ECONOMICS FOR SENIOR FOUR

UNIT 1: BASIC ECONOMIC CONCEPTS AND THE IMPORTANCE OF ECONOMICS.

Meaning and origin of Economics

1. **Alfred Marshall** defined Economics as "a study of man in the ordinary business of life". It enquires how man gets his income and how he uses it. Thus, it is on one side, the study of wealth and on the other and more important side, a part of the study of man.
2. **Adam Smith** defined Economics "as the study of the nature and causes of wealth of nations and the means through which we can increase production".
3. **J.S. Mill defined** Economics as "a practical science of production and distribution of wealth and problems involved in production and distribution."
4. **Jean Baptiste Say**, defined Economics as "the science of production, distribution and consumption of wealth".
5. **Lionel Robbins** defined Economics as "a science which studies human behaviour as a relationship between ends and scarce means which have alternative uses".

From the above definitions many economists consider,

Robbins' definition the most appropriate because:

- It gives the fundamental causes of the economic problems such as unlimited human needs, limited means to satisfy man's needs, the alternative uses for the resources and the different importance of wants.
- Robbins' definition emphasizes scarcity as a foundation of Economics, otherwise without scarcity, there would be no Economics.
- Man's problem is not accumulating wealth, but satisfaction of human needs.

Origin of Economics:

The modern word "**Economics**" has its origin in the Greek word **"Oikonomos"** meaning a **steward**. This word can be divided into two parts, **"Oikos",** meaning a house and **"nomos",** meaning a manager. The sum up of the two words is what economics is all about. Literally, Oikonomos means **house manager.**

Importance of studying Economics

1. **Economics prepares students for further academic and professional qualifications** in fields like Commerce, Statistics, Mathematics and Environmental Sciences, among others.
2. It equips learners with the **knowledge regarding what takes place in the world of business**.
3. It makes it possible for learners to **understand and appreciate economic problems** existing in their countries, regions and the world, thereby finding solutions to those problems.
4. It equips learners with the **knowledge and skills required for them to fully participate in the economic activities** aimed at developing their economies.
5. It enables learners to **understand the scarcity of resources** and get knowledge on how the available resources can be utilized maximumly.

6. It enables learners to **understand the basic economic concepts and principles** of Economics and how to apply them in daily life.
7. **It prepares learners for employment in various fields** such as policy makers and economic planners, hence improving their livelihoods.
8. The study of economics can also **provide valuable knowledge for making decisions** in everyday life.
9. The study of economics enables us to **become critical consumers of statistically based arguments about numerous public and private issues** rather than passive recipients unable to sift through the statistics.
10. Study of economics helps a person in understanding of **human behaviour and in cultivating analytical and argumentative skills** that are crucial in the present-day labour market.

Basic terms used in Economics.

Price is the relative monetary value of a good, service or resource established during a transaction. Or it can also be referred to as the rate at which a commodity is exchanged in the market.

Types of prices

(a) **Market pric**e: This refers to any price existing in the market at a particular period of time, regardless of how it is determined.

(b) **Equilibrium price**: This is the price established in the market when quantity demanded is equal to quantity supplied. Such prices change from time to time as determined by the market forces of demand and supply.

(c) **Normal price**: This refers to the long run established price after a long period of price fluctuations.

(d) **Reserve price**: This refers to a minimum price acceptable to a producer or a seller in order to sell the commodity.

Commodities.

A commodity is anything that comes about as a result of production. It is a general term that refers to goods and services collectively.

Services

A service is an intangible commodity that satisfies human wants e.g. education, entertainment, transport, tourism, medication, telecommunication etc. Services are intangible and thus cannot be stored and don't result in ownership by the buyer.

Goods

These are tangible items that satisfy human desires. For example, food, uniform, desks, school bag, plates, mattress, television, vehicles etc. Goods can be of the following types.

a) Economic goods. These are goods which are relatively scarce in supply and have opportunity cost. They are paid for i.e. have money value and provide satisfaction to the consumers. E.g. cars, uniform, shoes, bags etc.

b) Free goods. These are goods that are naturally in abundant supply, they are not paid for, and provide satisfaction to the consumers. E.g.sunshine, rain water, air etc. They have no opportunity cost or price to produce or consume them. Music is also a free service because, once a song is composed, everyone is free to sing the tune.

c) Public goods. These are goods that one individual can consume without reducing its availability to others and from which no one is deprived.

Or These are goods that are owned and enjoyed collectively by the whole society. Examples of public goods include roads, law enforcement, national defense, public parks, public clocks, bridges, streetlights.

Characteristics of public goods

1. They are **non-rivalrous** ie they don't reduce or run out in supply as people consume them.
2. They are **non-excludable** ie they are available to all and cannot be withheld even from people who do not contribute to their public funding.
3. They are **non-divisible** ie they are provided in totality and therefore benefits everyone.

d) Private goods. These are goods that are exclusively purchased and owned for consumption by an individual. **For example**, personal cars, houses, shirts, dress etc

Characteristics of private goods

1. They are rivalrous,
2. They are xcludable
3. They are divisible.

e) Normal goods: These are goods whose demand increases as the consumer's income increases and vice versa. **Examples of normal goods** include food staples, clothing, and household appliances.

f) Inferior goods: Inferior goods are goods whose demand drops as consumers' incomes rise. In other words, as consumers' incomes rise, they would rather have a more costly alternative than inferior goods. However, the term "inferior" doesn't refer to quality, but rather, affordability.

g)Merit goods: These are goods which an individual or society should consume on the basis of its importance rather than the ability to pay for it. **Examples include** education, safe water, and healthcare.

Merit good creates **positive externalities** i.e. the public benefit is greater than the private benefit.

h) Demerit goods. A demerit good is a good or service whose consumption is considered unhealthy, degrading, or otherwise socially undesirable due to the perceived negative effects on the consumers themselves and the entire society.

Demerit good has **negative externalities** ie involve costs imposed on third parties. **Examples of demerit goods** are, alcohol, cigarettes, drugs, junk food, gambling, prostitution etc.

i) Capital goods: These are any tangible assets used by one business to produce goods or services as an input for other businesses to produce consumer goods. **They are also known as** intermediate goods, durable goods, or economic capital.

Example of capital goods; properties, plants, and equipments or fixed assets such as buildings, machinery and equipment, tools, and vehicles.

j) Consumer Goods: A consumer good is any good purchased for consumption.

Or **Consumer goods** are goods ready for consumption.They are sometimes called **final goods** because they end up in the hands of the consumer or the end user. **Examples of consumer goods** include food, clothing, vehicles, electronics, and appliances. Consumer goods can be durable goods (have a lifespan of more than three years), nondurable goods (meant for immediate consumption with a lifespan of less than three years), and services (Haircuts, entertainment, and car repairs).

Market: Is an arrangement between buyers and sellers to carry out transaction. Market is not a place because it can take place anywhere. Markets can be either local/ domestic or international/ foreign**. Characteristics of market**; buyers,sellers, medium of exchange (money) and goods and services.

Wealth: Wealth refers to the stock of valuable assets held by an individual (individual wealth), a firm/an organisation (business wealth) or a country (social wealth), at any particular moment of time.

Characteristics of wealth

a) It has **value:** Wealth can be expressed in monetary terms.

b) It is **relatively scarce**: Wealth is not found easily.

c) It is **transferable**: Wealth can change ownership and possession from time to time.

d) It **possesses utility**: Wealth gives satisfaction to the owner.

Welfare: This refers to the wellbeing of people. Or It's the satisfaction that the individual, society derives from wealth.

Factors that influence welfare.

Employment,income distribution, labor conditions, leisure time, production.

Economic welfare is the level of prosperity and standard of living of either an individual or a group of persons.

Or It refers to utility gained through the achievement of material goods and services.

Needs: These are things that man cannot live without. Or these are things that we must have to survive. They are basic to being alive. **For example**, water, food, shelter, clothing, medical care etc.

Wants: These are human desires that man can live without. These are things that one wishes to have but which may not threaten one's existence. They are things that make life pleasurable or comfortable. E.g. mobile phones, cars, radio, TVs etc. wants may be material, immaterial, private or public.

Characteristics of wants

i) Wants are **unlimited** i.e. they are many.

ii) They are **insatiable**: i.e. It is impossible to satisfy all human wants.

iii) They are **dynamic**. I.e. they change with time, age and place.

iv) They are **competitive**: i.e. they compete with each other for available resources.

v) They are **completely interdependent**: i.e. the satisfaction of one want may result into satisfaction of another. E.g. the decision to buy a car satisfies the human desire for transport but in the due course, it also satisfies the human desire for prestige in society.

Resources. These are means of production or inputs to production. They are at times referred to as **factors of production**. Resources can be natural (e.g. land), human resource (labour and entrepreneurship) or man-made (capital).

Economic agents: These are units that undertake economic activities in an economy. They are decision taking units in the economy. Each nation's economy is composed of four major sectors plus its interaction with all foreign economies, which is the fifth sector known as the foreign sector.

Forms of economic agents

- **The households** who are the suppliers of resources and consumers of commodities.
- **The firms** which acquire and transform raw resources into useful goods and services which are then sold to consumers/ households or other firms for a profit.
- **The Financial sector** which includes all the non-industrial firms whose sole purpose is financial intermediation and financial services (deposits, lending,payment and investment services) like commercial banks, investment bank, brokers, financial companies and insurance companies.
- **The government** which has legal and political power to control firms, financial sector and households; directs, controls, stabilizes and regulates the activities of firms, households, and foreign sector through taxation, subsidization and borrowing.
- **The foreign sector** which produces goods and services for sale to other countries (exports) and buying goods and services from other countries (imports).

Economic Systems

Economic systems refer to the ways economic agents are organized to form one organized unit of an economy. It shows how societies determine ownership, direction and allocation of resources in their economies.

Types of economic systems

a) Free enterprise/ free market/ laissez faire/ unplanned/ capitalistic economy:

This is an economic system where productive resources are privately owned and economic decisions are highly guided by forces of demand and supply. In such economic system productive resources are entirely owned, distributed and allocated by private individuals without government interference.

