Principles of Economics

AEM 102/AEFM DEPARTMENT

MODULE II

DEMAND, SUPPLY, EQUILIBRIUM and ELASTICITY

MODULE II: DEMAND, SUPPLY, EQUILIBRIUM and ELASTICITY

Topic Outline

- Demand
- Shifting of the market demand curve
- Supply
- Shifting of the market supply curve
- Equilibrium price and quantity
- Surplus and shortage
- Equilibrium when market demand and/ or market supply shifts
- Government and price determination
- Price elasticity of demand
- Elasticity and total revenue
- Income elasticity of demand
- Cross price elasticity of demand
- Elasticity of supply
- Applications of elasticity

DEMAND: Individual demand and Market demand

Demand refers to the quantities of a good and service **a consumer** or **group of consumers** are willing and able to purchase at different or range of prices.

We can separate demand into two:

- Individual demand for a commodity, and
- Market demand for a commodity

Individual demand:

demand of **one individual** consumer in the market for a good or service

Market demand:

the *total combined demand* of **all consumers** in the market for a good or service; **it reflects the collective wants of people in a market area.**

Demand Schedule: Individual & Market Demand Schedule

Demand Schedule is a table that shows the quantity demanded of a good or service at different price levels.

Individual Demand Schedule is a list of the various units of a good or service that a consumer/an individual is willing and able to purchase at different prices at one point of time.

Market Demand Schedule is a list of the total quantity of a good or service demanded at different prices by all the consumers in a market at a particular point of time.

INDIVIDUAL DEMAND SCHEDULES

MARKET DEMAND SCHEDULE

DEMAND SCHEDULE FOR DAMMY	
Price (₦)	Quantity demanded
5	10
10	8
15	6
20	4
25	2
30	0

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DEMAND SCHEDULE FOR BOLA	
Price (₦)	Quantity demanded
5	11
10	9
15	7
20	5
25	3
30	1

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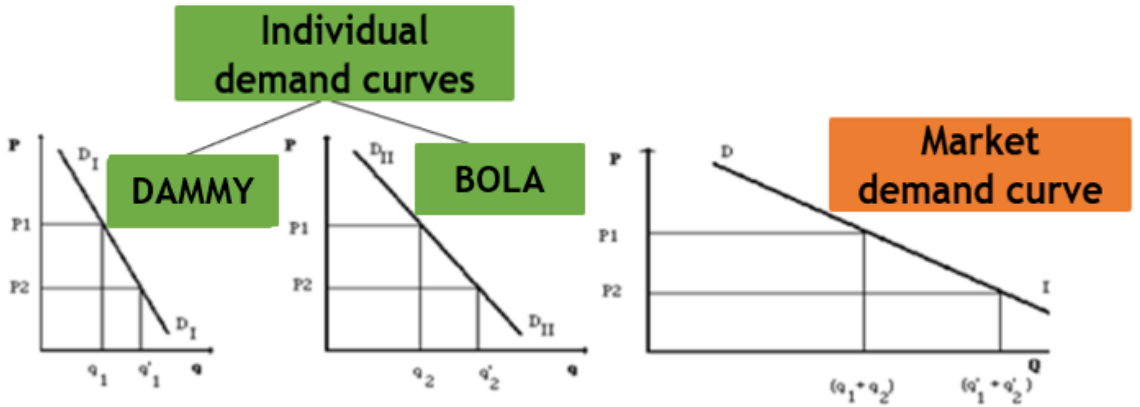
MARKET DEMAND SCHEDULE	
Price (₦)	Quantity demanded
5	21
10	17
15	13
20	9
25	5
30	1

Demand Curve: Individual & Market Demand Curve

The demand curve:

- the graph depicting the relationship between the price of a certain commodity and the amount of it that consumers are willing and able to purchase at that given price.
- It is a graphical representation of a demand schedule (note that the price is on the vertical ,Y axis and the corresponding quantities are on the horizontal, X-axis).
- The **market demand curve** is found by taking the **horizontal summation** of all **individual** demand curves.



