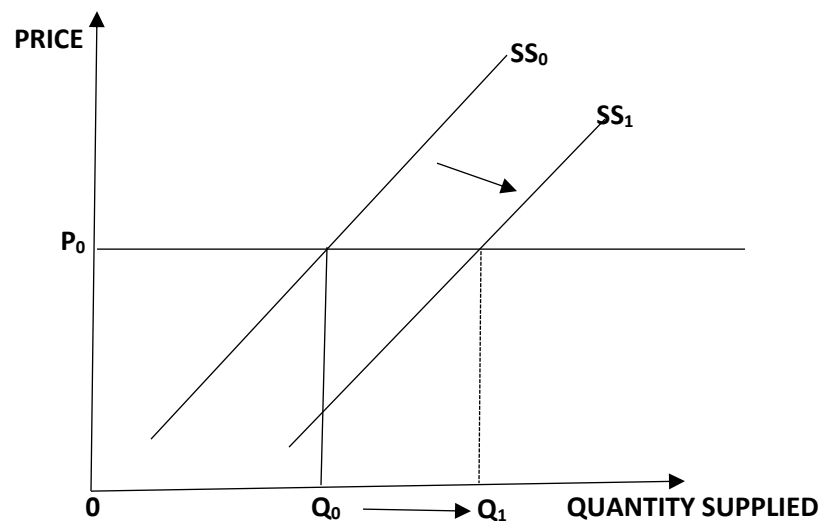


A decrease in supply is illustrated by a shift of the original supply to the left SS_0 to SS_2 . A decrease in supply is influenced by the following factors;

- Increase in the price of its substitute
- Decrease in supply of the factors of production
- Change in the objective of the firm from sales maximization to profit maximization.
- Decrease in subsidies
- Increase in taxes

- Reduction in market size, level of demand
- Increase in taxation
- Unfavourable change in natural factors
- Increase in exit and restricted entry of firms in the industry
- Decrease in the number of producers
- Decline in technology used in production

INCREASE IN SUPPLY



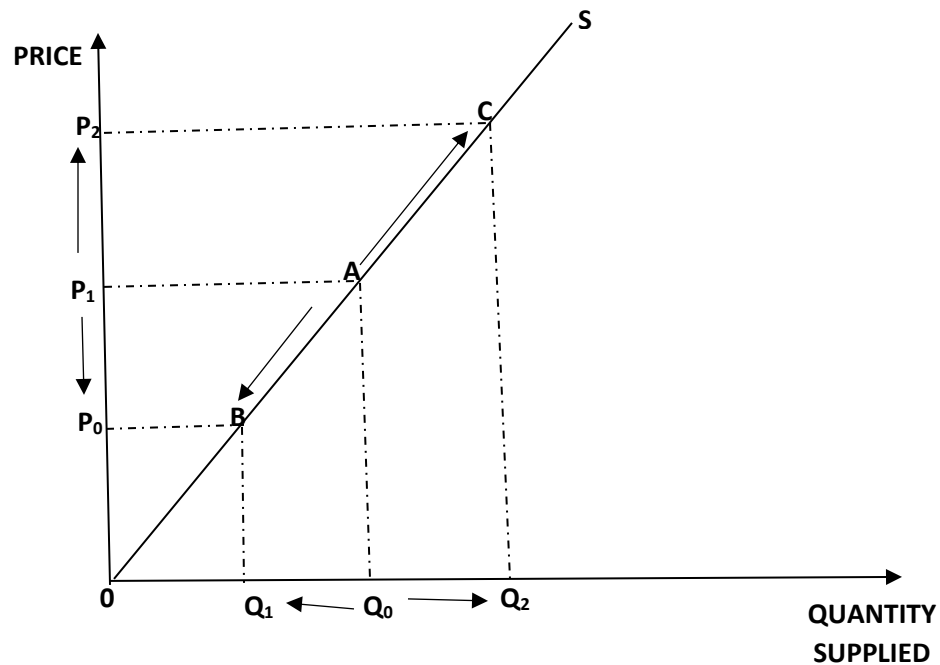
An increase in supply is illustrated by a shift of the original supply curve to the right from SS_0 to SS_1 i.e. the original supply curve shifts outwards.

- Increase in demand
- Decrease in price of the substitute
- Improvement in technology
- Decrease in taxation
- Increase in availability of factors of production
- Decrease in cost of production
- Favourable change in natural factors
- The gestation period becoming short
- Increase in subsidies

CHANGE IN QUANTITY SUPPLIED

This refers to an increase or decrease in the quantity supplied of a product due to a change in its own price *ceteris paribus*.

Illustration of change in quantity supplied



Extension in supply is the increase in the quantity supplied of a product due to an increase in its own price *ceteris paribus*. In the above diagram it is shown by a movement from point A to point C

Contraction in supply on the other hand refers to the decrease in quantity supplied of a product due to a decrease in its own price *ceteris paribus*. This is shown by a movement from point A to point B on the above diagram.

EQUILIBRIUM IN THE MARKET

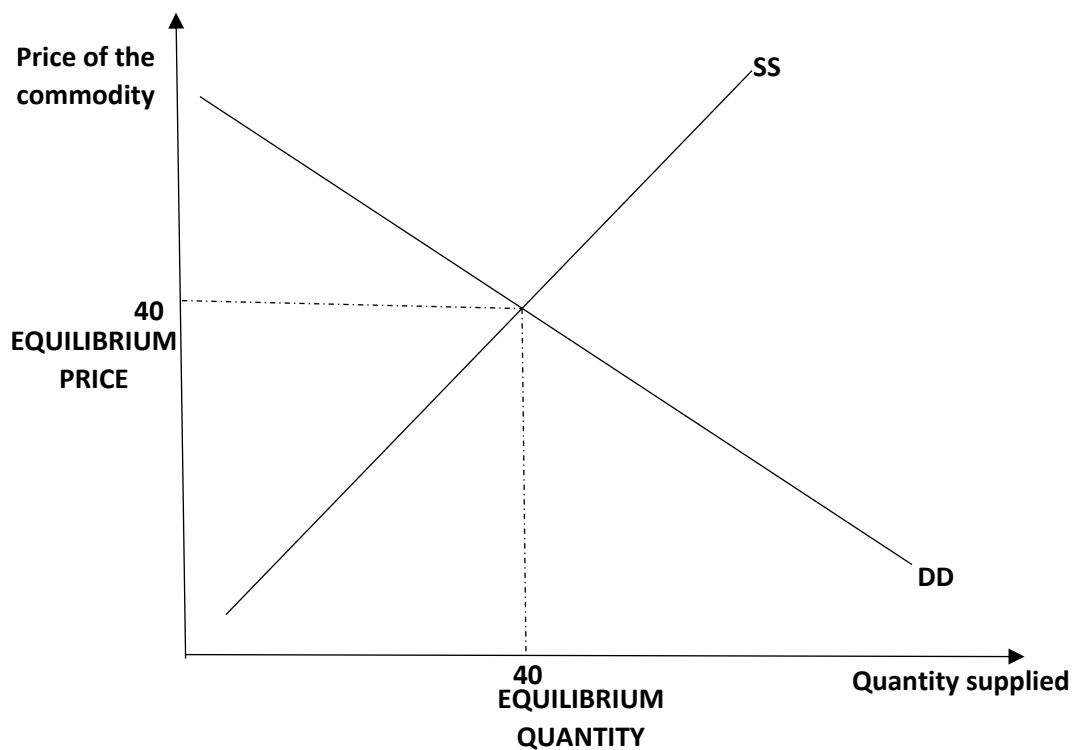
Equilibrium in the market is a situation in the market where the economic forces as they exist at a time have no tendency to change.

In the market, equilibrium can be attained by the interaction of the market forces of demand and supply. In this case we assume that supply and demand are a function of price (they are influenced by price only), *ceteris paribus*.

Price of Y (shs)	Qty dd of Y (kgs)	Qty ss of Y (kgs)
70	10	70
60	20	60
50	30	50
40	40	40
30	50	30
20	60	20
10	70	10

Representing the information in the table, we can obtain the demand curve, supply curve as shown on the graph above

Representation of the Above Information on a Graph to Determine the Equilibrium Price and Quantity



Point E is where the supply curve meets the demand curve and it is the equilibrium point.

The quantity where supply is equal to demand is called equilibrium quantity (Q_E) and in this case it is 40kg.

Equilibrium price is the price at which quantity demand is equal to quantity supplied. In this case it is 40shs.

Equilibrium price is the price which just clears the market of all commodities offered for sale hence also called **market clearing price**.

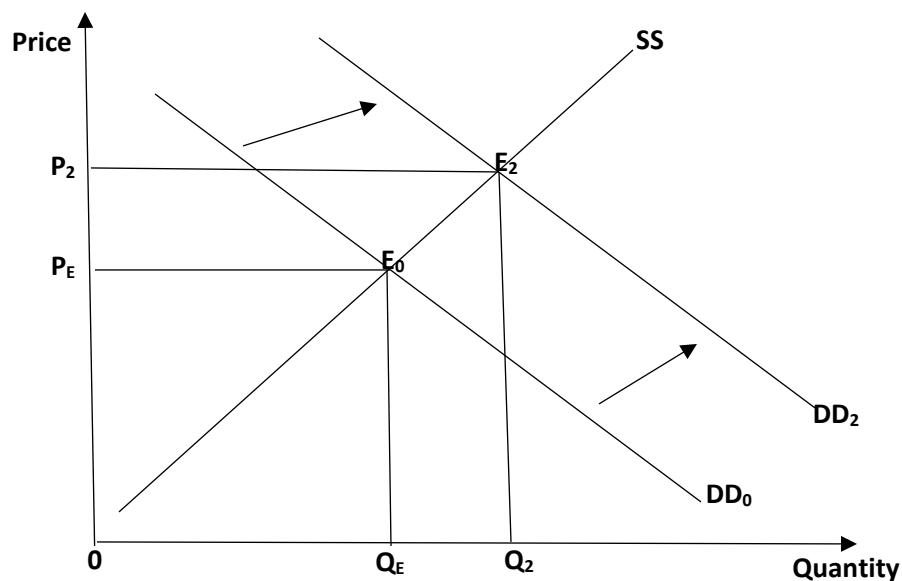
When the equilibrium price stabilizes or is present in the market for a long period of time, it is called a **normal price**.

EFFECTS OF CHANGE IN DEMAND ON EQUILIBRIUM PRICE AND QUANTITY

A change in demand is illustrated by a shift in the original demand curve either to the left or to the right.

An increase in demand at constant supply.

An increase in demand is shown by the right ward shift of the demand curve from DD_0 to DD_2 as shown below.