Characteristics of a free enterprise market:

1. Private ownership of productive resources e.g. land**.**

2. An individual has the power to exploit others through the activities they do.

3. The producers aim at profit maximization.ie resource allocation and economic decision are based on profit motive.
4. There is stiff competition in an attempt to acquire high profits thus quality improvement and efficiency.
5. The ineffective persons and those without resources are allowed to remain poor or even made poorer.
6. There is consumer sovereignty (freedom) i.e. Consumer is the king implying that he has the capacity to influence the productive decisions of the producers.
7. An entrepreneur is free to choose any economic activity in which to invest his/ her capital.
8. There is no government intervention in resource allocation.
9. The allocation of resources is controlled by the invisible hand of the market that operates through demand and supply for commodities and their prices.
10. Freedom to accumulate riches makes man more individualistic.
11. One's ability and energy to access wealth will determine the level of his/her welfare.

Advantages of a free enterprise economic system.
1. The system is **automatic and doesn't require government intervention** i.e. the government satisfies collective wants but does not compete with private firms.
2. **It promotes consumer sovereignty** i.e. the consumer has absolute power to determine the nature of goods to be produced, when to produce them, through their buying habits, how they want them and at the price they can afford.
3. **The factors of production are privately owned and production takes place at the initiative of private enterprises**. This encourages more people to join the different lines of production thus creating employment opportunities.
4. **The existence of profit motive makes people and firms to work hard** to produce goods and services. It motivates producers or entrepreneurs to produce goods and services.
5. **There is more flexibility in the system** since there are no fixed laws imposed by the government.
6. **Freedom of entry into the production process** by private producers promotes competition among producers. This in turn leads to production of more and better quality output at lower prices.
7. **It allows efficient allocation of resources** to the most efficient uses from the least efficient uses.
8. **There is great responsibility** by the private sector as individuals which leads to the production of high quality goods and services
9. **It encourages development of entrepreneurship in an economy** due to free entry and exit and this leads to increased levels of output in the economy
10. **Government is left with enough time and resources** to concentrate on law making and defense due to reduced role of the government in the system.

11. **There is a wide variety of commodities produced** due to many producers engaged in production and this increases consumer's choice.

Disadvantages / Short comings of free market economy

1. **Creation of monopoly firms when inefficient firms** are pushed out of the business due high degree of competition. Monopoly firms exploit the consumers through high prices and low quality.
2. In a free market system, focus is on **private benefits which give rise to social costs** like pollution and noise that lead to poor welfare.
3. **People with low incomes have to go without some goods and services** because the demand structure may reflect the needs of only one particular group i.e a high income group.
4. **It leads to unemployment** once inefficient firms are knocked out of production.
5. **At times the process of adjustment may take long** and the society may suffer.
6. **Essential goods which** are not profitable may not be produced in such economic system because producers only aim profit maximize.
7. **There is over exploitation of resources** in such economic system which leads to quick resource exchaustion because producers only aim profit maximization.
8. **The government may get difficulties in implementing** some of its good policies in the economic system since all resource ownership, distribution and allocation is in hands of private individuals.
9**. Income inequalities arise in the economy** plus all its negative effects because in such system producers always charge prices differently.

b) Centrally planned/Centralized/Planned/Socialistic/Command economy.

Centralized economy refers to the economy where resource ownership, distribution and allocation is done by the government on behalf of its citizens.

c) Features of a planned economy:

1. Resources are owned and allocated by the government.
2. Private individuals are not allowed to own resources.
3. Government makes the economic decisions.
4. Government determines the price of goods and services.
5. Government controls all aspects of economic production. i.e. Government decides what to produce and how to produce.
6. The government sets the priorities for production of all goods and services.
7. Government creates laws, regulations and directives to enforce the central plan.

Merits/Advantages of centrally planned/Socialistic/Centralized/Planned economy.

1. **There is limited consumer exploitation** because prices are controlled by the government.
2. **Social costs like pollution** can easily be controlled by the government.

3. **There is provision of public goods** like roads which cannot easily be provided by private individuals because they are non-profitable.
4. **There is provision of essential goods and services by the government** at low prices because the government aims at social welfare of people.
5. It leads to **equal distribution of income in an economy**. This is because resource allocation and distribution is done by government.
6. **It leads to economic stability** since resource allocation and distribution is done by government.
7. **It reduces the powers of private monopolies** since ther is government regulation of monopoly practices. For instance the government fixes prices in the markets..
8. **There is proper utilization of resources** due to government intervention.
9. **There is preservation of nature and general environment from individual activities** like pollution.

Demerits/ disadvantages of command economy
1. There is provision of **poor-quality goods and services** because there is limited competition.
2. There is **limited consumer's choice** because it's the government to determine what to be produced.
3. There is also **misallocation of resources** because resources may be allocated due to political motives.
4. It also **causes unemployment** because government is the only employer since all resources are owned and distributed by the government.
5. **It also leads to delay in decision making** because everything is controlled by the government.
6. **There is also wastage of resources** by many people because they know that resources are owed by the government.
7. **It promotes monopoly powers** in the market (statutory monopoly)
8. **There is underutilization of resources** due to limited competition
9. **It discourages private investment in the country** when all resource ownership, distribution and allocation is in hands of the government.
10. **High corruption** may arise in government owned venture
11. **There are high levels of bureaucracy** (red tape) i.e delay in decision making when all decisions about resources are in hands of the government.

C. Mixed economy.
This is an economic system where the resources are owned, distributed and allocated by both government and private individuals.
Features of mixed economy.
1. Resources are allocated, distributed and owned by both private individuals and government.

2. **The government set instructions** which are supposed to be followed by private sector in resource allocation.
3. There is **free entry and exist in the market** but influenced by the government.
4. The prices are determined by both **government and the forces of demand and supply**.
5. The private sector is **under the regulation of the state**.
6. **Individuals have some influence** over the use of natural resources.
7. **Consumers have freedom of choice** since there is variety of firms or producers.
8. **Producers have the incentives to work hard** due to high level of competition from both the private and public sectors.
9. **Necessary/key strategic goods and services are produced** by the state. E.g defense.
10. **Certain sectors of the economy are left to private ownership** and free market mechanism while others are dominated by the government ownership and planning.

Advantages of mixed economy.

1. **It increases employment opportunities** because employments are provided by both government and private individuals.
2. **There is equal distribution of resources** because resources are both distributed by the government and private individuals.
3. **It creates regional balanced growth** when resources are both distributed by the government and private individuals.
4. **There is price stability in the economy** because the government can easily control prices set by private individuals.
5. **There is proper allocation of resources** in the economy since government can influence the resource allocation by private individuals.
6. **Public goods are not ignored in the economy** since the government also has hand in resource allocation and distribution.
7. **It also increases the levels of investments** since the investments are done by both government and private sector.
8. **There is no consumer exploitation** due to government intervention.
9. **There is preservation of nature and general environment** from individual activities like pollution due to government intervention.

Disadvantages of mixed economy.

1. Government interference in the economy may result in state monopolies which may lead to exploitation of consumers.
2. It may also lead to **over exploitation of resources in the economy** since resources are both allocated and distributed by government and private individuals.
3. The government may **undermine the private sector** because the government is financially bigger than private sector.
4. There is also **resource wastages in unnecessary advertisements** since there is competition between government and private individual.

5. There is **excessive competition** which might lead to duplication of services and goods.
6**. It encourages production of harmful products** since there is existence of private individuals
7. There is sometimes **consumer exploitation** due to limited government influence
8. **Price instabilities** due to private individual influence.
9. **There is poor decision making** since private individuals and government tend to have different ideologies.

UNIT.2. NATURE AND SCOPE OF ECONOMICS.

The scope of economics refers to the limits within which economic problems can be discussed and solved.We shall look at the methodologies used by different economists to arrive at their conclusions so as to answer the question.

a) Economics as an art and as a science.
b) Normative and positive economics.

- **Economics as a science or an art.**

There is a great controversy among the economists regarding the nature of economics, whether the subject 'economics' is considered as science or an art.

Economics as an art.

Economics as an art (social science) seeks to explain the economic basis of human societies and shows how a particular society solves its economic problems. It utilizes the facts of science for practical purposes. For example, through scientific analysis based on observation, and reasoning, economists build models that explain economic phenomena.

Economics as a science

Economics as a science subject uses scientific approaches when establishing truths about an economic event. It defines concepts and quantifies them for purposes of evaluation and testing. As a science, economics depends on scientific methods to prove right or wrong any claim that is made. As a science Economics is a systematized body of knowledge got by observation and experiment and it uses a scientific method to process theory.

- **Normative and positive economics.**

Positive Economics: Is a branch of Economics that studies variables the way they are, that is, the way they exist in real life. Positive economics is factual and can be verified. It uses objective explanations. For instance, a statement like 'Prices for agricultural products fluctuate frequently' is a positive statement.

Normative Economics: Is a branch of Economics that studies variables the way they ought to be, as a desirable condition. It uses subjective explanations. Normative economics is fiction. They are not t facts; rather they are opinions of economists who tell us what they think. It can be true for some and false for others. They cannot be tested either. E.g. 'Prices in the market should be stable,' is a normative statement.

Branches of economics

Microeconomics: Is a branch of Economics that studies individual units of the economy. Such units may be households, firms or prices of commodities, among others. It looks at how these single units function individually. It looks at areas such as household decisions on consumption, the firm's production and profit maximisation decisions, market prices and their regulations.

Macroeconomics: Is a branch of Economics that studies all units of the economy as an aggregate. It looks at the whole economy as a single functioning unit. This is because the different individual units of the economy are interrelated. It looks at areas like the causes of economic growth, changes in interest rates and their effects on the economy, effects of monetary and fiscal policies.

Therefore, we can say that the main **difference between** microeconomics and macroeconomics is scale. However, the two are complementary because aggregate production and consumption levels are the result of choices made by individual households and firms. The major change in individual households and firms result into a change in aggregate.