The demand curve is **usually downward sloping (negatively sloped)**, i.e. there is and inverse relationship between price and quantity demanded. More units are purchased at lower prices

Demand Versus Quantity Demanded

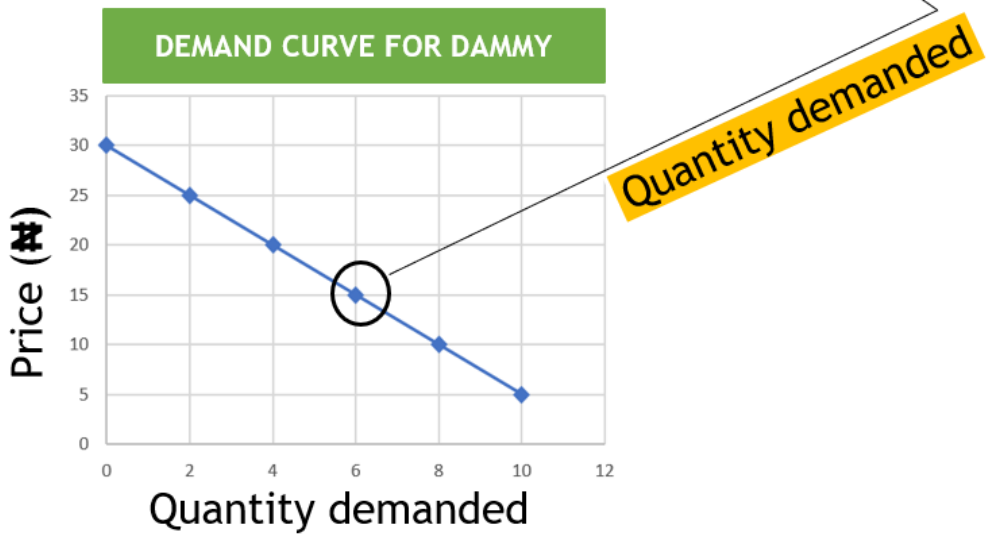
Demand:

- **quantities** of good and services a consumer or group of consumers are willing and able to purchase **at different or range of prices**.
- In short, demand refers to the demand schedule or demand curve.

Quantity Demanded:

- **amount** of a good or service that a consumer or group of consumers is willing and able to purchase **at a certain price** and period of time.
- It means only a certain point on the demand c**urve**, or one **quantity** on the **demand** schedule.

DEMAND SCHEDULE FOR DAMMY	
Price (₦)	Quantity demanded
5	10
10	8
15	6
20	4
25	2
30	0



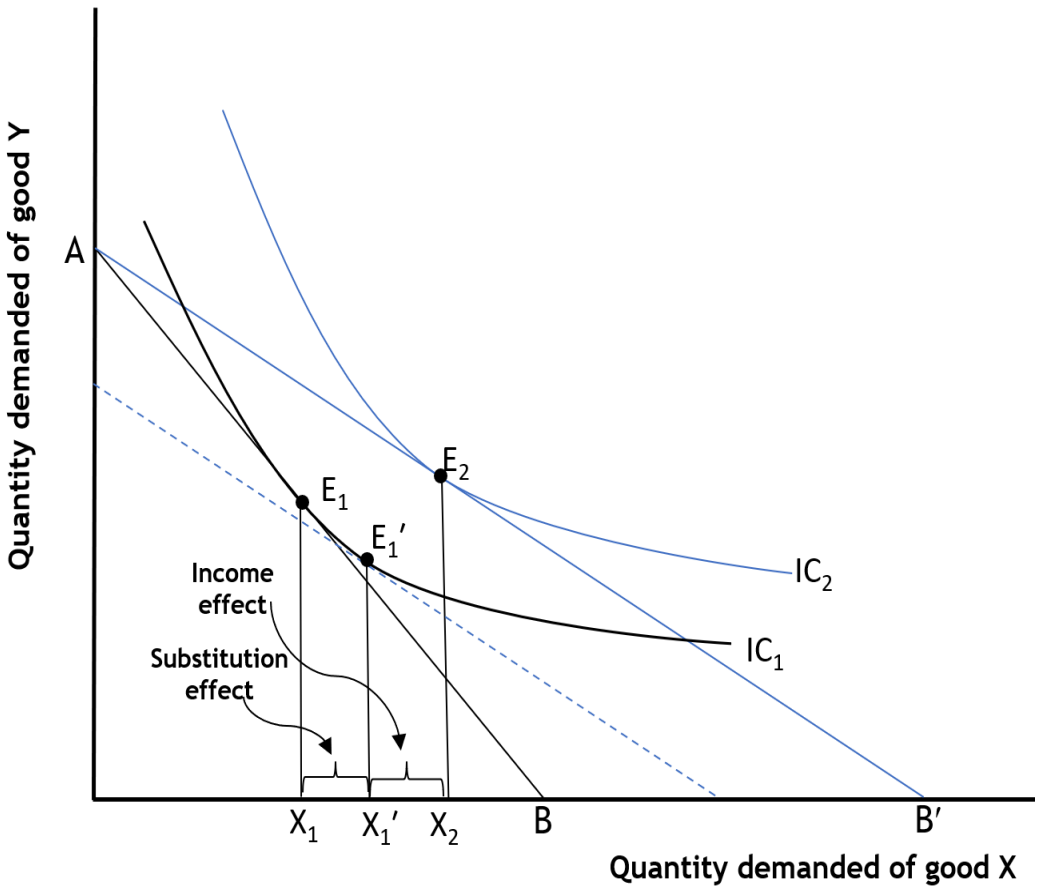
Why does the Demand Curve slope downward?