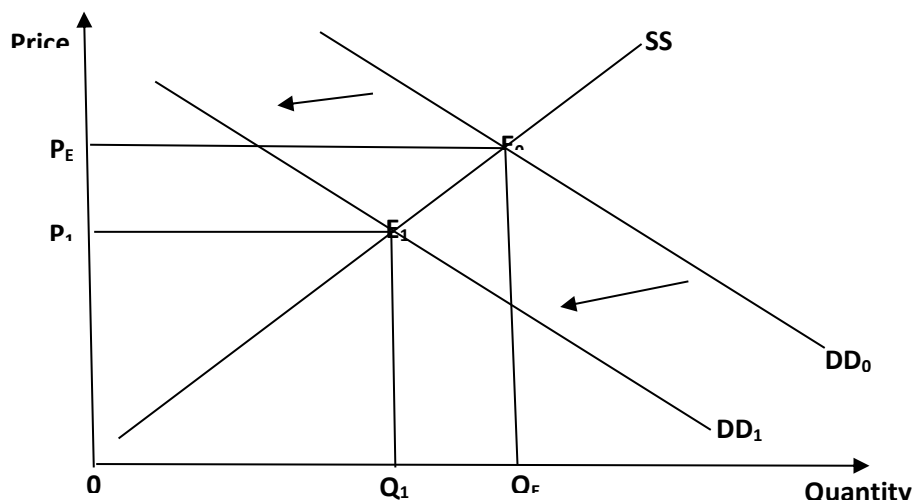
From the above illustration, the original equilibrium quantity is Q_E and the original equilibrium price is P_E . An increase in demand leads;

To a shift in the original demand curve from DD_0 to DD_2 which leads to an increase in equilibrium quantity from Q_E to Q_2 and price from P_E to P_2 .

The equilibrium point changes from E_0 to E_2

A decrease in demand at a constant supply.

A decrease in demand is shown by an inward shift of the demand curve from DD_0 to DD_1 as shown below



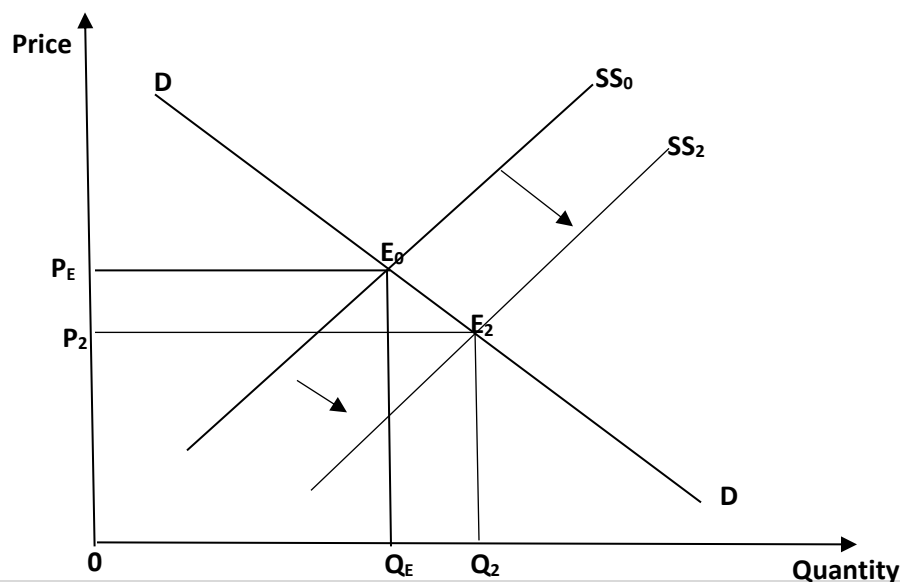
A Decrease in demand leads to a shift in the original demand curve to the left from DD_0 to DD_1 which leads to a decrease in the equilibrium price and quantity from Q_E to Q_1 and P_E to P_1 respectively.

Effects to change in supply on equilibrium quantity and price

A change in supply is illustrated by a shift of the original supply curve either to the right or to the left.

An increase in supply at a constant demand.

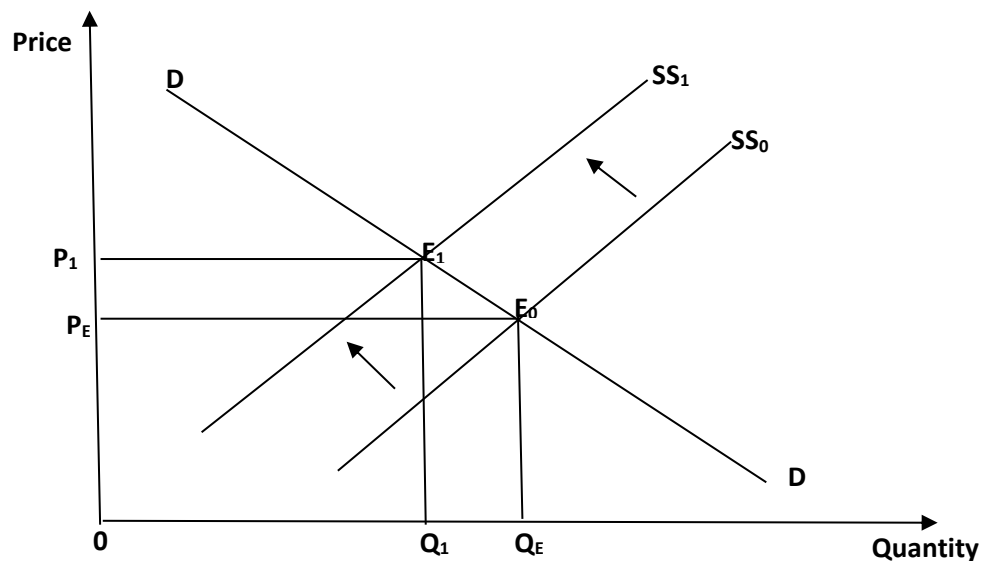
An increase in supply is shown by an outward shift in the supply curve from SS_0 to SS_2 as shown below.



From the illustration, the original equilibrium quantity is Q_E and the original equilibrium price is P_E , an increase in supply leads to a shift in the original supply curve to the right from SS_0 to SS_2 which leads to an increase in equilibrium quantity from Q_E to Q_2 and a decrease in equilibrium price from P_E to P_2 .

A Decrease in supply at a constant demand.

A decrease in supply is shown by an inward shift of the supply curve from SS_0 to SS_1 as shown below.



A decrease in supply at a constant demand leads to a shift in the original supply curve to the left from SS_0 to SS_1 which leads to a decrease in equilibrium quantity from Q_E to Q_1 and an increase in equilibrium price from P_E to P_1 .

THE CONCEPT OF ELASTICITY

Meaning

Elasticity in Economics refers to the measure of the **degree of responsiveness** of one variable to changes in another variable. In simple terms, it measures **how much one thing changes when another thing changes**.

Elasticity refers to the measure of the degree of responsiveness of dependent variables to changes in the independent variables.

Dependent variables can be supply and demand while **independent variables** can be factors affecting demand and factors affecting supply.

Elasticity can be subdivided into **Elasticity of demand** and **Elasticity of supply**

THE CONCEPT OF ELASTICITY OF DEMAND

Elasticity of demand is the degree of responsiveness of the quantity demanded of a given product due to changes in the factors that influence its demand.

According to the law of demand ceteris paribus the higher the price the lower the quantity demanded and the lower the price the higher the quantity demanded, however this law does not tell us by how much demand changes in response to the price of the product.

The different concepts of elasticity of demand include the following;

- price elasticity (PED)
- Cross elasticity of demand (CED / XED)
- Income elasticity of demand (YED)

Price elasticity of demand (PED)

This refers to the degree of responsiveness of the quantity demanded of a given product due to changes in its own price.

$$PED = (-) \frac{\text{proportionate change in demand}}{\text{proportionate change in price}}$$

$$= PED = - \left(\frac{\Delta Q_d}{\Delta P} \times \frac{P}{Q} \right)$$

Where;

ΔQ_d is change in quantity demand

ΔP is change in price

P is initial price

Q_d is initial quantity demanded

NOTE : the negative is always multiplied in the expression because it is a slope or gradient of a normal demand curve so as to make the answer positive since the slope of a normal demand is negative elasticity has no units.

Example 1: Given that the price of a given commodity increased from 950Shs. To 1050Shs. calculate the PED of demand when its quantity decreases from 450 to 380units.

$$= - \left(\frac{\text{change in quantity demanded}}{\text{change in price}} \times \frac{\text{Initial price}}{\text{Initial quantity demanded}} \right)$$

$$= - \left(\frac{\Delta Q}{dp} \times \frac{p}{Q} \right)$$

$$\Delta Q_d = 450 - 380$$

$$= 70 \text{ units}$$

$$= - \left(\frac{70}{100} \times \frac{950}{450} \right)$$

$$= - \left(\frac{133}{90} \right)$$

$$= +1.48$$

Example 2: Given the table below, calculate the elasticity of demand for commodity P

Price (£)	Quantity demanded (kgs)
160	14
240	08

Example 3: Given that the price of commodity J increased from 400Shs to 500Shs and its quantity demanded decreased by 53%. Calculate the PED of commodity J.

SOLUTIONS

$$\begin{aligned}
 PED &= \left(\frac{\text{Change in quantity demanded}}{\text{Change in price}} \times \frac{\text{Initial price}}{\text{Initial quantity demanded}} \right) \\
 &= - \left(\frac{8 - 14}{240 - 60} \times \frac{160}{14} \right) \\
 &= - \left(\frac{-63}{80} \times \frac{160}{14} \right) \\
 &= - \left(\frac{-3 \times 2}{7} \right) \\
 &= - \left(\frac{-6}{7} \right) \\
 PED &= 0.857
 \end{aligned}$$

Example

3:

$$\begin{aligned}
 PED &= \left(\frac{\text{Change in quantity demanded}}{\text{Change in price}} \times \frac{\text{Initial price}}{\text{Initial quantity demanded}} \right) \\
 &= \left(\frac{-DQD}{DP} \times \frac{P}{Q} \right) \\
 &= - \left(\frac{-DQD}{Q} \times \frac{P}{DP} \right) \\
 &= \left(\frac{-53}{25} \right) \\
 &= -(-2.12) \\
 &= 2.12
 \end{aligned}$$

Given that the price in commodity J increased from 400 to 500 and its quantity demanded decreased by 53%. Calculate the PED

$$\frac{- \text{Proportionate change in quantity demanded}}{\text{Proportionate change in price}}$$

$$\frac{\% \text{ change in quantity demanded}}{\% \text{ change in price}}$$

$$\% \text{ change in price} = \frac{500 - 400}{400} \times 100$$

$$= \frac{100}{400} \times 100$$

$$= 25\%$$

$$= -\left(\frac{-53}{25}\right) = 2.12$$

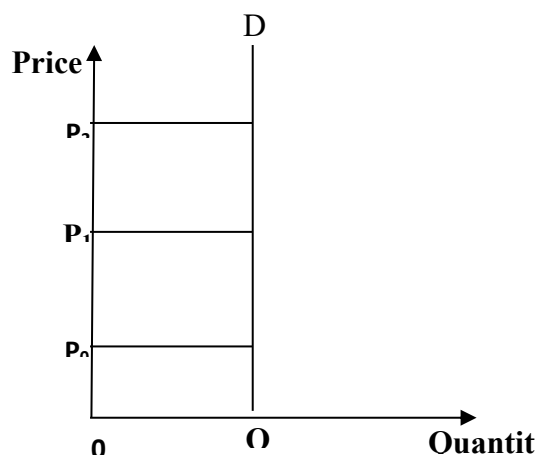
DEGREE OF / TYPES / CATEGORIES OF PRICE ELASTICITY OF DEMAND

Price elasticity of demand ranges from zero to infinity ($0 \leq \text{P.E.D} \leq \infty$)

1. Perfectly inelastic demand (P.E.D = 0)

Under this type of elasticity of demand, a change in the price of a given product does not affect its quantity demanded and its co-efficient of the elasticity of demand is zero i.e. the consumers buy the same quantity of a given product at whatever price. Products of such a demand situation have no substitutes at all and are mostly necessities e.g. salt, land etc.