Fundamental principles of economics

Scarcity;

This refers to the limitedness of resources relative to human desire for them. Scarcity in the economic sense means that the available resources are not sufficient to satisfy human wants. Due to the problem of scarcity, one has to make rational choices by satisfying the most pressing wants first and then the least pressing ones last.(**scale of preference**)

Choice

This refers to the act of taking a rightful decision among available alternatives or among different possible solutions/options. Choice arises out of scarcity. For instance, a student who has a fixed amount of money can opt to buy a textbook to use in the classroom, rather than buying sports shoes to be worn over the weekends.

Opportunity cost

This refers to the second best alternative foregone when a choice is made. Opportunity cost is not entire range of commodities missed; it is just one item that is next to the item chosen on the scale of preference. It can be illustrated using the opportunity cost curve, which shows the amount sacrificed on one commodity in order to get more of another.

The relationship between scarcity, choice and Opportunity cost

Since all things are limited (scarce), one has to make choice on how the available means (resources) shall be used. Individual consumers/ producers will therefore have to decide which of their needs/wants have to be given priority and forego others thus making opportunity cost. This relationship can also be explained by the use of Production Possibility Frontier (PPF) curve.

Production possibility frontier (PPF)

A production possibility frontier (PPF) is a locus of points showing the possible combinations of two commodities that can be produced when all the resources are fully utilized. It is also called the product **transformation curve** or the **opportunity cost curve**.

Assumptions of the PPF:

1. It assumes that **only two commodities** are produced.
2. It assumes that **the level of technology is fixed and constant**.
3. It assumes that **all resources are fully utilised**.
4. It assumes that **same resources are used to produce** either or both of the two goods.

Importance of the PPF

1. The PPF shows whether there is **economic growth or decline in the country**. An outward shift indicates economic growth. An inward shift indicates economic decline.
2. The PPF shows the **rate of unemployment by showing the rate at which resources are employed or utilised.** Points along the PPF show full employment and utilisation of resources. Points inside the PPF show the unemployment and underutilization of resources.
3. The PPF shows **the combination of goods and services** that can be produced in an economy.
4. It indicates **technological advancement within an economy.** When the level of production increases, the PPF shifts outwards. This indicates technological advancement.
5. The PPF also shows the **economic problems of scarcity, choice and opportunity cost**. Production cannot go above the PPF.Thus any producer has to make a choice due to limited resources. There is a limit in the total amount of products that can be produced at any time. Increase in production one commodity reduces the amount produced of another commodity.
6. **It helps to answer the basic economic questions** ie what to produce? how to produce? for whom to produce? when to produce? And where to produce?
7**. It shows efficiency in production**. i.e. points along the PPF indicate efficient utilisation of the available resources. Points inside the PPF show inefficient use of resources while points out of the PPF show overutilization of resources.

The hypothetical production possibility schedule

Combination	Quantity of X	Quantity of Y
A	0	200
B	50	190
C	90	150
E	95	120
F	100	0

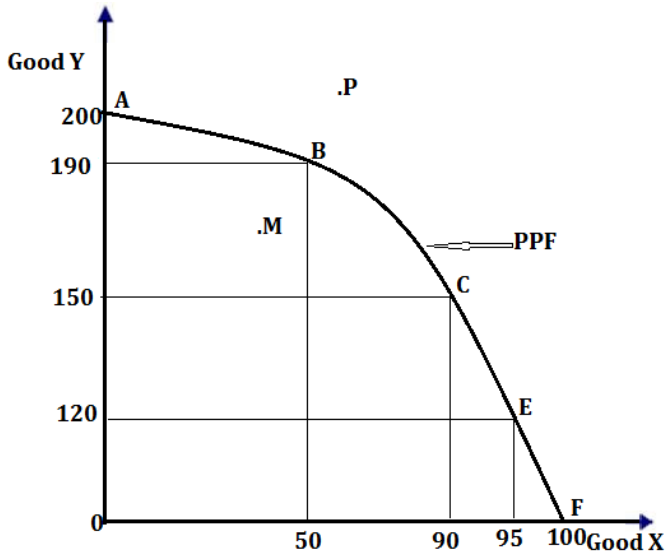


Fig 2.1: A PPF curve

In the above illustration, A and F are the possibilities in which the producer can produce either 200 units of Good Y only or 100 units of Good X only with given resources. However, the assumption is that both are produced. There are therefore various combinations A, B C, E and F that can be produced.

On combination A, only good Y can be produced and nothing of X; at B, 190 units of Y and 50 units of X; At point C, 150 units of Y and 90 units of X ; at E,120 units of Y and 95 units of X; while at F, 0 units of Y and 100 units of X are produced.

The PPF shows that when more units of Good X are produced, less units of Good Y are produced. This implies that the producer withdraws some resources from the production of Good Y and uses them in producing more units of Good X. This transforms resources producing Good Y into production of Good X. It is for this reason that the curve is also called a **transformation curve.**

Point M inside the PPF indicates that the level of **output is attainable but undesirable**. This is because rationality requires that one prefers more to less. **Point P** outside the PPF is **not attainable** using the available resources. However, it may be attained if the available resources be increased.

Shifts in the PPF:

The PPF may shift inwards or outwards. A shift of the PPF inwards **indicates economic decline** while a shft of the PPF outwards indicates **economic growth.**

Shifts in the PPF can either be inwards or out wards.

(a) shift of the PPF outwards

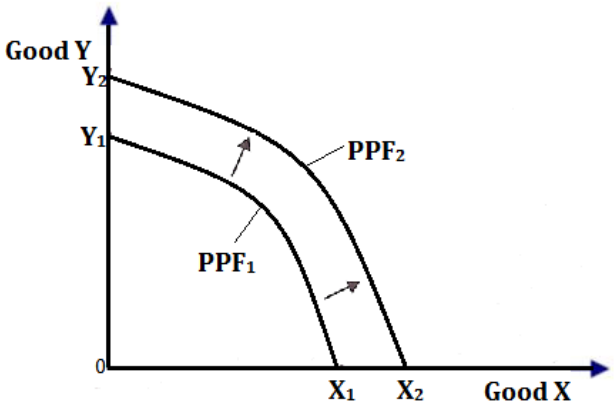


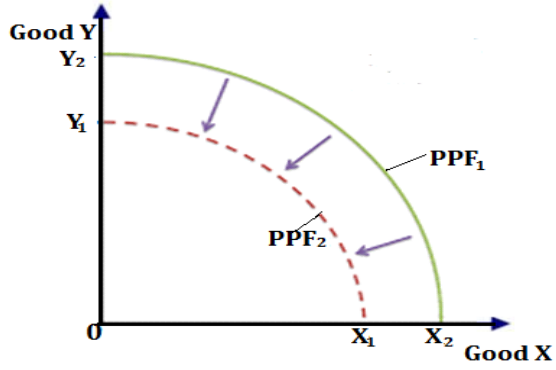
Fig 2.2: Shifts in the PPF outward

An outward shift from $Y_1 X_1$ to $Y_2 X_2$ to indicates economic growth.

Reasons for the outward shift of PPF

1. Discovery of **new natural resources**.
2. **Advancement in technology** that leads to production of more goods and services.
3. **Expansion of markets** that encourage production of more goods and services.
4. **Improvement in the skills of labour** that results into efficiency in production.
5. **Increased investment** as a result of improved entrepreneurship skills.

(b) A shift in the PPF inwards



An inward shift from $Y_1 X_1$ to $Y_2 X_2$ indicates an economic decline. Similarly, there is a reduction in the quantity produced of both Goods Y and X.

Reasons for the inward shift of PPF

1. Lack of **new natural resources.**

2. **Decline in the invention and use of technology** that leads to production of poor quality and fewer goods and services.
3. **Decline in the markets** which discourage production of more goods and services.
4. **Decline in the availability of trained manpower**, through retrenchment of workers. This results into less output and inefficiency in production.
5. **Decreased investment** as a result of poor entrepreneurship skills.

Economic questions:

These fundamental economic questions include:

a) What to produce?

Here the firm needs to decide on the nature of the goods to produce. The firm may decide to produce capital goods or consumer goods.

b) How to produce?

The producer has to decide on the methods and techniques to be used in the production process. The producer may decide to use capital intensive techniques of production or labour intensive techniques of production. The technique of production minimizes costs while at the same time maximizes the level of output.

c) When to produce?

The producer is required to decide whether to produce now or to produce in future. The producer is normally guided by the demand for the products in the market. The best time for production is when the demand for the goods or services is the highest.

d) Where to produce?

The producer has to determine on the location of his or her firm or industry. The location will depend on availability of the market, the source of raw materials, security and transport and communication networks. All in all, a thorough assessment of the impact of that firm to the environment must be carried out and evaluated.

e) For whom to produce?

The producer considers the target consumers that will use the goods to be produced. The producer may be for the young, the rich, the poor, the rural people or for the urban people.

UNIT 4: EQUATIONS AND FRACTIONS IN ECONOMIC MODELS

Linear equations and graphs:

(a) Linear Equations

A linear equation is a mathematical representation that expresses simple relationship between variables. It is made of one or more than one variable.

This relationship can be expressed as an equation, as follows:

Y =a +b x, where **y** is the dependent variable (sales revenue in this case), **x** is the independent variable (advertising in this case),

a is a constant figure. It represents the amount sold without any form (at zero level) of advertising i.e. If **x=0, y =a.**

In the activity 19.1, sales made without advertising are lower than 24,000,000 FRW. (Assuming advertising begins at 1 million FRW).

a is a coefficient. It shows how much y will change every time x changes by one unit.

If x changes from some value (x_1) to another value (x_2), then **y** will also change from
$y_1 = a+bx_1$ to
$y_2 = a+bx_2$
The change in y_1 usually written as $y_2 - y_1 = (a+bx_2) - (a+bx_1)$, will be

$$y_2 - y_1 = a+bx_2-a-bx_1)$$

Collecting like terms, we get, $y_2 - y_1 = (bx_2-bx_1)$
Dividing through by bx_2-bx_1, we get: $\Leftrightarrow y_2 - y_1 = bx_2 - bx_1 \Leftrightarrow y_2 - y_1 = bx_2 - bx_1$

$$y_2 - y_1 = b\,(x2 - x1)$$

$$b = \frac{y2-y1}{x2 - x1}$$

The above case is an example of a **linear equation**. Linear equations are referred to as **first degree polynomials**.
From the table above, following advertising and sales figures of Quality Supermarket, we can see that sales increase by 5 million from 1 million advertising expenditure. Therefore, at zero advertising expenditure, sales would be 20m-5m=15 million.
Therefore, our equation, y =a+bx, would be y= 15+5x.
Given this equation, we can be able to find out:
The amount of sales arising from a given expenditure in advertising. The amount of advertising necessary to generate a desired amount of sales revenue.