- **Substitution effect:**
- As a commodity's price falls, an individual normally purchases more of the good since he is likely to substitute it for other goods whose price has remained unchanged.
- **Substitute goods** are two **alternative goods** that could be used for the same purpose.
- For example, when coffee price falls and price of tea is unchanged, more coffee and less tea will be purchased.
- **Income effect:**
  - When a commodity's price falls, the purchasing power of an individual with a given income increases, allowing for greater purchase of the commodity
  - This is called income effect.

Why does the Demand Curve slope downward?

Substitution and Income Effect of a Price Fall

- When the price of a good falls, more of it can be consumed with a given income
- This is illustrated by the shift of the demand curve from AB to AB'
- The initial equilibrium point moves from E_1 on indifference curve I to E_2 on a higher indifference curve II
- The difference between X_1 and X_2 is the **total effect of price change**
- This can be partitioned into **substitution effect(X_1X_1')** and **income effect ($X_1'X_2$)** of the fall in price.
- SLUTSKY'S THEOREM arose from the substitution and income effects of price fall.



Why does the Demand Curve Slope Downward?

- **Number of consumers:**
  - Basically, when price of a commodity is relatively high, only few consumers can afford to buy it, and when its price falls, more numbers of consumers would start buying it.
- **Various uses of a commodity**

- **Law of diminishing marginal utility:** states that with each increasing quantity of the commodity, its marginal utility declines.
- When the quantity of goods is more, the marginal utility of the commodity is less. Thus, the consumer is not willing to pay more price for the commodity and its demand will decline.

Why would demand curve slope upward?

- A demand curve might slope upward in case of Veblen and Giffen goods.
- **Veblen goods:** luxury goods such as diamond jewelry and exotic cars, designer clothes people spend proportionally more on them as their income increases.
- Veblen goods are never necessary goods, considered a high-quality product and a status symbol.
- People of high social and economic standing increase their consumption of luxury goods as their prices increase.

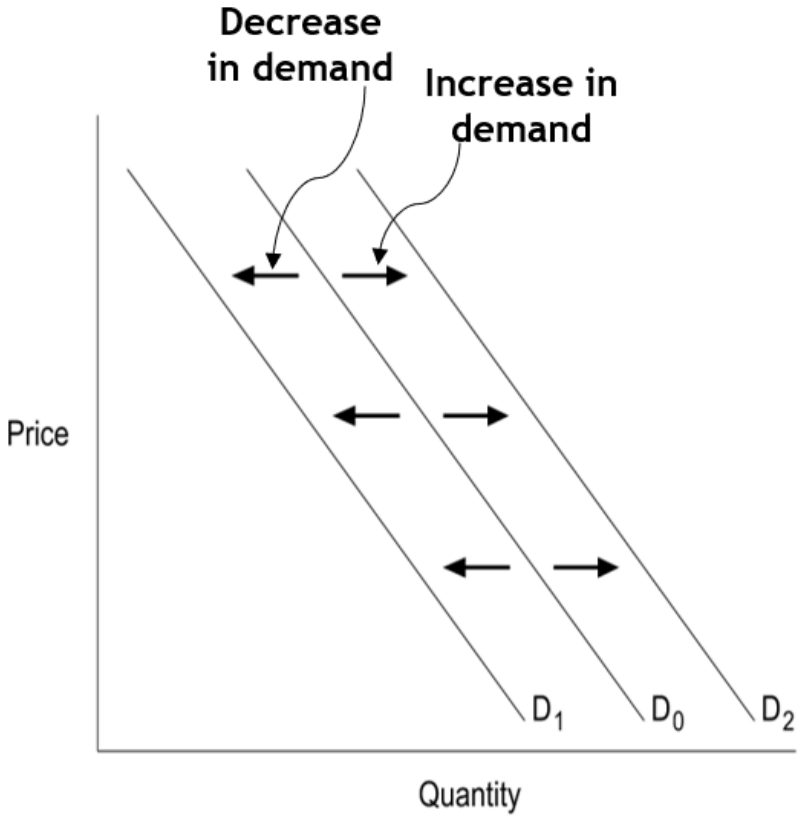
- **Giffen goods:** Unlike Veblen goods, Giffen goods are **low-income, non-luxury and necessity** products, for which there are no close substitute as in the case of staple foods such as rice, bread
- They are special kinds of inferior goods and increase in their demand has to do with poverty.