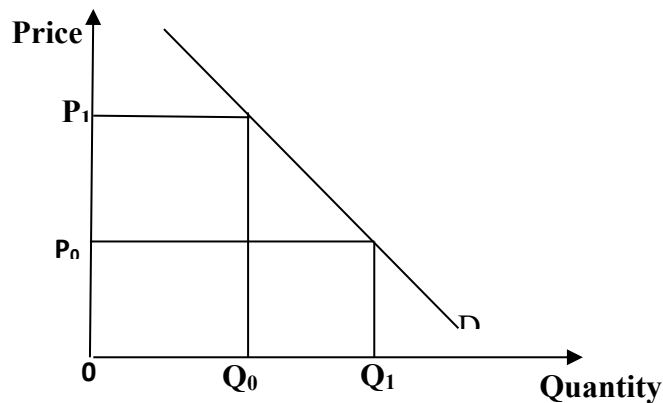
Illustration



2. Inelastic demand (Low elasticity of demand) ($0 < \text{P.E.D} < 1$)

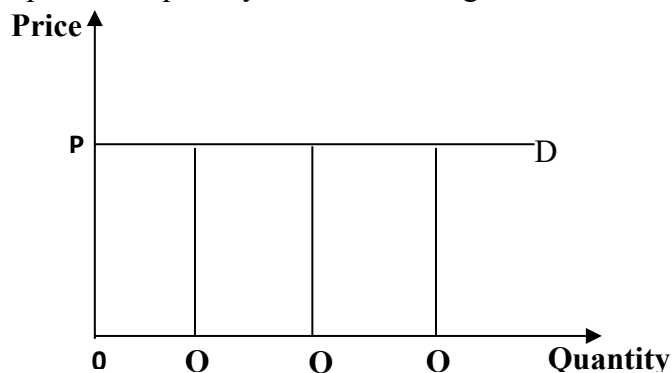
Under this type of PED, the co-efficient is greater than zero but less than one. I.e. a big change in the price of a given commodity leads to a less than proportionate change in its quantity demanded. Products with such a demand situation have limited close substitutes and their demand curve tends to be very steep e.g. water, sugar.

illustration



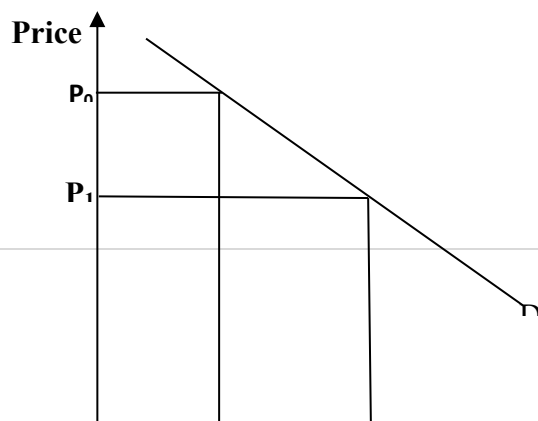
3. Perfectly elastic demand (P.E.D = ∞)

Under this type, the coefficient of elasticity of demand is infinity or under-fined. This means that at a constant price, the quantity demanded of a given commodity keeps on changing.



Here consumers are prepared to buy all that they can at a given price but if the price increases, the demand may fall to zero. It is difficult to find an example of a product whose demand is perfectly elastic.

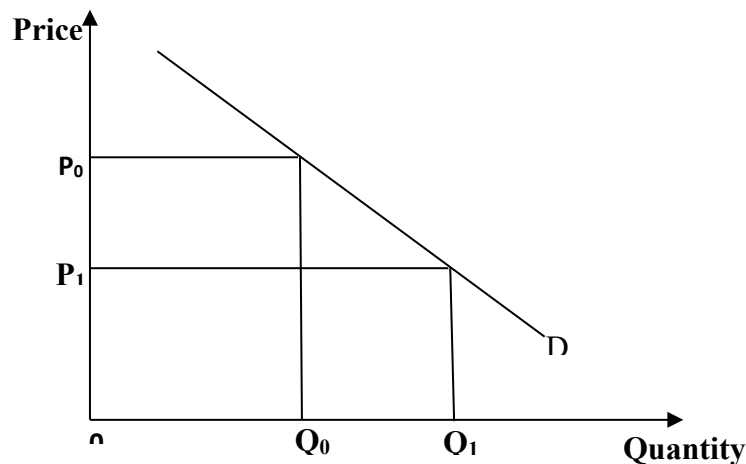
4. Elastic demand (High elasticity of demand) ($1 < \text{P.E.D} < \infty$)



From the above illustration, a small change in price from P_0 to P_1 or P_1 , to P_0 , leads to a big change in the quantity demanded either of Q_0 to Q_1 , or Q_1 to Q_0 respectively.

5. Unit/ unitary elasticity of demand (P.E.D = 1)

Under this type, the co-efficient of elasticity of demand is one (1) and this means that a given change in price leads to the same / proportionate change in quantity demanded. The demand curve here is evenly slope



The illustration shows that the change in price leads to the same proportionate change in quantity demanded

FACTORS THAT DETERMINE / AFFECT / INFLUENCE PRICE ELASTICITY OF DEMAND

1. Availability of substitutes/ degree of substitutability of the commodity. Demand for commodities that have close substitutes is price elastic because slight changes in price make consumers to buy more of the other alternatives. However, demand for commodities that have no close substitutes is price inelastic because consumers have no alternatives to resort to in case of price changes.

2. Availability of complements. Demand for a commodity which is a strong complement to what the consumer has is price inelastic. For example the demand for fuel remains inelastic despite its price increase because people already have cars. However, demand for a commodity which is not a strong complement to what the consumer has is price elastic because the consumer has a choice whether to buy or not in case of price changes.

3. Proportion of the consumer's income spent on the commodity. Demand for commodities which take a very small proportion of the consumer's income is price inelastic. E.g. an increase in the price of a razor blade may not greatly affect the quantity demanded. However, demand for commodities which take a big percentage of the consumer's income is price elastic.

4. Level of consumer's income. Rich people continue to buy even if the commodity's price increases but the poor people will always stop buying even if there is a slight increase in the price hence demand is price inelastic among the rich and price elastic among the poor.

5. Degree of necessity of the commodity. Demand for necessities like soap, salt is price inelastic because consumers cannot easily do without them. However, demand for non - essential items is price elastic because consumers easily reduce the amount they buy when price increases.

6. Level of addiction in the use of the commodity. Demand for an addictive commodity like cigarettes is price inelastic because such a commodity forms a habit in the consumer and the consumer almost the same units regardless of the changes in price. However, demand for non - addictive commodities is price elastic because the consumer easily reduces the amount demanded when prices increase.

7. Level of durability of the commodity/ level of perishability of the commodity/ nature of the commodity i.e. perishable or durable commodity. Demand for durable goods such as cars, furniture tends to be price inelastic because even if the price of such a commodity falls, a consumer may not demand more of that commodity because he already has it. On the other hand, demand for perishable goods is price elastic because slight changes in price bring about big changes in amount demanded.

8. Number of uses of the commodity. Demand for goods having several uses is price elastic. E.g., if the unit of price for electricity increases, consumers use less of it for only vital purposes such as lighting. On other hand, demand for goods having a single or few uses is price inelastic because consumers continue buying the same units at all times regardless of the changes in price.

9. Time period of consumption i.e. short run or long run. In the short run, the demand for a commodity tends to be price inelastic while in the long run, the demand for the commodity is price elastic. This is because in the long run, consumers are able to learn the market conditions and look for substitutes.

10. Possibility of postponement of consumption of the commodity. The demand for commodities whose use can be postponed to a future date is price elastic because small changes in the price force the consumers to postpone consumption and this creates a big change in the quantity demanded. On the other hand the demand for commodities whose use cannot be postponed is price inelastic because even with big changes in price, the amount demanded is so low.

11. Speculation about price changes. When the consumers expect the price of the commodity to fall in future, the current demand tends to be price elastic because consumers easily reduce the amount demanded when the price slightly increases. On the other hand if consumers expect a future price increase, the current demand for the commodity tends to be price inelastic because consumers continue buying even if prices are rising due to fear of purchasing at very high prices in the future.

12. Level of awareness of availability of cheaper goods/ level of advertisement. Demand for highly advertised goods is price inelastic because the persuasive adverts convince the buyers to continue buying the commodity regardless of the changes in price. However, demand for less advertised commodities is price elastic because of the limited awareness of the public about the commodities.

13. Degree/ extent of convenience in acquiring/ accessing the commodity. Demand for commodities that are conveniently accessible is price inelastic whereas demand for those that are difficult to access is price elastic. This is because consumers prefer buying commodities that are within their reach compared to those that are scarce.

NB: From the above factors, we should extract factors leading to **high elasticity of demand(elastic demand)** and those that **lead to low elasticity of demand (inelastic demand)**

USE OF THE CONCEPT OF PRICE ELASTICITY OF DEMAND.

- i. **Guides on taxation policy/ determination of indirect taxes.** High indirect taxes are charged on goods with inelastic demand to collect larger tax revenue because consumers are relatively insensitive to changes in the price while low indirect taxes are charged on goods with elastic demand since consumers of such goods are so sensitive to changes in price.
- ii. **Pricing of commodities.** Knowing PED helps the firm to know whether it would be profitable to raise or lower the price. The producer is likely to incur losses if he increases the price of the commodity with elastic demand while with a commodity with inelastic demand, the producer earns more profits with the increase in price.
- iii. **Guides in wage determination.** A producer pays high wages to labour if the demand the product it produces is inelastic meaning that he can compensate the wages by charging a high price while a producer pays low wages to labour if the demand for the product it produces has elastic demand since he cannot compensated by charging a higher price.
- iv. **Determination of the incidence of the tax.** Incidence of a tax is the final resting place of a tax when it's imposed or the person who ultimately bears the tax burden. The government uses the concept of PED to determine whether it's the producer or consumer who finally bears the burden of the tax. The tax burden is heavily felt by the consumer in a situation where the demand is inelastic while a producer bears the biggest burden when the demand is elastic.
- v. **Guides government on its subsidization policy.** A subsidy is money or grant to a producer or consumer aimed at reducing the cost of production or a good respectively. The government subsidizes more a producer of a commodity with elastic demand while on the side of consumers, gov't subsidizes consumers of a commodity with inelastic demand.
- vi. **Used as a basis of price discrimination by a monopoly producer.** Price discrimination is the policy of charging different prices from different consumers for the same product. In a sub-market where the demand is elastic, more revenue is obtained by charging low

prices while in sub-market where the demand is inelastic, more revenue can be obtained by charging higher prices.