Example 1

The sales revenue generated by 10 million advertising expenditure would be:
Y=15+(5x10)
=15 +50
Y=65m

Example 2

If Quality Supermarket targeted sales revenue of 75 million FRW, determine the advertising expenditure that it would have to incur.
Solution y = a + b x
75 =15+5x
60=5x
x=12

Therefore, the amount of advertising needed to yield 75 million FRW would be 12 million FRW.

(b) Sketching linear graphs

The data from the table on sales and advertising for Quality Supermarket (Activity 4.1) can be plotted on a graph.
The graph has two sides called axes. The upright side (side having an arrow pointing up) represents the vertical axis. The bottom side (side having an arrow pointing to the right) represents the horizontal axis.
The values of the dependent variable (sales revenue in this case) will be represented on the horizontal axis. The values of the independent variable (advertising expenditure in this case) will be represented on the vertical axis.

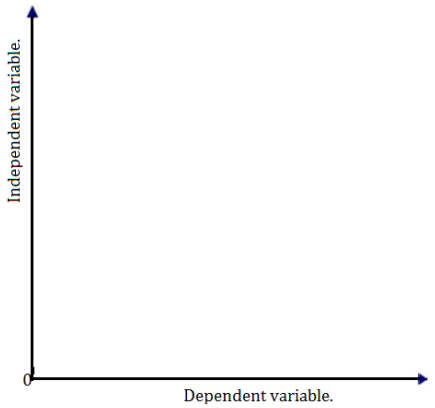


Fig 19.1: A Cartesian plan

Values on the horizontal axis increase as we move to the right, from the point of origin. Similarly, values on the vertical axis increase as we move upwards, from the origin.

In the case of Quality Supermarket, y stands for sales while x stands for advertising.
Each row of the table gives us a pair of numbers, or a combination of x and y. We have 1 and 20, 2 and 25 and so on. These pairs are written as (1, 20), (2, 25) ...
To plot the pair (x, y) begin at the origin where the two axes meet. Count rightward x units on the horizontal axis and then count y units above this level, parallel to the vertical axis. Mark this spot. Continue with the process for the different pairs of x and y. After identifying and marking all the pairs, then connect the pairs. This can be done by drawing a line that passes through all the points.
Using the example of Quality Supermarket, all the pairs are along the same so the slope of the line.

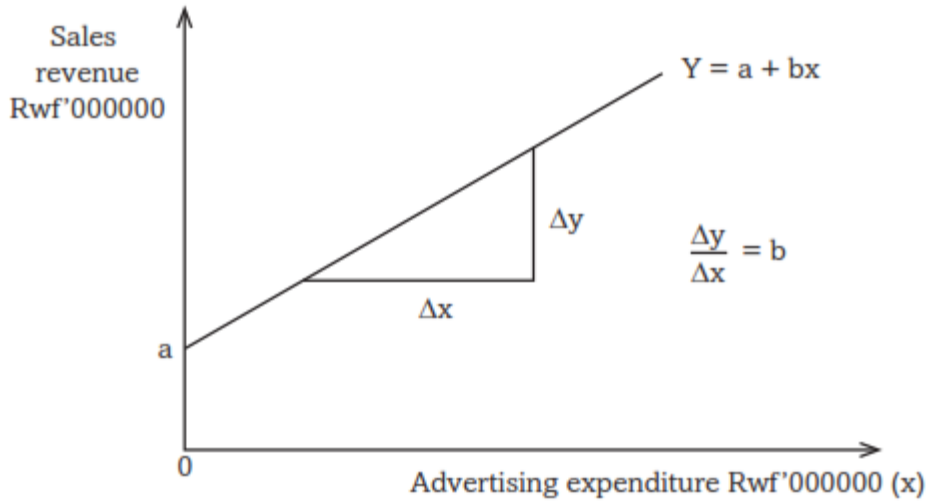


Fig. 19.2: Graph of a linear equation showing how to calculate gradients
The slope 'b' tells us the rate at which the y variable changes with a unit change in x.

Recall
What do we call 'b' in Mathematics?
Note that 'a' has no effect on the slope of the graph.
Let us point out that the value of 'a' can be either positive, negative or zero. When the value of 'a' is positive, the graph will intercept the vertical axis above the origin.
When the value of 'a' is negative, the graph will intercept the vertical axis below the origin.
When the value of 'a' is zero, the graph will intercept the axis at the origin.

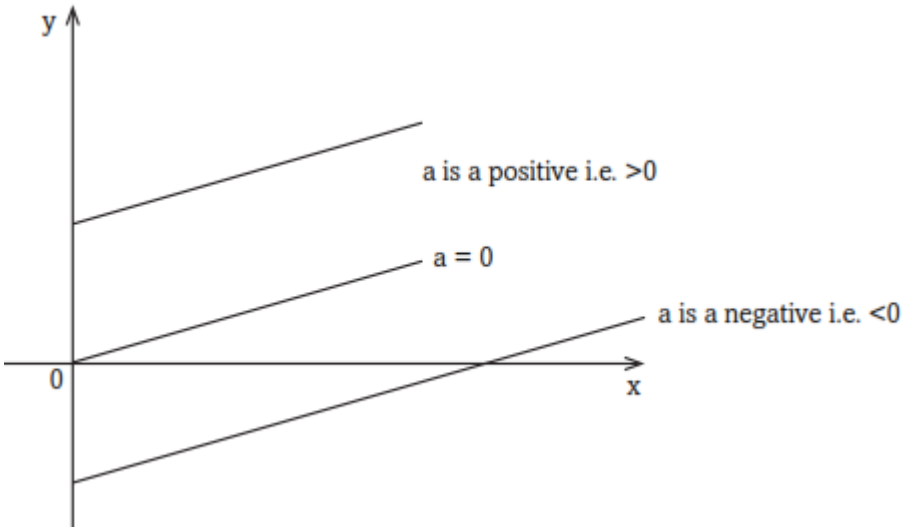


Fig. 1.3: Graph of a linear equation when the line passes through, above and below the origin

Examples of linear equations in economics
There are several types or examples of linear equations as used in Economics.
The main examples are:

1. The production possibility frontier as seen in unit 18; a graph that shows combinations of goods and services that can be produced with a given level of resources.
2. The demand function; an equation showing the various quantities of goods purchased by customers at given prices.
3. The supply function; an equation showing the various quantities of goods brought to the market by suppliers at a given market price.
4. Isocost line; a graph showing different combinations of labour and capital that can be purchased by a given firm.

The demand curves

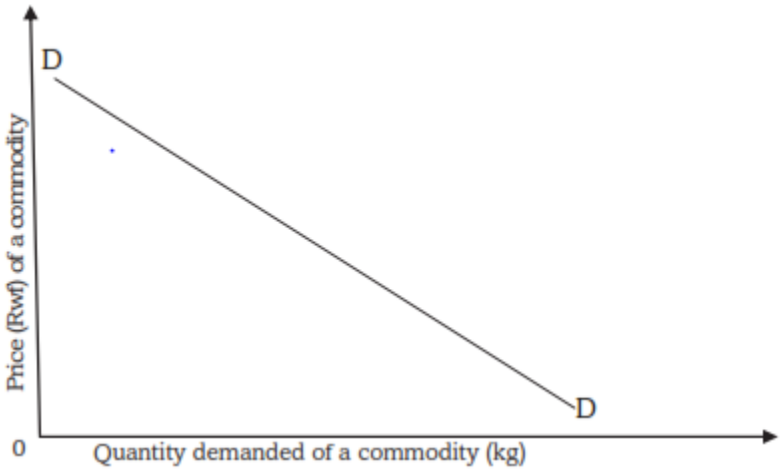


Fig 1.4: Demand curve

The demand curve shows the relationship between the quantity demanded of a commodity and the price of that commodity. This is a negative slope. It shows that an increase in the independent variable (price) leads to a decrease in the dependent variable (quantity demanded).

The supply curve

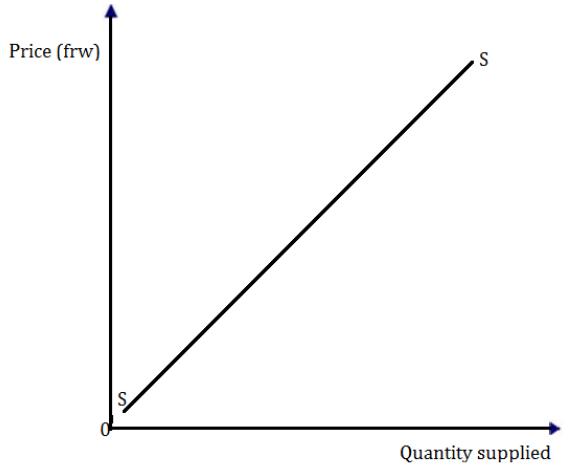


Fig: Supply curve

The supply curve shows the relationship between the quantity supplied of a commodity to the market by suppliers and the price of the commodity. This has a positive slope. It shows that both the price (the independent variable) and quantity supplied (the dependent variable) change in the same direction.

Nonlinear equations and nonlinear graphs

Non-linear algebraic equations are polynomial equations of a degree that is greater than one. They are mathematical relationships that describe non-linear graphs. They take various types. For instance, we have the following main non- linear equations:

(a) **Polynomials**
(b) **Logarithmic equations**
(c) **Conic equations**
(d) **Exponential equations**

Features of nonlinear equations

1. In nonlinear equations, the independent variable has a certain power to it. If we have **y** as the dependent variable and **x** as the independent variable, the relationship could be:

$y = x^2$

or it could be

$y = a+x^3$,

where

'**a'** could be a constant figure and would constitute the Intercept on the y-axis in a chart.