Shifts in Demand Curve

- The demand for a good or service is influenced not only by the commodity's price but also by:
  - ✓ the price of other goods and services (P_0),
  - ✓ consumer preferences (C),
  - ✓ Income (Y),
  - ✓ Wealth (W) and,
  - ✓ size of the market (S)
- In presenting the demand for a good or service as a schedule relating price and quantity demanded, variables other than the commodity's price are held constant.
- The relationship is presented as :
- **$Q_d = f(P/P_0, C, Y, W, S..)$, *ceteris paribus***
- *Ceteris paribus indicates that variables other than the price of the commodity are kept constant/ unchanged*

Shifts in Demand Curve

- **A change in demand** refers to a shift of the demand curve because a variable other than price of the commodity has changed.
- A shift in demand curve outward (to the right of the original demand curve) from D_0 to D_2 represents an **increase in demand**
- A shift in demand curve inward (to the left of the original demand curve) from D_0 to D_1 represents a **decrease in demand**
- **A change in quantity demanded** occurs when there is change in the commodity's price, resulting in a movement along an existing demand curve.
- Movement along D_0 represents change in quantity demanded



Rightward Shift of the Demand Curve

The market demand curve shifts up to the right when:

- ✓ the number of individuals in the market increases
- ✓ there is an increase in preference for the commodity,
- ✓ income increases
- ✓ the price of substitute commodity (Substitute goods are goods that serve essentially the same purpose and thus consumer can easily replace one with another) rises
- ✓ the price of a complementary good (complementary goods are goods whose consumption are tied to each other) declines

Leftward Shift of the Demand Curve

The market demand curve shifts down to the left when:

- ✓ the number of individuals in the market decreases,
- ✓ there is an decrease in preference for the commodity,
- ✓ income decreases,
- ✓ the price of substitute commodity falls,
- ✓ the price of a complementary good rises.

Determinants of Demand

Therefore, factors that determine the quantities of goods and services demanded include:

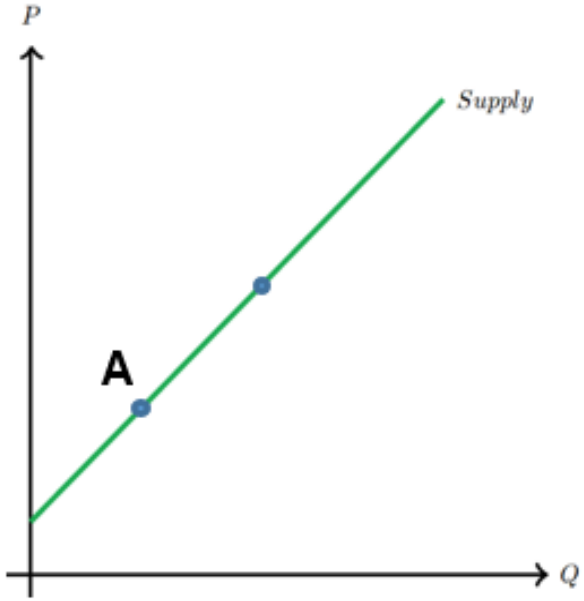
- ✓ Price of the commodity,
- ✓ Price of other goods and services,
- ✓ Average household disposable income,
- ✓ Wealth,
- ✓ Taste and preferences,
- ✓ Size of the population e.t.c.

SUPPLY

- **Supply** refers to all the possible quantities of a product that a seller/sellers are willing and able to produce at all possible prices during a particular period of time.
- A **supply schedule** is a table that shows the relationship between the price of a good and the quantity supplied.
- A **supply curve** is a graph that illustrates that relationship. Supply is represented in a graphical model as the entire supply curve.
- A **market supply curve** is derived from each **producers supply curve**, by summing the units each producer is willing to supply at alternative prices

SUPPLY

- **Quantity supplied (Qs)** is defined as the amount or quantity of a product that a producer / producers are willing and able to supply onto the market at a **given/specific price** in a given time period.
- It represents a point along the supply curve or one **quantity** on the **supply** schedule.
- In short, **supply** refers to the **curve** and **quantity supplied** refers to the (specific) point on the **curve**.
- The **law of supply** states that there is a positive relationship between price and quantity supplied, leading to an upward-sloping supply curve, indicating that supplier must have a higher price to increase supply.