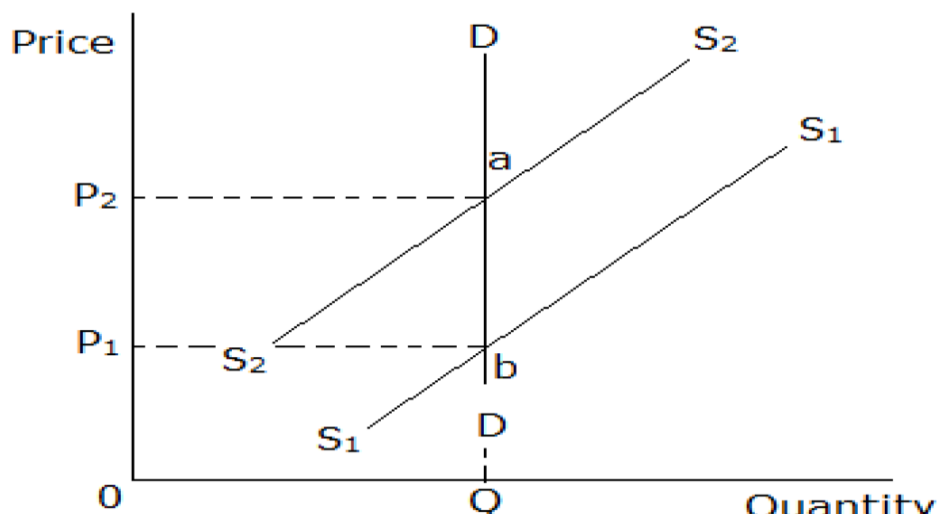
- vii. **Guides the consumer in planning consumption expenditure.** The consumer plans on how to spend his limited income depending on the prices of goods in the market, for example goods with inelastic demand are highly priced hence expenditure on them is greater than those with have elastic demand since their prices are low.
- viii. **Guides on sales promotion.** The concept of PED provides the guideline to the producer for the amount to be spent on advertisement. Inelastic demand for the commodity calls for low expenditure on advertisement i.e. only informative advertisement is required while elastic demand leads to high expenditure on advertisement in order to increase sales.
- ix. **Determination of goods and services to be produced by government.** Industries whose products have inelastic demand, such as UMEME, NWSC are usually owned by the government in order to provide essential commodities at affordable prices.
- x. **Determination of gains form international trade.** The rate at which one country's exports are exchanged for imports from another country is determined by the relative elasticity of demand of the two countries for each other's products. A country gains if her exports are inelastic in demand and her imports have elastic demand.
- xi. **Used in the devaluation policy.** Devaluation refers to the deliberate act of the government of reducing the value of the country's currency in relation to other currencies mainly to make exports cheaper. The policy can only be successful if the price elasticity of demand for both imports and exports is elastic.

NB: Categorise these uses into **gov't**, **consumers** and **producers**

ELASTICITY AND INCIDENCE OF A TAX

Incidence of a tax refers to the final resting place of a tax and it falls on either the producer or the consumer or a combination of the two depending on the price elasticity of demand.

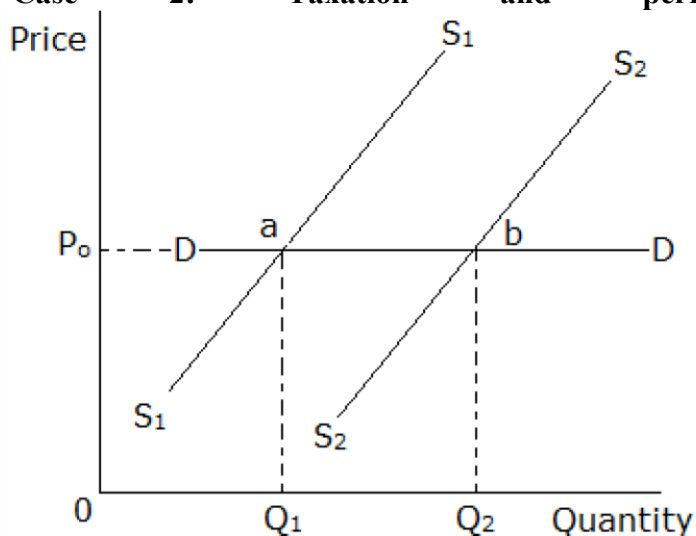
Case 1: Taxation and perfectly inelastic demand



ab = total tax paid by the consumer.

When demand is perfectly inelastic, the total tax is paid by the consumer.

Case 2: Taxation and perfectly elastic demand.

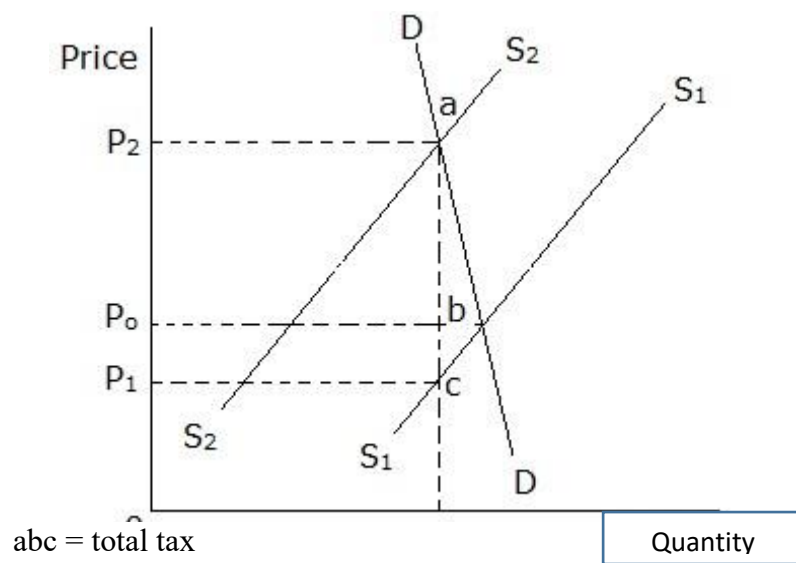


ab = total tax paid by the producer.

When demand is perfectly elastic, the total tax is paid by the producer.

Case 3: Taxation and inelastic demand

When demand is inelastic, the consumer pays more tax than the producer as illustrated below.

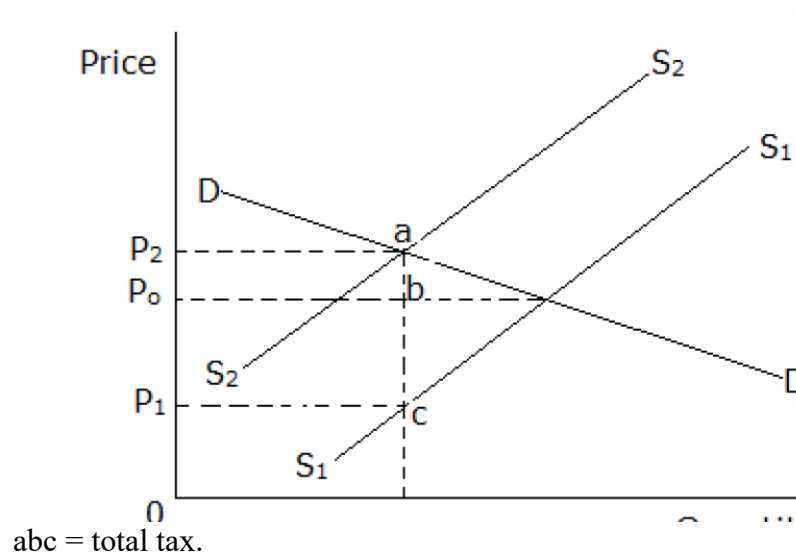


$ab = \text{tax paid by the consumer}$

$bc = \text{tax paid by the producer}$

Case 4: Taxation and elastic demand

When demand is elastic, the producer pays more tax than the consumer.

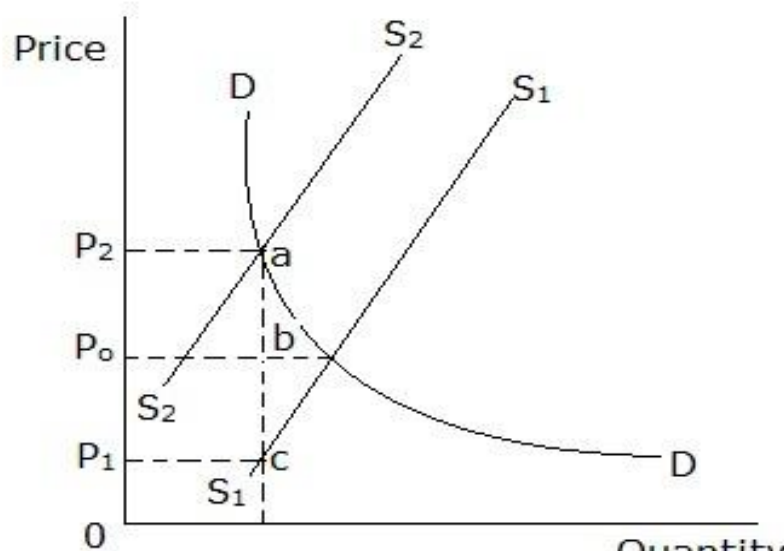


$ab = \text{tax paid by the consumer}$

bc = tax paid by the producer

Case 5: Taxation and unitary demand

When demand is unitary, the tax is shared equally between the consumer and the producer.



abc = total tax

ab = tax paid by the consumer

bc = tax paid by the producer

INCOME ELASTICITY OF DEMAND

Income elasticity of demand refers to the degree of responsiveness of the quantity demanded of a commodity to the changes in the income of the consumer.

Income elasticity has been argued as measuring how much a change in consumer's affects the demand for such goods or services if its prices and all other factors remained constant, below is a formula for calculating income elasticity of demand.

$$\text{Income elasticity of demand (YED)} = \frac{\text{proportionate or change in quantity demanded}}{\text{proportionate or change in income of the consumer}}$$

OR

Income elasticity of Demand = $\frac{\text{percentage change in quantity demanded of the commodity}}{\text{percentage change in income of the consumer}}$

$$YED = \frac{\Delta Q}{\Delta Y} \times \frac{Y}{Q}$$

Interpretation of income elasticity of demand.

The nature of the commodity can be identified depending on the value of the Y.E.D obtained using the above formula. The summary can be described using the table below;

commodity	reason
Normal good	Coefficient of elasticity (YED) is positive
Necessity	Coefficient of elasticity (YED) is zero
Inferior good	Coefficient of elasticity (YED) is negative

Example; Given that an increase in the consumer level of income from shs.25000 to shs.40000 led to a decrease in quantity demanded of commodity X from 780 units to 600 units. Calculate the income elasticity of demand.

$$YED = \frac{\text{percentage change in quantity demanded of the commodity}}{\text{percentage change in income of the consumer}}$$

$$= \frac{\Delta Q}{\Delta Y} \times \frac{Y}{Q}$$

$$= \frac{600-780}{40000-25000} \times \frac{25000}{780}$$

$$= \frac{-180}{15000} \times \frac{25000}{780}$$

$$= -0.385$$

Example two;

Given that an increase in the consumers income from shs.200000 to shs.600000 led to a decrease in the quantity demanded of commodity x from 10 to 5 units; calculate the income elasticity of demand.

Trial questions

1. Given that an individual's income increased from shs 50,000 to shs 80,000 per month and this led to an increase in the demand for the commodity by 10%. Calculate the income elasticity of demand and comment on the type of the good.
2. Study the table below showing income and quantity demanded of commodity X and answer the questions that follow.