2. The features of nonlinear equations vary, depending on the gradient or slope of the curve.
3. Where there is one independent variable whose power is greater than one, the dependent variable will increase at an increasing rate as the power of the independent variable rises.

For example if $y= x^2$, and the values of x are 0, 1, 2, 3, 4, 5

Then the value of y will be 0^2, 1^2, 2^2, 3^2, 4^2, and 5^2 =0, 1, 4, 9, 16 and 25.

The graph from the equation above would curve upwards as y increases at a faster rate than x. This is shown below.

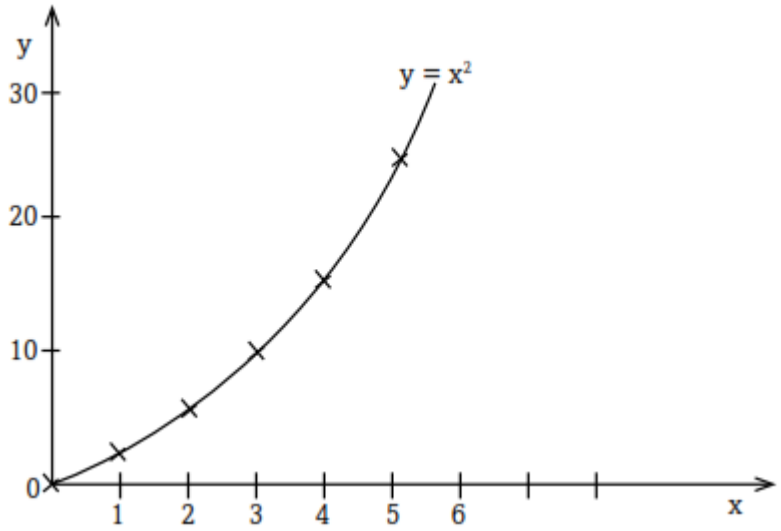


Fig 4.6: A non-linear graph of second degree polynomial

4. Where the power of the independent variable (x) lies between 0 and 1, then the value of y will also be increasing as x increases.

Example

When the equation is $y= x^{0.5}$, If x= 1, 2, 3, then

$y=1^{0.5}$, $2^{0,5}$. $3^{0,5}$

= 1, 1.414 , 1.712

X	1	2	3
$Y = x^{0.5}$	1	1.414	1.712

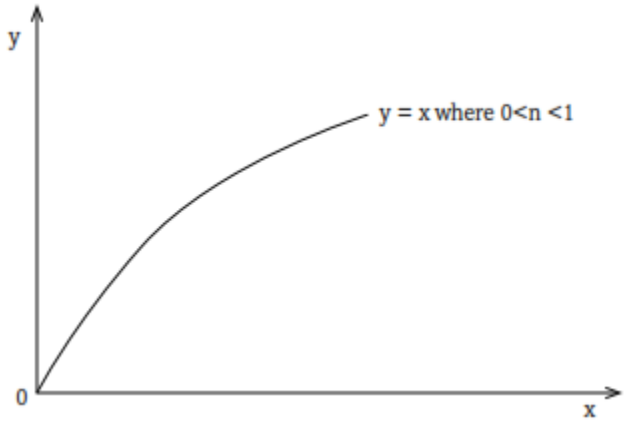


Fig. 19.7: A non-linear graph where the power lies between 0 and 1

5. Where the power of y is negative with the value of x being positive, the graph derived would slope downwards. This graph would take a convex curve shape.

In this case, the dependent variable (y) increases as the independent variable (x) decreases.

Example;

if $y = x^{-2}$, Where x = 0 1 2 3 4, then

y = 1 0.25 0.11 0.0625

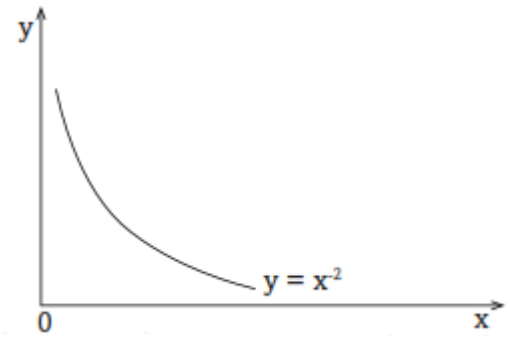


Fig.1.8: A non-linear graph where the power is negative (less than zero)

Simultaneous equations

Necessary conditions for simultaneous equations

1. There should be more than one functional relationship, between a set of specified variables such as x and y or q and p.
2. That all the functional relationships are in linear form. It is then that we try to find the value of the unknown variables in the equations. In the case where we have only two variables in the equations, it is then possible to subject the equations to graphical solutions.

Simultaneous equations can be solved using various methods.

Methods used in solving simultaneous equations

a) The substitution method

This method entails representing one unknown in terms of the other unknown.

Example

Find the values of x and y in the following equations using

The substitution method.

20 x + 6 y =500…….. (i)

10x – 2 y = 200……..... (ii)

If we arrange equation (ii) so as to define or represent y in terms of x, we get:

10x - 200=2y

Dividing through by 2, we get:

5x-100 =y

We then substitute the new value of y (obtained in equation (ii)) in equation (i) as follows:

20x +6y=500..... (i) Now becomes

20x +6(5x-100) =500..... (iii)

On opening the brackets, we get:

20x +30x -600=500

On collecting like terms, we get:

50x=1100; x=22

We would then substitute the value of x in equation (ii) to get:

220- 2y = 200

220 - 200 = 2y

20= 2y

y=10

b) Row operation method

We can also use the row operation to get the same result. Using the above example,

Where 20x + 6y =500 …….. (i)

10x – 2 y =200…….. (ii)

Multiplying equation (ii) by 3, we get: 30x - 6y=600…… (iii)

Adding equation (iii) to equation (i), we get 50x =1100 $\Rightarrow$ x =22

We then substitute for x in any of the equations to get y=10.

We can apply the concept to solve for demand and supply relationships, when given the demand and supply functions.

Note: Unlike in the usual linear relationship between the dependent and independent variables, in this case, our relationships are expressed in a reversed manner.

For example, **p=f(q)** and not **q=f(p)**. The dependent variable is on the horizontal axis while the independent variable is on the vertical axis. This is because price is normally measured on the vertical axis. The principle is the same and the idea is to get the true relationship of the variables.

Therefore, if we are given the following demand and supply equations:

P= 840- 0.4q as a demand schedule and P =120+0.8 q as a supply schedule,

We can solve for both p and q

(i) Multiplying demand schedule by 2, we get: 2P= 1680 -0.8q

(ii) Adding the new demand schedule to the supply schedule, we get:

3P=1800$\Leftrightarrow$ P=600

(iii) Substituting for P in any of the equations, we get: 600=120+0.8q

0.8q=480

8 q =4800 $\Leftrightarrow$ q=600

We could also use the equation method to solve for the demand and supply quantities such that:

840-0.4q=120+0.8q

840-129=1.2q

720 =1.2 q$\Leftrightarrow$ q=600

Substituting for q in any of the two equations, we get: P=600

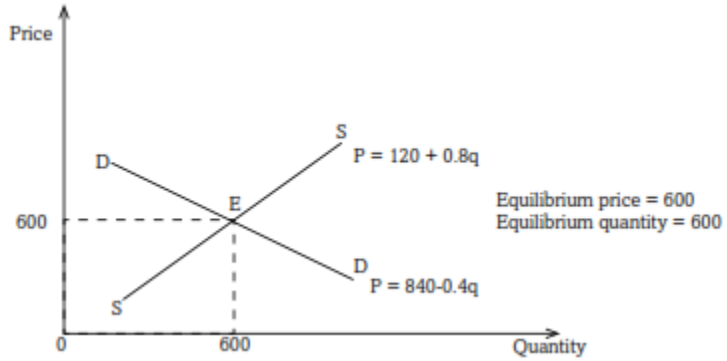


Fig. 19.9: Graph showing equilibrium price and equilibrium quantity

Differential equations and graphs

A differential equation is a mathematical equation that relates some function with its derivatives. Functions are usually represented by physical quantities. Derivatives represent the rates at which the physical quantities change. Thus differential equations define the relationship between the two.

Differential equations have types. For instance:

- Ordinary differential equations.
- Partial differential equations.

An ordinary differential equation (ODE) is an equation that contains a function of one independent variable and its derivative. These equations can either be linear or nonlinear. For instance, y = 2x + 8.

Then, $\frac{\mathrm{d}x}{\mathrm{d}y} = 8$

A partial differential equation (PDE) is a differential equation that contains unknown multivariable functions and their partial derivatives. These equations are used to formulate problems involving functions of several variables. For instance, y = 2x∂x + 8

Linear and non-linear differential equations

Maxima and minima points

Maximum (maxima) and minimum (minima) points have an important application in Economics.

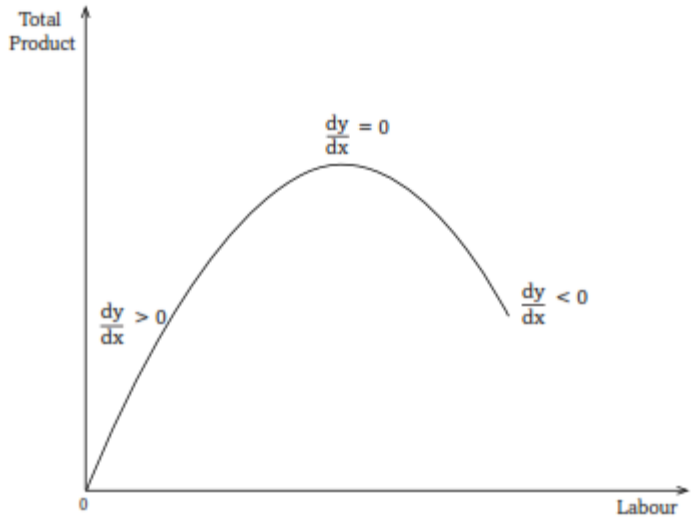


Fig 19.13: A graph showing its maximum point

Economic application

Marginal revenue function (MR)

$$\text{MR} = \frac{\Delta TR}{\Delta Q}$$

Marginal cost function (MC)

$$\text{MC} = \frac{\Delta TC}{\Delta Q}$$

$$\text{Marginal utility} = \frac{\Delta TU}{\Delta Q}$$

At maximum profits

$$\frac{\Delta TC}{\Delta Q} = 0$$

At maximum Revenue

$$\frac{\Delta TR}{\Delta Q} = 0$$

Example

Given A total revenue function

$TR = 120Q-2.5Q^2$

Find marginal revenue function.