Why Is the Supply Curve Upward Sloping?

- There are three main reasons why supply curves for most products slope upwards from left to right giving a **positive relationship between the market price and quantity supplied**:

  1. The profit motive: When the market price rises, it becomes more profitable for businesses to increase their output. Higher prices send signals to firms that they can increase their profits by satisfying demand in the market.

  2. Production and costs: When output expands, a firm's production costs rise, therefore a higher price is needed to justify the extra output and cover these extra costs of production.

  That is, supply curves slope upward because the marginal cost of producing goods/services rises as you produce more of them with your given fixed costs in the short-run.

  3. New entrants coming into the market: Higher prices may create an incentive for other businesses to enter the market leading to an increase in supply

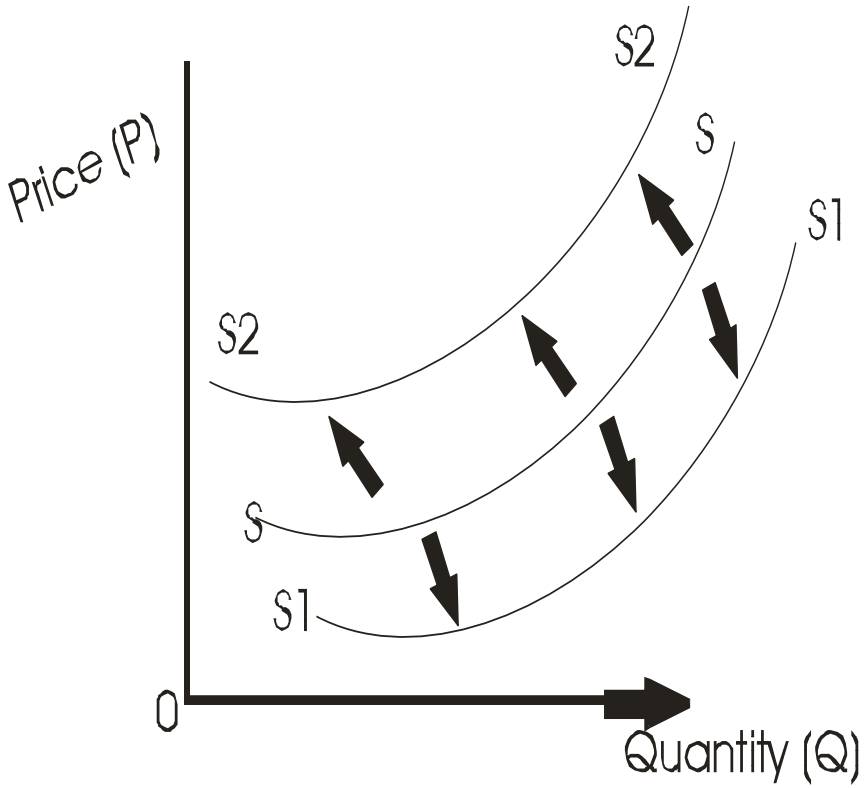
Determinants of Supply

- A **change in price of the commodity** will **change the quantity supplied** (i.e. a movement along the upward sloping supply curve), not the supply.

- Any **other factors other than price of the commodity change will change the supply** (i.e. a shift in the supply curve to either the right (downward shift) or left (upward shift) of the original supply curve.

- a shift in the supply curve downward indicate **increase in supply**

- a shift in the supply curve upward indicate **decrease in supply**



Determinants of Supply

Non-price factors:

- ✓ Factor prices (rent paid , wages ,interest on economic resources),
- ✓ Number and /or size of producers in a market,
- ✓ Cost of factors of production,
- ✓ Technological progress,
- ✓ Government subsidy/or taxes on output

Rightward Shift of the Supply Curve

The market supply curve shifts down and to the right when:

- ✓ more producers enter the market and a greater quantity of the commodity is available at each price
- ✓ There is a decrease in factor or material prices,
- ✓ Improvement in technology
- ✓ Government subsidization

Leftward Shift of the Supply Curve

- Supply curve can also shift up to the left.

- What factors will cause the supply curve to shift up to the left?