Income (Ug. Shs)	Quantity demanded of X (kg)
10,000	50
30,000	20

- a) Calculate the income elasticity of demand for commodity X.
- b) What type of commodity is X? Give a reason for your answer.

USES OF INCOME ELASTICITY OF DEMAND

1. Forecasting Future Demand

As an economy grows or shrinks, consumer incomes change. YED allows businesses to predict how much of their product they will need to produce in the future. If a country's national income is rising, firms producing goods with a high positive YED (like cars or electronics) should plan to increase production. Conversely, if incomes are falling, they must scale back to avoid an oversupply.

- **Example:** A real estate developer in Uganda might look at rising middle-class incomes to decide whether to build more luxury apartments or affordable housing units.

2. Guiding Government Taxation Policies

Governments use YED to decide which goods to tax heavily to raise revenue without hurting the poor. Since **luxuries** have a high YED (demand increases significantly as people get richer), taxing them ensures that the tax burden falls on the wealthy. **Necessities** (like salt or soap) have low YED because people buy them regardless of income; therefore, taxing them heavily would unfairly affect low-income earners.

- **Example:** The government may place a higher "excise duty" on expensive perfumes or high-end SUVs while keeping taxes low on basic foodstuffs.

3. Determining the Nature of Goods

YED is the standard tool for classifying products. If YED is **positive**, the good is **Normal** (demand rises as income rises). If YED is **negative**, the good is **Inferior** (demand falls as income rises because people switch to better alternatives).

- **Example:** If people stop buying second-hand clothes (inferior) and start buying new clothes (normal) as their salaries increase, YED helps economists identify which category these goods fall into.

4. Formulating Marketing Strategies

Businesses use YED to identify their "target market." A firm producing luxury items (high YED) will save money by advertising in places where high-income earners gather, such as golf clubs or business magazines. Firms producing goods with low YED will focus on mass-market advertising because almost everyone needs their product regardless of their pay grade.

- **Example:** A company selling premium Swiss watches will advertise in airline business-class magazines, while a company selling laundry detergent will advertise on national radio to reach everyone.

5. Determination of Prices

YED helps a firm decide if a price change will be effective. If consumer incomes fall, the demand for **income-elastic goods** (luxuries) drops sharply. To prevent a total loss in sales, the firm might reduce its prices to make the product more attractive to people with tighter budgets, helping to maintain total revenue through a higher volume of sales.

- **Example:** During an economic recession, a high-end hotel might lower its room rates or offer "special discounts" to encourage locals to visit, compensating for the fact that people have less disposable income to spend on travel.

CROSS ELASTICITY OF DEMAND.

Cross elasticity of demand is the measure of the degree of responsiveness of the quantity demanded of one good to changes in the price of another good.

Thus CED measures the actual change in the demand for commodity A due to change in price of commodity B.

It's also a measure of the percentage change in the quantity demanded of a commodity to percentage change in price of another commodity

Its measured by formula;

$$CED = \frac{\text{proportionate change in quantity demanded of the commodity X}}{\text{proportionate change in price of related good Y}}$$

$$C.E.D = \frac{\Delta Q_x}{\Delta P_y} \times \frac{P_y}{Q_x}$$

Where ΔQ_x = change in quantity demanded of commodity X

ΔP_y = change in the price of commodity Y,

P_y = original price of commodity Y

Q_x = original quantity of commodity X

When given two commodities, we can tell their relationship depending of the value of C.E.D calculated.

Interpretations of the cross elasticity of demand.

Relationship between the commodities	Reason
Substitute goods	Coefficient of elasticity is positive.
Non-related commodities	Coefficient of elasticity is zero

Complements/ complementary goods	Coefficient of elasticity is negative
----------------------------------	---------------------------------------

Note;

- If goods are substitutes, it means that an increase in price of one leads to an increase in demand of the other and viceverser.
- If goods are complements, it means that an increase in price of one leads to a decrease in demand of the other.

Examples;

Given that an increase in price of commodity x from shs.2750 to shs.3300 resulted into a change in demand of commodity Y from 820 to 740 units. Calculate the CED.

$$CED = \frac{\text{proportionate change in quantity demanded of the commodity Y}}{\text{proportionate chnage in price of related good X}}$$

$$= \frac{\Delta Q_y}{\Delta P_x} \times \frac{P_x}{Q_y}$$

$$= \frac{740-820}{3300-2750} \times \frac{2750}{820}$$

$$= \frac{-80}{550} \times \frac{2750}{820}$$

$$= \frac{-4}{1} \times \frac{5}{41}$$

$$= -0.49.$$

Example ii;

Calculate the cross elasticity of demand if the price of commodity P falls by 20% per unit and quantity demanded of commodity Q increases from 20 to 30 units.

Trial questions

1. Given that an increase in the price of commodity X from Shs 1500 to Shs 1800 resulted into a change in quantity demanded for commodity Y from 600 units to 570 units;
 - a) Calculate the cross elasticity of demand
 - b) State the relationship between commodities X and Y.
2. If the price of commodity X falls from Ug. Shs 2,000,000 to Ug. Shs 1,600,000 per unit and the quantity demanded of commodity Y increases from 40,000 to 60,000 units,
 - a) Calculate the cross elasticity of demand.
 - b) State the relationship between commodities X and Y

USES OF CROSS ELASTICITY OF DEMAND

1. Used in the Classification of Goods

CED is the primary mathematical tool used to identify how two goods relate to each other in the eyes of the consumer.

- **Substitutes (Positive CED):** When the CED is positive, it means an increase in the price of one good leads to an increase in the demand for the other. This happens because consumers switch from the now-expensive good to a cheaper alternative. For example, if the price of **Coca-Cola** rises, consumers may switch to **Pepsi**, causing Pepsi's demand to rise.
- **Complements (Negative CED):** When the CED is negative, an increase in the price of one good leads to a decrease in the demand for the other. These goods are used together; if one becomes expensive, the "package" becomes expensive. For example, if the price of **cars** increases, the demand for **petrol** may fall because fewer people are buying and driving cars.
- **Unrelated/Independent Goods (Zero CED):** If the CED is zero, it means a price change in one good has no effect on the demand for the other, such as the price of shoes and the demand for salt.

2. Used in Classification of Market Structures

Economists use CED to determine the level of competition and the type of market structure a firm operates in.

- **Monopoly (Zero or almost zero CED):** In a monopoly, a firm produces a unique product with no close substitutes. Because there are no alternatives for consumers to switch to, the CED is near zero. The firm has high market power because its customers cannot react to price changes by buying a similar product elsewhere.
- **Perfect Competition (Infinite CED):** In this market, products are identical (homogeneous). If one firm raises its price even slightly, consumers will immediately switch to another firm's product. This means the cross-elasticity between firms' products is infinite, as they are perfect substitutes.
- **Oligopoly/Monopolistic Competition (High Positive CED):** In these markets, there are several close substitutes. A change in price by one firm (like MTN) will significantly impact the demand for its competitor (like Airtel).

3. Used in Formulation of Pricing Policy

For large firms that produce a "product line" or multiple related items, CED is essential for deciding how to price one item without hurting the sales of another.

- **Managing Substitutes:** Using your example of **Jesa Dairy**, if they produce both Strawberry and Vanilla yoghurt, these items are close substitutes. If the firm increases the price of Strawberry yoghurt, CED tells them that many customers will simply switch to Vanilla. If Jesa owns both, they might not lose total revenue, but if they only produced one, they would lose customers to a competitor.
- **Managing Complements:** A firm might intentionally keep the price of one good **low** to drive up the demand for a complementary good that has a higher profit margin. For example, a printer manufacturer might sell the **printer** at a low price (knowing it has a negative CED with ink) to ensure a high and constant demand for their expensive **ink cartridges**.

- **Avoiding "Cannibalization":** Firms use CED to ensure that a new product doesn't just take away sales from their own existing products. By calculating CED, they can price products in a way that attracts new customers rather than just moving existing customers from one of their brands to another.

THE CONCEPT OF ELASTICITY OF SUPPLY

Elasticity of supply refers to the measure of the degree of responsiveness of quantity supplied of a commodity to changes in the factors affecting supply.

Price elasticity of supply (PES) refers to the measure of the degree of responsiveness of quantity supplied of the commodity to changes in its own price.

$$\text{PES} = \frac{\text{percentage change in the quantity supplied}}{\text{percentage change in price.}}$$

$$= \frac{\Delta Q}{\Delta P} \times \frac{P}{Q}$$

Example;

Calculate the price elasticity of supply given that an increase in the price of a commodity x from shs.2000 to shs.25000 led to increased supply from 10000tons to 11000tons.

$$\text{PES} = \frac{\text{percentage change in the quantity supplied}}{\text{percentage change in price.}}$$

$$= \frac{\Delta Q}{\Delta P} \times \frac{P}{Q}$$

$$= \frac{11000-10000}{2500-2000} \times \frac{2000}{10000}$$

$$= \frac{1000}{500} \times \frac{2000}{10000}$$

$$= \frac{1}{1} \times \frac{4}{10}$$

$$= \mathbf{0.4}$$

NOTE; the co-efficient of PES is always positive because there is a direct relationship between price and quantity supplied.

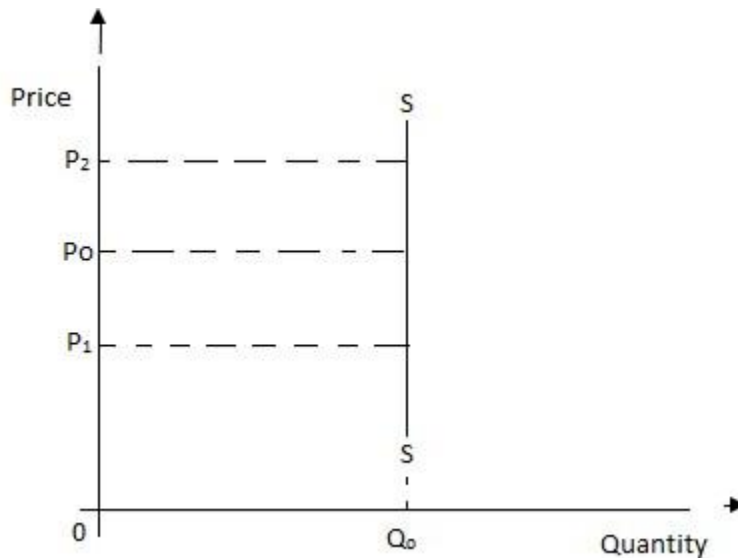
Exercise

1. An increase in price from 60,000 to 90,000 led to an increase in quantity supplied of commodity by 50%. Calculate the price elasticity of supply.
2. An increase in price from shs 40/= to 400/= led to an increase in the quantity supplied of a commodity from 30kgs to Xkgs. If the price elasticity of supply is 2, find the value of X.