The derivative is denoted dy/dx or f(x) and is given by dividing the change in y Variable by change in change in x variable.

$$\frac{\Delta x}{\Delta y} = \frac{\text{change in y}}{\text{change in x}} = \frac{\mathrm{d}x}{\mathrm{d}y}$$

Rules of differentiation (Elementary level/basic level)

Constant rule if given a function y=k where k is a constant, then dy=0

$\frac{\mathrm{d}x}{\mathrm{d}y}=0$

Power function rule

Given a function $y=x^a$, Then,

$$\frac{\mathrm{d}x}{\mathrm{d}y} = (ax)^{a-1}$$

Power function multiplied by a constant If given y=Axb

Then, $\frac{\mathrm{d}x}{\mathrm{d}y} = b(\mathrm{Ax})$

The sum rule.

Deviate of the sum of two or more functions equals the sum of the derivatives of the functions if W(x) = W(x) + Y(x)

Then $\frac{\mathrm{d}x}{\mathrm{d}y} = \mathrm{W1(x)} = \mathrm{W1(x)} + \mathrm{Y1(x)}$

The difference rule

The derivative of the difference of two or more functions equals the difference of the derivatives of the functions.

If U(x) = u(x)-g(x)

Then

$\frac{\mathrm{d}x}{\mathrm{d}y} = \mathrm{U(x)} = \mathrm{u1(x)} - \mathrm{g1(x)}$

Both ordinary and partial differential equations are broadly classified as linear and non linear equations. A differential equation is linear if and only if the unknown function and its derivative appears to be power 1. Otherwise it is non linear. For instance, $\frac{\mathrm{d}x}{\mathrm{d}y} = 8$ is a linear differential equation. dx

y = 8x + C is a non linear differential equation.

In Economics, differential equations are essential in computing marginal values of a nature

$\frac{\mathrm{d}x}{\mathrm{d}y} = 8$

For example

$Marginal\ revenue = \frac{\Delta \text{total revenue}}{\Delta \text{Quantity sold}}$, This is the additional revenue accruing to the firm from the sale of an additional unit of output

$\text{Marginal product} = \frac{\Delta \text{Total product}}{\Delta \text{Variable factor}}$, This is the additional/extra units of output that are derived from the employment of an additional unit of a variable factor.

$\text{Marginal cost} = \frac{\Delta \text{Total cost}}{\Delta \text{ Quantity produced}}$, This is the additional cost of producing and extra unit of output.

Fractions in economics:

A fraction is an expression of numbers with a numerator and a denominator. A fraction is written as; $\frac{x}{y}$, $\frac{n}{p}$, $\frac{z}{m}$. etc. or $\frac{1}{2}, \frac{3}{4}, \frac{10}{70}$, etc. The numerator represents part of the whole unit and denominator is the whole. In a class for instance, if you are 60 students and half of them are boys, then we will say 30 out of 60 or half the class are boys. Or $\frac{30\ boys}{60\ students}$.

Activity

Simon, a large-scale farmer, has the following livestock on his farm:

1) 50 dairy cattle, 40 of which are currently being milked;
2) 100 beef cattle, 60 of which are cows;
3) 200 goats, 40 of which are he- goats.

Required:

i) The total number of livestock that the farmer has.
ii) The total number of male livestock.
iii) The total number of cattle.

b) Determine the fraction of

i) she goats to the total goats on his farm.
ii) beef cattle to the total cattle.
iii) He goats to total goats
iv) Diary cattle to the total cows.

c) Discuss the reasons that may have made Simon to:

iii) i) Keep more goats than cattle on his farm.
iv) ii) Keep more beef cattle than dairy cattle.

Ratios

Simply stated, a **ratio** is a number representing a comparison between two things that are in a way related. It can be represented as $\frac{x}{y}$ or $: y$, 4: 12, 21:45, 40:50 etc. Ratios can be further simplified to the lowest form possible e.g.;

4:12 = 1:3; 21:45 = 7: 15, 40: 50 = 4:5 etc.

For example, if we look at the farm of Simon in the activity given at the beginning of this unit, we see that there are 40 dairy cattle that are being milked out of 50. Therefore, the number of dairy cattle that is not being milked is 10. From this information, we can derive the following ratios:

i) The ratio of the number of cows being milked to the total number of dairy cattle is 40:50. This can also be expressed in the form of a fraction as 40/50.
ii) The ratio of the dairy cattle that are not being milked to those that are being milked is 10:40. This ratio can also be expressed as 10/40.
iii) The ratio of the number of the cattle that are not being milked to the total number of the dairy cattle is 10:50. This ratio can also be expressed as 10/50.

The ratio derived can be further simplified to the lowest form possible such that in i), we would get a ratio of 4:5, in ii) we get 1:4, while in iii), we get 1:5

Activity

Work out the following:

(a) For a sugar-producing firm, the ratio of total fixed costs to total costs is 4:10. Determine value of its total variable costs if it spends 40 millions FRW as fixed costs.
(b) In a class, the ratio of girls to boys is 7:3 and the ratio of day scholars to borders (both girls and boys) is 2:8. If the number of boarders is 400 students, determine the number of and girls in this class.
(c) Mbabazi works with Rwanda Environment Authority and consumes 400000 FRW of her net salary per month. If the ratio of her savings to net salary is 6:20, determine how much she saves.

Activity

From the information given in above, determine:

(a) The ratio of beef cattle to the total number of cattle in the farm.
(b) The ratio of bulls to cows
(c) The ratio of cattle to goats in the farm.
(d) The ratio of the he goats to the she goats.

Proportions

A proportion is the quantity of a given item that is part of the whole amount or number of that item. For example, supposing Mwiza who earns 200,000frw a month saves 100,000frw every month. Then the proportion of income saved by Mwiza is 100,000frw out of 200,000frw. It is further simplified to 1 out 2. We can therefore say that out of every 1frw that Mwiza earns, she saves 2frw. This is the marginal rate of saving by Mwiza.

At the macro level, we could also be able to determine the proportion of the total budget that the Government spends on either education or on health or on armament. In this way, we could be able to gauge whether resources are being optimally allocated or not.

Percentage

Percentage is a way of expressing the magnitude of a given quantity in relation to 100 such quantities. It shows the amount, number or rate of something as part of a total of 100. Any quantity or fraction or proportion expressed as a percentage must have the symbol %.

At the work place, it would also be more meaningful to talk of the number of female employees in percentage terms as a way of determining the extent of equity in employment. It is also more meaningful to the common person when changes in certain economic parameters are expressed in terms of percentages rather than in absolute terms. We are therefore more comfortable when told of a 10% increase in the cost of living or a 20% increase in the level of wages.

In microeconomics, percentage is mainly used to determine the degree of changes in:

- Price
- Quantity
- Elasticity
- Costs
- Profit

In macroeconomics, calculation of percentages is mainly done to determine macroeconomic indicators like:

- Gross domestic growth (GDP)
- Inflation rates
- Unemployment rates

Activity

Work out the following:

(a) Umuhoza spent 20000 FRW of her monthly salary on transport. Express this as a percentage of her salary if she earns 250000 FRW monthly.

(b) In a class of 40 students, 25 are girls. Express the number of boys as a percentage of the whole class.

(c) Given that the price of commodity X increased from 500 FRW to 850 FRW per unit, what is the percentage change in price of commodity X?

(d) Twahirwa and Umuhoza work for KSW Ltd. Their salaries were increased last month. Twahirwa now earns 200000 FRW up from 100000 FRW. On the other hand, Umuhoza now earns 500000 FRW up from 370000 FRW. Compare their increments and discuss who got a bigger increase. Explain your answer.

Activiy

Refer to Example given in this unit, determine:

a) The percentage of the he-goats to total number of goats on the farm

b) The percentage of the bulls to the total number of beef cattle on the farm.

c) Interpret the percentages calculated in (a) and (b) above.

Reciprocals

The reciprocal of a number would be given by dividing 1 by that number. For example, the reciprocal of 4 would be 1/4. In the case of fractions, the reciprocal would be derived by inverting the fraction. Thus, the reciprocal of 2/5 would be 5/2.

The concept of reciprocals is widely applied in economic analysis. For example, it is used in the calculation of the multiplier in banking and investment decisions. In such a case, the multiplier is determined by calculating the reciprocal of the marginal propensity to save. This is based on the assumption that people's income is spent on either consumption or saving. The proportion of the income that would be spent on saving is what would be referred to as the marginal propensity to save.

Averages and index numbers

Averages

Average refers to the centre of a series of data. It is one of what is commonly referred to as measures of central tendency. It is found by adding the values of the data provided and then dividing by the total number of values. For example, if we are given the weekly sales of a shopkeeper as follows:

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
$90	$120	$80	$60	$60	$150

Then the average sales for the shopkeeper would be: $103.3.

(Obtained by adding the daily sales, then dividing the sum by six, the number of days).

Average is similar to **arithmetic mean**. It is calculated as the sum of items divided by number of items. It measures how much does a single variable contribute to a total. i.e $\frac{\mathbf{S}um\ of\ items}{Number\ of\ items}$,

In Economics we are interested in variables like

a. **Average costs** $(\mathbf{AC}) = \frac{\text{Total cost}}{\text{Output}} = \frac{\text{TC}}{\text{Q}} = \frac{\text{TFC+TVC}}{\text{Q}}$, This is the cost per units of output.

How much expense does producing each unit of output take?

b. **Average product** $(\mathbf{AP}) = \frac{\text{Total cost}}{\text{Ou}\mathbf{Variable\ factor}} = \frac{Q}{\angle} or\ \frac{\text{Q}}{\text{C}}$, This is output per unit of the variable factor.

For instance, if you employ ten workers (units of

labor) and all together carry 1000 bricks in an hour. How many bricks will each person have carried?

c. . **Average revenue** $(\mathbf{AR}) = \frac{\text{Total revenue}}{\text{Output}} = \frac{TR}{\mathbf{Q}} = \frac{\text{Q}}{\text{C}}$, This is revenue per unit of output sold. How much income does each unit of output produced and sold bring to the firm?

Index Numbers

Index numbers in Economics are usually used to establish changes in the cost of living of the people. They are usually constructed to show the difference in the price of a commodity from one period to another. In constructing such index numbers, we select one year which we belief to have been relatively stable, and call it the **base year**. We give this year an index value of 100. For example, if the price of sugar in 2010 was $1.00 while in 2014 it rose to $1.2, then the price would have risen in the period by 40%.

If we take 2010 to be the base year, then the index value for 2014 would be 140. The figure 140, which relates the two prices for the two years, is called the **price relative**. If this was true for a wide range of commodities, then we could assert that the cost of living has risen by 40% between 2010 and 2014.

To determine such change in the cost of living, we construct what is called a **consumer cost of living index**. In this case, we consider a range of commonly used consumer products and get their relative price changes in the period under review. We then get the average of this price changes so as to determine an overall change in the cost of living.

In Economics, index numbers are used in prices of commodities to arrive at **simple price index**, especially to determine the **consumer price index.** They are also used to determine the rate of human development to derive **human development index**.

Absolute values

This is the measure of quantity irrespective of direction or nature. Or the absolute number is the actual number without any consideration of the sign. In making calculations, we come up with a figure that has either positive or negative. However, such a sign may not be of any importance for making the desired decision. The magnitude of the number without considering the sign is what may be important. E.g. if we have -4, we look at $|4|$ without the negative sign. This is the idea behind the concept of absolute numbers.

In Economics, when we talk about elasticity of demand, the coefficient of elasticity could be either positive or negative. However, for decision-making purposes, it is the absolute number that is considered.

Activity

Given that the price of a commodity increased from 200 to 500 and quantity demanded increased from 2-5 per day. Calculate the P.E.D and the type of commodity.

Unit 5: THEORY OF DEMAND.

Introduction to price theory.

The price theory is the basis of Economics and it is the study of prices.

Price is the relative value of an item expressed in monetary terms.

Price determination in the market

1. **Haggling/bargaining**: This refers to the negotiation process between buyers and sellers about the price of a given commodity. The seller keeps on reducing the price and the buyer continues to increase the amount he/she is willing to pay. The process continues until when the buyer and the seller agree on the same price.
2. **Fixing prices by signing treaties**: This is where buyers and sellers come together to fix a price for a commodity through signing an agreement. The price agreed upon can later be revised by amending the treaty.
3. **Sales auctioning**: This takes place when there is one seller and many buyers competing for the commodity by offering high prices. The commodity is taken by the highest bidder i.e. one who pays the highest price.
4**. Resale price maintenance**: This is where prices of commodities are fixed by the producers or manufacturers up to the final consumer. A uniform price is set at all levels of distribution thus there is no bargaining e.g. prices of airtime, newspapers, magazines, soft drinks etc.
5. **Fixed prices by Government**: This is where prices are fixed by the government. This price can be either minimum price or lmaximum price depending on the prevailing conditions in the economy. It is most common with merit goods.
6. **Market forces of demand and supply**: This is where the price in the market is determined by the market forces of demand and supply. .
7. **Price cartels**:This is where producers producing similar commodities agree on a price at which their commodities should be sold. It is also called perfect collusion.
8. **Price leadership**: This is where a leading firm (the price leader) sets a price for its goods and services and other firms follow the same price. It is also called imperfect collusion.

Factors that determine prices in the market.

1. **Cost of production**: Cost of Production refer to the expenses incurred by a producer in the process of production. Therefore, the higher the costs of production, the higher the price for final goods and services in the market and vice versa.
2. **Level of competition in the market**: Where there are many producers in the market for a similar product, there is stiff competition, supply is much, which makes prices to be low in the market by most firms so as to attract customers easily and faster. But where there are a few sellers or one seller in the market, prices tend to be high as supply of commodities tends to be low.
3. **Government policy**: Government through price legislations can influence the level of prices especially if it is an essential but scarce or strategic to the economy. E.g. water, electricity, fuel etc.Therefore, the government may fix a minimum price or a maximum price depending on the prevailing economic conditions in the country.
4. **Demand and supply of the commodity**: When the demand for the product seems to be higher than the output, the producer will raise the price. However, if the output is more than the demand, and in order to capture the market, the price is slightly reduced.

5. **The type of the product**: Manufactured or processed commodities have a higher price than unprocessed ones. Similarly, branded commodities are always highly priced than those which are unbranded.

Demand

Demand is the desire backed by the ability and willingness of a consumer to buy a commodity in a particular market at a given price in a given period of time.

Or It is the quantity of a commodity that buyers are willing and able to buy at a given price in a given period of time.

Effective demand refers to the actual buying of the commodities. Or it's the demand which is backed by the ability to pay (money).

Latent demand is the demand that is not backed by ability to pay (money).

The law of demand.

The law of demand states that **"Ceteris paribus, the higher the price of a commodity, the lower the quantity demanded and the lower the price of commodity, the higher the quantity demanded".** The law can be explained by the demand schedule and demand curve.

The demand schedule

This is a numerical representation or table showing quantities demanded of a given commodity at different price levels**.** A demand schedule can be for an individual buyer of a given commodity or it can be for all the consumers in the market for same commodity.

For example;

a) Individual demand schedule for pineapples

Price (Frw)	Quantity in kilograms
1200	5
1000	10
800	15
600	20
400	25
200	30

b) Market demand schedule for pineapples.

Price (frw)	**Consumer A**	**Consumer B**	**Consumer C**	**Market demand**

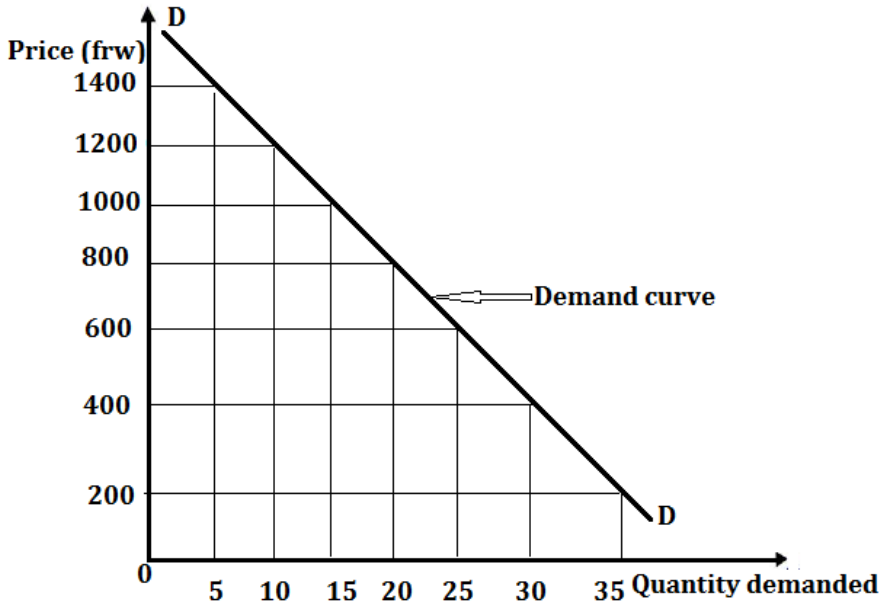
1400	5	2	3	10
1200	10	4	6	20
1000	15	6	9	30
800	20	8	12	40
600	25	10	15	50
400	30	12	18	60
200	35	114	21	70

The demand curve

The demand curve is the graphical representation of the quantities of a commodity demanded at various prices in the market at a given period of time. It is a locus of points showing different quantities demanded by the consumer at different prices. It is derived from a demand schedule. It is drawn on the assumption that the higher the price the lower the quantity demanded and vice versa; other factors remaining constant. It depicts the law of demand.

Using the above individual demand schedule, a demand curve can be illustrated as below.

Illustration of a demand curve



From the above figure, DD is the demand curve. At a lowest price 200frw quantity demanded is high (35 units) while at a highest price 1400frw less is demanded (5frw).

A demand curve can be for an individual obtained from an individual demand schedule or for all the market demand by all individuals for a given commodity from a market demand schedule. A market demand curve appears flatter than an individual demand curve because it is a summation of all individual demands of a given commodity.

Factors that determine quantity demanded of a commodity.

1.**Price of the commodity**: The higher the price of a commodity; the lower the quantity demanded and the lower the price of a commodity, the higher the quantity demanded, ceteris paribus.

2.**Price of other commodities**: The price of one commodity may affect quantity demanded of another commodity. The amount of a commodity demanded can be affected by changes in price levels of related commodities in 2 ways:

a) **Substitute commodities**: Substitutes are commodities that serve the same purpose. Whenthe price of one commodity increase, , the demand of another goes higher and vice versa. For example, when price of OMO increases, demand for NOMI also increases.

b) **Complementary commodities**: Complementary commodities are goods that are jointly demanded/ bought e.g. paper and pen, shoe and shoe polish, paraffin and lamp, phone and sim-card, guns and bullets, cameras and films, car and fuel etc. In case of these commodities one is almost useless without the other. Thus, when the price for one falls, people buy more of it and as they buy more of it, the demand for its complement increases. E.g. When the price of cell phones reduce, more people buy phones and this increases the demand for sim cards. Or when the price of cars increase, the demand for cars reduce leading to a corresponding decrease in the demand for fuel.

3.**Level of consumer's income:**

a) **For a normal good,** an increase in consumers' income will lead to an increase in quantity demanded of a normal good while reduction in consumers' income will lead to low quantity demanded ceteris peribus. E.g. bread, rice etc. they have positive income elasticity of demand.

b) **For inferior goods**, the higher the income, the lower the quantity demanded and lower the income, the higher the quantity demanded ceteris paribus. They have negative income elasticity of demand.

c) **For essential commodities or necessities**, the changes in incomes don't affect quantity demanded. They have zero income elasticity of demand.