INTERPRETATION OF PRICE ELASTICITY OF SUPPLY

1. Perfectly inelastic supply ($P.E.S = 0$)

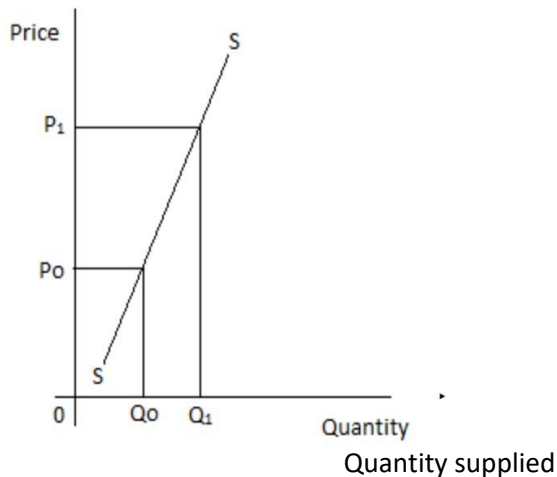
This is where price changes do not affect the quantity supplied i.e. quantity supplied remains constant at different price levels.



2. Inelastic supply ($0 < P.E.S < 1$)

This is where a big change in price results in into a small change in the quantity supplied. This is common with agricultural products that take long to be produced.

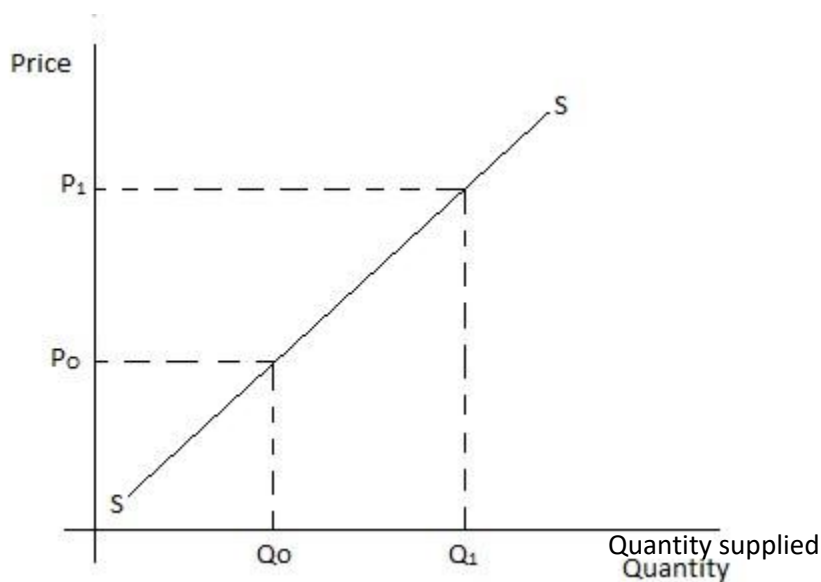
A bigger change in price from P_0 to P_1 leads to a small change in quantity supplied i.e. From Q_0 to Q_1



A bigger change in price from P_0 to P_1 leads to a small change in quantity supplied i.e. From Q_0 to Q_1

3. Unitary supply ($P.E.S = 1$)

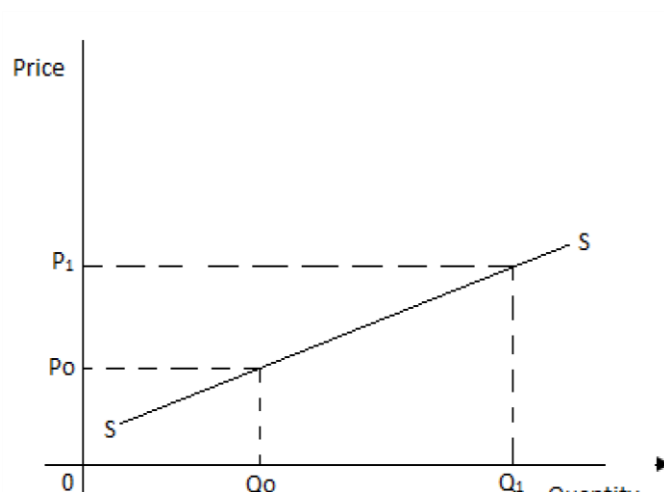
This is where a change in price results into an equal change in the quantity supplied. This is an ideal situation which does not occur in reality.



A change in price from P_0 to P_1 results into an equal change in quantity supplied from Q_0 to Q_1

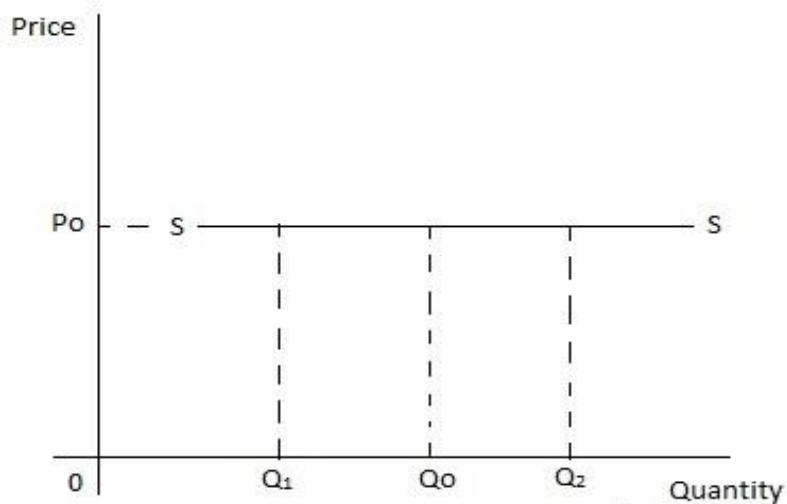
4. Elastic supply ($0 < P.E.S < \infty$)

This is where a small change in price results into an equal change in the quantity supplied.



5. Perfectly elastic supply

In this case, price of a commodity is constant at all levels of the quantity supplied. This situation does not exist in the real world.



THE DETERMINANTS OF ELASTICITY OF SUPPLY.

- 1) **Gestation period/ length of the production period.** A commodity with a shorter gestation period is price elastic because the supply can easily be increased when the price rises within a short period of time while a commodity with a long gestation period like agricultural products have inelastic supply because it takes more time for the producer to increase supply as the prices increases.
- 2) **Nature of the commodity in terms of durability/ perishability.** Goods which are durable have elastic supply as more of it is just drawn from the stores and put on market in response to a rise in prices while perishable goods like jackfruit, tomatoes, supply is inelastic since such commodities cannot be stored for long and supplied as the prices increase.
- 3) **Level of taxation and subsidization.** Favourable government policy of low taxation and high subsidization makes supply elastic since it lowers the cost of production which enables producers to increase output in response to an increase in prices while unfavourable government policy of high taxation and low subsidization makes supply inelastic. This is because it leads to high cost of production which makes it difficult to increase output even when the price increase.
- 4) **Natural factors.** Favourable natural factors makes supply of agricultural products elastic because more output can be put on market in response to rise in prices while unfavourable natural factors make supply of agricultural products inelastic since less can be put on market in response to an increase in price.
- 5) **Political climate.** Favourable political climate makes supply of a commodity elastic since production is encouraged due to confidence among investors in regard to national security while unfavourable political climate makes supply of a commodity inelastic since production is discouraged as producers are scared of their life and property.
- 6) **Cost of production.** Low cost of production makes supply of a commodity elastic since it makes it easy to increase production by employing more factors of production in response to an increase in price while a high cost of production makes supply inelastic since it becomes difficult for producers to higher more factors of production in order to increase supply.
- 7) **State of technology used in production.** Use of simple and efficient technology makes supply elastic since it is easy to increase output of the commodity while use of complicated/

complex technology makes supply inelastic it becomes difficult to increase output in a short run as price increases.

- 8) **Number of firms/ producers producing the commodity.** Existence of many firms/ producers of a commodity makes supply of a commodity elastic since output can easily be increased on market in response to an increase in the price while existence of few producers of a commodity makes supply inelastic since output cannot easily be increased on market in response to an increase in the price of the commodity.
- 9) **Objective of the firm.** Sale maximization objective of the firm makes supply elastic. This is because more of the commodity can be produced in response to an increase in price while profit maximization objective of the firm makes supply inelastic because the producer still produces little even as the price increases in order to cultivate more profits.
- 10) **Bulkiness of the commodity.** A commodity that is more bulky is difficult to transport from areas of plenty to areas of scarcity and this makes supply inelastic in such areas less bulky commodities are easy to transport from areas of plenty to areas of scarcity and this makes supply elastic in such areas.
- 11) **Level of infrastructural development.** Well-developed infrastructure makes supply elastic since it makes it easy to transport the commodity from areas of plenty to areas of scarcity while poorly developed infrastructure makes supply inelastic since it makes it difficult to transport the commodity from the area of plenty to areas of scarcity.
- 12) **The market size.** An increase in market size makes supply elastic since it makes producers to produce more of the commodity in order to satisfy the increased market while a decrease in market makes supply inelastic since it discourages increase in production of the commodity.
- 13) **Availability of co-operant factors.** Increased supply of co-operant factors in subsequent quantity and quality leads to production of more of the commodity and this makes supply elastic while reduction in the amount of the co-operant factors makes supply inelastic since it makes increase in the supply of the commodity difficult.
- 14) **The price of jointly supplied product.** Increase in the price of a jointly supplied good/ product makes producers find it profitable to increase the production and there is increase in supply, thus making supply elastic while decline in price of jointly supplied product leads to decrease in supply the jointly supplied product making the supply inelastic.

15) **The price of competitive supplied product.** Decrease in the price of competitively supplied product leads to increase in supply as the production of a given a commodity becomes more profitable in comparison to the substitute commodity hence making supply elastic while increase in the price of a competitively supplied commodity makes the substitute more profitable in comparison to the given commodity. As a result, the firm shifts its limited resources from the production of the given commodity to production of other goods and this makes supply of the given commodity inelastic.

IMPORTANCES OF PES/ USEFULNESS/ PRACTICAL APPLICATIONS OF PES.

- 1) PES is used in the devaluation policy which is useful in solving the BOP deficits especially where the exports and imports face elastic supply.
- 2) PES is used in determining the incidence of a tax. Producers stand to pay heavier tax burden than the consumer when the PES is less than PED.
- 3) It's useful in the government taxation policy. I.e. the government generates more tax revenues by taxing more of the production of a commodity with inelastic supply.
- 4) It's used in determining the wage rate for labour. labour which has elastic supply is usually paid low wages compared to labour which has inelastic supply(skilled labour Vs unskilled labour)
- 5) PES is used in determining the price and revenue of a firm. Commodities which are inelastic in supply should be sold at higher prices to earn more revenue while commodities with elastic supply should be sold at low price so as to avoid making losses.
- 6) It helps the government to decide which commodity to produce for international trade in order to fetch more foreign exchange. More foreign exchange is earned when the commodity exported is supply elastic.

MEASURES THAT CAN BE TAKEN REDUCE THE DEFECTS OF PRICE OF MECHANISM.

The price mechanism, though important in allocating resources, has several weaknesses such as income inequality, consumer exploitation, and failure to provide merit goods. The following measures can be adopted to correct these defects:

1. Adoption of a Progressive Taxation System. A progressive tax system is one where people with higher incomes pay a higher rate of tax than those with lower incomes. This helps to **reduce income inequalities** by redistributing income from the rich to the poor. The government can then use the tax revenue to provide social services such as education and healthcare, improving welfare in society.

2. Control or Discourage Monopoly Power. The government can pass **anti-monopoly laws** to prevent the formation or abuse of monopoly power. Monopolies tend to charge high prices, restrict output, and exploit consumers. By controlling them, the government ensures **fair competition**, reasonable prices, and better quality goods.

3. Establishment and Strengthening of Bureau of Standards. A bureau of standards ensures that goods produced meet **required quality and safety standards** before reaching the market. This protects consumers from substandard or harmful products and promotes **fair trade practices**.

4. Encouraging Consumer Associations and Cooperatives. Consumer associations help to **educate and sensitize consumers** about their rights and how they may be exploited. They can also bargain collectively for better prices and quality goods, thus reducing exploitation by traders.

5. Subsidizing Weak or Essential Producers. The government can provide subsidies (financial support) to firms producing **essential or merit goods** such as food, medicine, and education services. This reduces the cost of production, enabling firms to sell at **lower and affordable prices**, benefiting consumers.

6. Establishment of Environmental Regulatory Bodies.

The government can create laws and institutions to protect the environment. This helps to control **negative externalities** such as pollution by ensuring proper waste disposal, conservation of natural resources, and protection of wetlands.

7. Licensing of Business Enterprises. Businesses can be required to obtain licenses before operating. This helps to **regulate entry into industries**, avoid unnecessary duplication of businesses, and ensure that only qualified and capable firms operate in the market.

8. Nationalization of Monopoly Firms. The government may take over private monopoly firms and run them as **state enterprises**. This ensures that essential goods and services are provided at **fair and affordable prices** rather than for profit maximization.

9. Economic Planning. The government can plan economic activities to guide **resource allocation** in both the private and public sectors. Planning helps to correct market failures, promote balanced development, and ensure that important sectors like agriculture and industry are developed.

10. Price Controls. The government can fix prices through:

- **Maximum prices (price ceilings)** to protect consumers from high prices.
- **Minimum prices (price floors)** to protect producers from very low prices.

For example, setting a maximum price on essential goods prevents exploitation during shortages.

11. Subsidizing the Poor and Vulnerable Groups. The government can give financial assistance or social benefits to the poor. This increases their **purchasing power**, enabling them to access basic goods and services which they would otherwise not afford.

12. Rationing of Scarce Commodities. Rationing involves limiting the quantity of goods each consumer can buy. This ensures **fair distribution of scarce resources**, especially during shortages, so that everyone gets a share.

13. Imposition of Heavy Taxes on Monopoly Firms. High taxes on monopoly firms reduce their **excess profits** and discourage exploitative practices. It also generates revenue for the government, which can be used for public welfare.

Conclusion

By applying these measures, the government can correct the weaknesses of the price mechanism and ensure a more **equitable, efficient, and socially desirable allocation of resources**.

REASONS OF INTERFERING WITH THE WORKING OF PRICE MECHANISM.

1. To control the economic instabilities. The government intervenes with the working of price mechanism to ensure stability in prices of goods and services and incomes of producers.
2. To guard against unemployment. Price mechanism causes unemployment by pushing out inefficient firms out of production. Therefore government intervenes with an aim of ensuring availability of jobs to its citizens.
3. To check on monopoly power in the economy. The major aim of this is to fight dangers associated with private monopoly like charging high prices.
4. To minimize income inequality. This is because price mechanism leads to income disparity within the population as those with highly demanded resources earn more than those with resources that are less demanded.
5. To control or check on consumer exploitation. Profit-hungry traders exploit consumers by charging high prices, sale of fake products. Such trade malpractices call for government intervention in order to protect consumers from exploitation.
6. To ensure optimal resource utilization in the country. This is because price mechanism leads to resource wastage because of stiff competition that makes producers just allocate resource of profit motives.
7. To cater for rapid structural changes. Price mechanism doesn't cater for structural changes for example damaged roads, occurrence of floods, landslides because they are not profitable and hence government comes in to respond to such changes.
8. To minimize social costs. Price mechanism concentrates more on attainment of private interests and doesn't put into consideration public interests. Hence the government comes in to strike the balance between the two.

9. To provide public goods. Price mechanism doesn't allocate resources into the production of public goods like public hospitals, schools etc. and hence government comes in to provide such goods to its people since they need them.
10. To encourage production of consumer goods and merit goods. Price mechanism in most cases concentrates on production of luxurious goods which are expensive and cannot be affordable to the poor.

NB. This part of the work will be important when you integrate it with economic systems (free enterprise economic system.

AGRICULTURAL PRICE FLUCTUATIONS.

Price fluctuations refer to changes or instabilities in prices of goods and services especially prices agricultural products.

CAUSES OF FREQUENT INSTABILITIES IN THE PRICES OF AGRICULTURAL PRODUCTS IN AN ECONOMY.

1. Many producers making planning difficult. Farmers sometimes over supply agricultural products forcing prices to fall. They react by lowering the supply forcing prices to increase.
2. Bulkiness of agricultural products making transportation difficult. Some agricultural products like jackfruit, cassava, potatoes are bulky and hence not easy to transport them from areas of plenty to areas of scarcity. This makes prices in areas of plenty to fall while in areas of scarcity, prices increase.
3. Long gestation period. Agricultural products take long to mature. In the short run or before harvest, there is shortage of agricultural products in the market making their prices to increase while in the long run or after harvest, their supply in market increases making their prices to fall.
4. Natural factors affecting agricultural output. Favorable natural factors result into high output and supply of agricultural products making their prices fall while unfavorable natural result into low output and low supply of agricultural products leading to shortage hence leading to an increase in prices.
5. High perishability of agricultural products making storage difficult. Agricultural products like tomatoes, jack fruit, oranges and vegetables are highly perishable. This makes their storage for a long time difficult. Therefor farmers are forced to sell the products

immediately after harvest making their prices fall. This leads to shortages in the near future forcing their prices to increase.

6. Divergence between planned and actual output. In situations where the actual output is more than the planned output, supply increases in the market making prices fall while when the planned output is more than the actual output, there is shortage in the market making prices increase.
7. Poor surplus disposal system/ poor state of infrastructure. Due to poor transport system, it's difficult to dispose off surplus from areas of plenty to areas of scarcity. This makes prices fall in areas of plenty while in the areas of scarcity, prices increase.
8. Weak bargaining power in the world market. Producers have no chance to determine prices on the world market and hence when more output is supplied in the world market, buyers fix a low price causing prices to fall and when less is supplied, buyers fix a high price causing prices to increase.
9. Low price elasticity of demand for agricultural products. I.e. there is more or less the same amount of agricultural products demanded when price increases or decreases. Hence when farmers supply a lot in the market prices reduce and when less is supplied, prices rise.
10. Lack of cooperation among producers of agricultural products. Farmer's failure to adhere to quotas given leads to over production and hence surplus causes a fall in prices but when there is limited supply, the prices rise.
11. Changing/ varying cost of production. Farmers incur costs in form of buying farm fertilizers, hiring tractor services. Increased cost of production leads to increase in prices of agricultural products while reduction in the cost of production leads to more output produced hence causing a decrease in the prices of agricultural products.
12. Competition from artificial fibers/ synthetic fibers. Natural fibers like cotton face stiff competition from synthetic fibers like polyester, silk. Some buyers prefer synthetic fibers to natural. Hence they are outcompeted and this makes their prices fall while when the supply of synthetic fibers reduces, buyers resort to natural fibers which results into an increase in their prices.

EFFECTS OF AGRICULTURAL PRICE FLUCTUATIONS IN UGANDA

1. It results into unstable export earnings.in seasons when the prices are high, export earnings are equally high compared to when the prices are low hence instability in export earnings.
2. Planning based on expected earnings becomes difficult. Continuous price instabilities make it difficult to predict what is to be earned from selling the agricultural products. This complicates planning by the government in case the plans are to be implemented by export earnings from agriculture.
3. It leads to instabilities in revenues of the government from the agricultural sector. Falling prices of agricultural products result into reduced government revenue from the agricultural sector while rise in prices results into increase in the revenues from the agricultural sector.
4. Unstable balance of payment position. This is because high export earnings in a certain season result into improvement into in the balance of payment while low export earnings in a certain season make the balance of payment position unfavorable. This results into BOP instabilities.
5. Unstable incomes of farmers. Producers of agricultural products face a problem of unstable incomes from one period to another. In seasons of high prices, their incomes are high while in seasons of low prices, their incomes are equally low.
6. Unstable terms of trade. Terms of trade refer to the rate at which the country's exports are exchanged for her imports. When the prices of the agricultural products are high, the terms of trade become and better while in another period when the prices are low, the terms of trade are poor.
7. Worsens the problem of income inequality. Decline in prices of the agricultural products in some seasons, farmers earn less from their activities compared to other people employed in activities like manufacturing. This creates an income gap between farmers and those involved in such activities.
8. Investment in the agricultural sector becomes uncertain. This is because of the low returns realized by investors of agriculture especially in periods when the prices reduce.
9. It worsens the problem of seasonal unemployment. This is because farmers at times become less interested in agriculture which renders them unemployed.

10. It encourages rural urban migration and its associated disadvantages. As incomes in agriculture become unreliable, many farmers get fed up and therefore decide to move to towns where they expect to find jobs that can pay them stable incomes.

MEASURES THAT SHOULD/CAN/MAY BE TAKEN TO STABILIZE THE PRICES OF AGRICULTURAL PRODUCTS.

1. Provide affordable credit facilities to farmers. This helps the farmers to buy the necessary farm implements. This can lead to stable supply thus stable prices.
2. Reduce taxes on farm inputs. This may reduce the cost of production thus encouraging large scale production hence reducing scarcity and stabilizing prices.
3. Undertake diversification of agriculture. This can reduce over reliance on a few crops and activities. This may stabilize incomes of producers and also encourage continuous production.
4. Encourage formation of producer/ marketing co-operatives. This can stabilize prices of the agricultural products by buying off surplus in times of over production and avail them in near future when there is scarcity.
5. Join/ strengthen/ set up international commodity agreements. The government should join international commodity agreements like the international coffee agreements in order to control supply of coffee exports and ensure stable prices on the world market.
6. Undertake market expansion .and diversification. This can be done through joining regional economic integration or signing trade protocols. This can widen the market of agricultural prices and stabilize the prices of agricultural products.
7. Adopt a strong quota system on exports of agricultural products. There should be a limit on the amount of agricultural products put on market by farmers to avoid surplus out especially during periods of bumper harvest. This reduces market flooding hence stabilizing the prices.
8. Encourage setting up/ set up agro-based industries. This help to process agricultural products and hence reduce on their perishability.
9. Encourage future trade trough contract farming. Producers and buyers can sign agreements specifying the amount, quality and price of the commodity to be supplied at a future date. In this way, changes in supply doesn't affect the agreed upon price hence this can help to stabilize the prices.

10. Adopt modern farming techniques like irrigation and mechanization i.e. use of tractors. This encourages production through the year thus reducing on the problem of scarcity hence stabilizing prices.
11. Improve on the state of infrastructure like roads. This helps to dispose off surplus from areas of production to areas of scarcity and this can help to stabilize prices.
12. Improve on the storage facilities. This can be done through the construction of granaries and silos in order to store surplus during the periods of bumper harvest for products like cereals. This makes them available in the near future hence ensuring price stability.
13. Use of stabilization fund. The fund can be used in the procurement directly from farmers directly at farm gate prices and distributing the products to consumers at relatively fair prices.

NB. Price support refers to the buying of the excess output arising from fixing a minimum price by the government to ensure that the success of the policy.

THE THEORY OF CONSUMER BEHAVIOUR

A consumer is either an individual who uses goods and services to satisfy his wants, a household or government. A consumer is said to be rational i.e. whose major aim is to maximize utility.

Basic approaches to consumer behaviour

A. Cardinal utility theory

Utility is the satisfaction or pleasure derived from consumption of goods and services. It is assumed that, a consumer can know exactly how much satisfaction is derived from consumption of a good and such satisfaction is measured subjectively in units known as utils.

Assumptions of cardinal utility

1. It assumes that a consumer is a rational being who calculates and measures, chooses and compares utilities of different units of goods thus maximizing utility.
2. It assumes that a consumer possesses perfect knowledge of the choices open to him.
3. It assumes that all commodities available to a consumer are perfectly divisible into smaller units.
4. It assumes that as more a single commodity is consumed, total utility increases, reaches maximum level and then falls.
5. It assumes that there are no perfect substitutes, and that utilities are measurable in terms of money.

Categories of utility

1. **Total utility.** Total utility is the total satisfaction derived from consuming all different units of a given commodity in a particular period of time. For example, when a consumer buys apples, he receives them in units of 1, 2, 3, and 4. Two apples have more utility than one apple, three apples have more utility than two apples, and four apples have more utility than three apples.
2. **Marginal utility.** Marginal utility is the additional satisfaction derived from consumption of an extra unit of a commodity in a particular period of time. For example, the total utility of two apples is 35 utils, and when a consumer consumes the third apple total utility becomes 45 utils. Therefore, the marginal utility of the third apple is 10 utils ($45 - 35 = 10$). Marginal utility is given as:

$$\text{Marginal utility} = \frac{\text{Change in total utility}}{\text{Change in quantity of a good}}$$
3. **Marginal utility of income;** is the additional satisfaction derived from expenditure of an extra unit of income on goods and services.
4. **Marginal utility of money:** this is the change in total satisfaction derived from money that results from one unit of change in the quantity of money.

Table showing the relationship between total utility and marginal utility

Units of apples	Total utility	Marginal utility
0	0	-
1	20	20
2	35	15
3	45	10
4	50	5
5	50	0
6	45	-5
7	35	-10

The units of apples which a consumer chooses are in descending order of their utilities. The first apple is the best out of the lot available to him and hence gives him the highest satisfaction measured as 20 utils. The second apple is naturally the second best with lesser amount of utility than the first and has 15 utils.

Diagram showing the relationship between total utility and marginal utility

- i. When total utility is increasing, marginal utility is decreasing
- ii. When total utility is at maximum i.e. point X (satiety/bliss point), marginal utility is at zero i.e. point Y.(point of saturation)
- iii. When total utility starts falling but still positive, marginal utility goes into negative (disutility)

THE LAW OF DIMINISHING MARGINAL UTILITY

The law of diminishing marginal utility states that as more and more units of a commodity are consumed, the satisfaction derived from each additional unit diminishes. The law of diminishing marginal utility is based on the following assumptions:

- It assumes that there should be a single commodity with homogeneous units wanted by an individual consumer.
- It assumes that there should be continuity in consumption of a commodity i.e. units of a commodity should be consumed in succession at a particular time.
- It assumes that there should be no change in taste, habit and income of a consumer. A change in any of the mentioned factors is likely to increase rather than diminish utility
- .It assumes that prices of different units of a commodity should remain the constant.
- It assumes that a consumer should be rational i.e. with a calculating mind, aims at maximizing utility.
- It assumes that all units of a commodity are of a standard size e.g. a sizeable glass to quench thirst and not a spoon.
- It assumes that a commodity should be divisible to allow successive consumption of a commodity.
- It assumes that the commodity should be of an ordinary type i.e. not superior good or goods of ostentation or addictive goods.

IMPORTANCE OF THE LAW OF DIMINISHING MARGINAL UTILITY

1. It explains the phenomenon in the value theory that price of a commodity falls when its supply increases, because with increase in stock of a commodity marginal utility diminishes.
2. The principle of progressive of taxation is based on this law. As a person's income increases, his/her rate of tax rises because marginal utility of money to him/her falls with rise in income.
3. It explains the diamond-water paradox of Smith. Because of its scarcity, diamond possesses a high marginal utility and therefore commands high price, since water is relatively abundant, its marginal utility is low, it commands low price yet is more useful than diamond.
4. It helps in bringing variety in production and consumption since consumption of the same good brings about boredom, hence its utility diminishes thus the desire for variety

LIMITATIONS OF THE LAW OF DIMINISHING MARGINAL UTILITY

1. It does not apply to commodities like diamond or hobby goods like paintings, stamp collection whose satisfaction increases as more is consumed e.g. the utility of additional paintings is greater than earlier pieces bought.
2. It does not apply to indivisible durable commodities e.g. T.V sets, furniture etc whose consumption extends over a long period of time.

It does not apply for habitual or addictive commodities e.g. cigarettes, alcohol, opium, etc, whose marginal utility may not diminish instead the more one takes, the more he/she will need it.

3. It assumes homogeneity such that all units of a good should have the same quality and weight which is not the case.
4. It assumes that units of a commodity should be consumed in succession. However if consumption for a commodity is spaced or at random, utility will increase and the law will not apply.
5. It assumes there should be no change in habits, customs, fashion and income of consumers and when this happens the utility will increase instead of diminishing.

Relationship between the law of diminishing marginal utility and the demand curve

The relationship is that, as marginal utility falls, a consumer is willing to consume more units of a commodity at successively lower prices. Therefore, it is this law that explains the downward slope of a demand curve from left to right.

An illustration of the Marginal utility and the demand Curve:

B. Ordinal utility theory (indifference curve theory/Approach)

An indifference curve is one joining all those combinations of two goods that give equal satisfaction to a consumer. The curve explains consumer behaviour in terms of his/her preferences for different combinations of two goods e.g. X and Y.

An indifference curve is drawn from an indifference schedule.

An indifference schedule is a list of combinations of two goods such that a consumer is indifferent (having no particular interest in one of the said goods) to those commodities

A table showing an indifference schedule of goods X and Y

Combination	X	Y
1	1	18
2	2	13
3	3	9
4	4	6
5	5	4
6	6	3

The consumer is indifferent whether to buy the first combination of units 18Y and 1X, or the fifth combination of 4Y and 5X or any other combination. All combinations give equal satisfaction to a consumer. When various combinations are plotted on a diagram and joined by a line, they form an indifference curve.

An illustration of an indifference curve:

Assumptions of indifference curve theory

1. It assumes that there are two goods X and Y with their prices being known and given.
2. It assumes that the consumer acts rationally so as to maximise utility.
3. It assumes that a consumer has perfect knowledge about prices of goods in the market.

4. It assumes that consumer's tastes, habits and income remain constant throughout the analysis.
5. It assumes that a consumer prefers more of X to less of Y, which implies a negatively downward sloping indifference curve that is convex in nature.
6. It assumes that utility is ordinal i.e. the consumer ranks his preferences according to satisfaction
7. The indifference curve can move to the right or to the left which means that there is an increase or decrease in both commodities X and Y respectively.
8. The indifference curve never touches either axes.
9. It assumes that two indifference curves can never intersect/ meet.

NB: Where there are several indifference curves on the same graph we have an indifference map.

A graph showing an indifference Map:

THE BUDGET LINE

This refers to a line which shows various combinations of two different commodities that consumers can purchase using a fixed income.

Example: If the price of commodity Y is shs.10 and that of commodity X is Shs. 5, then the budget line for the consumer who has fixed income of shs.100 would look like the one below.

Combination	Commodity Y shs.10		Commodity X shs. 5		Total Expenditure
	Quantity	Value	Quantity	Value	
A	10	100	0	0	100
B	8	80	4	20	100
C	5	50	10	50	100
D	2	20	16	80	100
E	1	10	18	90	100
F	0	0	20	100	100

An illustration of the budget line

Characteristics of a budget line:

- It has a negative slope from left to right.
- It is determined by the commodity's price and the income of the consumer. If the price and income changes the budget line rotates or shifts respectively.
- Combinations along the budget line are attainable while those below the budget line are attainable but do not provide the necessary satisfaction/ not all the income is used.
- Combinations above the budget line cannot be attained because of the limited income

CONSUMER'S EQUILIBRIUM USING THE INDIFFERENCE CURVE APPROACH

The consumer's equilibrium is reached by using the indifference curve and the budget line.

The consumer reaches the equilibrium at a point where the budget line is tangent to the indifference curve.

A graph showing consumer equilibrium using the indifference curve approach

At this point of equilibrium, the consumer takes a maximum combination with his fixed income. Here the consumer has no tendency to change from his combination.

The equilibrium is affected by changes in the price and income.

THE CONCEPT OF MARGINAL RATE OF SUBSTITUTION (MRS)

Marginal rate of substitution is the rate at which a consumer is willing to substitute one good for another along the same indifference curve. E.g. X for Y. It is a ratio of change in good Y to a given change in another good X. It is given by:

$$M. R. S = \frac{dy}{dx}$$

THE CONCEPT OF PRODUCER AND CONSUMER SURPLUS

Consumer Surplus

Consumer surplus is the difference between what a consumer is willing to pay and what he/she actually pays for the commodity.

OR: It is the extra utility/additional satisfaction a consumer enjoys without paying for it.

Consumer Surplus = Willingness to Pay - Actual Price Paid

Consumer surplus is shown as the area under the demand curve and above the prevailing market price.

Worked Example

Using the consumer demand schedule below, calculate consumer surplus when the market price is UGX 150.

Price Consumer is Willing to Pay (UGX)	300	250	200	150	100	50
Units Purchased	1	2	3	4	5	6

Solution:

Consumer Surplus = Planned Expenditure - Actual Expenditure

Actual Expenditure = Market Price × Units Purchased = 150 × 4 = UGX 600

Planned Expenditure = 300 + 250 + 200 + 150 = UGX 900

Consumer Surplus = 900 - 600 = UGX 300

Illustration of consumer surplus

PRODUCER'S SURPLUS

This refers to the difference between what the producer is willing to charge and what he actually charges for the commodity.

Or

Producer's surplus refers to the excess earnings between what the producer was willing to receive for the commodity and what he/she actually receives after selling it.

The producer's surplus occurs when a producer receives a price for his produce which is above the additional costs he incurred to produce the product.

Producer's surplus is given by the following formula
Producer's surplus = **Actual revenue** – **Expected revenue**.

An illustration of the producer's surplus.

In the illustration above the producer's surplus is shown by the shaded area above the supply curve and below the equilibrium price. i.e. OPeEC.

Formula: producer surplus= actual revenue –

planned revenue Example

Price per unit	300	350	400	450	500	550	600	650
Quantity supplied	1	2	3	4	5	6	7	8

Given the market price is shs.550. Calculate the producer surplus if 6 units

are sold. Producer surplus = **Actual revenue – Planned revenue**

But actual revenue = units sold*market price

$$\begin{aligned} &= (550*6) - (300+350+400+450+500+550) \\ &= 3300 - 2550 \\ &= \underline{\text{Shs. 750}} \end{aligned}$$

NB : 1. The teachers may add or subtract to the content as need may be. So keep that in mind.

2. Your advised to leave the illustrations although they are included in the notes, but it will be better when they are drawn during class explanations.