4.**Government policy:** Government policy like taxation affects quantity demanded. For example, when taxes are increased, the quantity demanded reduces and when taxes are reduced, (there is subsidization) quantity demanded increase, holding other factors constant.

5.**Price expectation**: If the consumers expect an increase in price of a certain commodity in future, they tend to buy too much of that commodity now which increase its quantity demanded. If they expect a reduction in price of a commodity in future, they buy less of that commodity now reducing the quantity demanded.

6.**Seasonal factors**: When the season is favorable to a commodity, quantity demanded increases e.g. the demand for umbrellas increases during rainy season, demand for Christmas cards increases during Christmas seasonetc. When the season is not favorable the demand of that commodity reduces.

7.**Inflation**: Inflation leads to high prices which reduces demand and vice versa.

8.**Tastes and preferences**: When the tastes are favorable towards certain commodity ies, the demand of that commodity will be high and when unfavourable, the demand will be low.

9.**Income distribution patterns in an economy**: Other factors equal, when incomes are evenly distributed in an economy, the demand for households in the economy will be high and when unevenly distributed, demand will be low.

10.**Size of the population**: A higher population size has a higher purchasing power than a small one thus leading to high demand and vice versa.

11.**Fashion**: If goods are on fashion, they will be highly demanded unlike when they are out dated or out of fashion.

12.**Habit**: Some commodities are consumed out of habit For example if it is a habit for someone to consume beer, he or she will buy more of it and vice versa.

13. **Credit availability**: If credit is available at low interest, people will be able to access it and borrow for consumption thus increase their quantities demanded and vice versa.

14.**Bandwagon**: Some people will always demand more or less of a commodity because their friends have bougòlòht more or less of it thus increasing or decreasing quantity demanded of it.

15.**Amount of advertising**: Highly advertised commodities attract more customers thus increasing their quantity demand and vice versa. This is because advertising influences people's decision to buy highly.

16.**Social cultural and political factors**: Demand for most commodities tend to increase during festive seasons like Christmas, Easter, Eid, independence. However, some social culture and political factors can lead to less demand of a commodity. For example, some cultures, religions forbid their people to consume some commodities thus leading to less quantity demanded of them.

17.**Education:** This influences people's tastes and preference. Where there is a difference in people's level of education, their consumption levels over certain commodities differ. For example, highly educated people demand more of newspapers than uneducated ones.

18.**Age structure**: When the composition of a certain population is dominated by a certain age group, demand is influenced accordingly. For instance if the majority of the population are young people, demand for entertainment gadgets increases and vice versa, ceteris paribus.

Types of demand (interrelated demand):

Interrelated demand is a situation where demand for one commodity affects or is affected by demand for another commodity positively or negatively.

Types of demand

1.**Joint/complementary/twin demand**: This is demand for commodities that are consumed together for greater satisfaction such that an increase in demand for one automatically will lead to an increase in demand for the other commodity. and vice versa. e.g. cars and petrol, phone and sim card, pen and ink, camera and films, toothpaste and toothbrush etc.

2.**Competitive demand**: This refers to demand for commodities that serve the same purpose (substitutes) such that an increase in demand for one will lead to a decrease in demand for the other e.g. NOMI&OMO, Colgate and Close up, beans and peas, blue band and jam etc.

3.**Composite demand**: This is demand of a commodity which serve several purposes/ uses such that its total demand is got by adding up quantities demand for several uses e.g. timber, water, electricity etc.

4.**Derived demand**: This is demand for a commodity not for its own sake but as a result of its purpose it is used to serve i.e. demand for this commodity is the direct result of the demand for a commodity it is used to produce. e.g. demand for factors for production like land, labor capital as a result of demand for commodities which can be produced using these factors of production. etc.

5.**Independent demand**: This is demand for commodities which is not affected by the demand for other commodities. For example the demand for aeroplanes is not related to demand for needles, or demand for shoes is not related to for cups etc.

6.**Direct demand**: This is demand for commodities for the direct satisfaction of the consumer. Consumer goods

7. **Latent demand**: This is demand for a commodity which is not backed or supported by purchasing power.

8. **Effective demand**: This is demand for a commodity which is supported or backed by the purchasing power (cash/money).

Activity

Study the following sets of commodities and answer the questions that follow.

Set A

Butter and margarine; Tea & Coffee; Colgate & White dent; Private schools and public schools; Rice and Macrons; Potatoes and cassava.

Set B

Cars and fuel; Cars and tyres; Shoes and Polish; pen and ink; Mobile Phones and Sim Cards; Computer Hardware and Computer Software; Torch and Battery.

Set C

Wheat for producing bread, biofuels or feeding livestock; Land for farming or building houses; an iPhone used as camera, for internet access and making phone calls; Water for cooking, bathing, washing, mopping, drinking; Wool for carpets, blankets, jackets.

Set D

Shoes and phone; mattress and shirt; computer and bicycle; pen and plate; water and airtime.

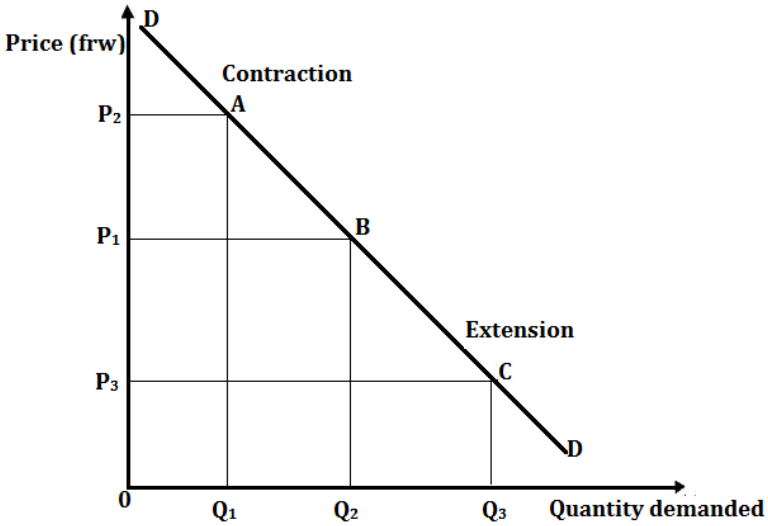
Required:

a) What economic name is given to the demand for each set of commodities A, B,, C & D?
b) Explain the relationship between commodities in each set A, B & D.
c) Explain how price changes affect demand of commodities in each set.

Change in quantity demanded and change in demand

a) Change in quantity demanded.

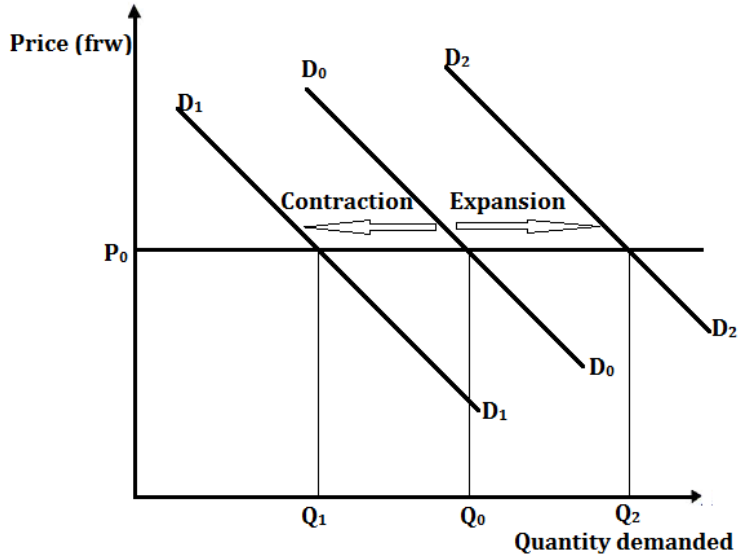
A change in quantity demanded refers to an increase or decrease in quantity demanded of a commodity due to a change in price of that commodity, other factors held constant. A change in quantity demanded can be illustrated by the movement along the demand curve upwards to the left (contraction / decrease in demand) or downwards to the right (expansion/ increase in demand) as below;



As prices fall from P_1 to P_3, quantity demanded rises from Q_1 to Q_3 and as prices increase from P_1 to P_2, quantity demanded falls from Q_1 to Q_2 .

b) Change in demand;

This refers to an increase or decrease in quantity demanded of a commodity due to change in other factors that affect demand holding price of that commodity constant. A change in demand can be illustrated by the shift in the demand curve either to the left (decrease in demand/ contraction) or to the right (increase to the demand/ expansion) as below;



An extension in demand curve i.e increase in demand from $0Q_0$ to $0Q_2$ shows a positive change in other determinants of demand holding prices constant. While **a contraction** i.e. decrease in demand from $0Q_0$ to $0Q_1$ shows a negative change in other determinants of demand holding prices constant.

Unit 6: THEORY OF SUPPLY

Supply refers to the willingness and ability of a producer or seller to bring to the market certain amounts of a commodity at a given price in a given period of time.

Or

Supply refers to the amount of goods and services that are available in the market.

Quantity supplied refers to the amount of a particular commodity that producers/suppliers are able and willing to bring to the market for sale at a certain price in a given period of time. The ability to produce commodities requires resources. The willingness to supply commodities is majorly influenced by price.

The Law of Supply.

It states that "**Ceteris paribus**, the higher the price, the higher the quantity supplied and the lower the price, the lower the quantity supplied". The law of supply is explained by the supply schedule and supply curve.

Supply Schedule;

A supply schedule is a table that shows different quantities of a commodity that a producer can supply at different prices per period of time.

Or This is a table that shows a list of quantities supplied and their respective prices. It is drawn based on the law of supply. A supply schedule can be for an individual producer or seller i.e. a table showing quantities supplied by single seller/producer at various prices or it can be for the whole market of same commodity (summation of all individual producers'/sellers' quantities in the market for a given commodity at various prices in a given period of time).

For example;

a) Individual supply schedule.

Price (frw)	**Quantity supplied (kgs)**
1000	10
2000	20
3000	30
4000	40
5000	50

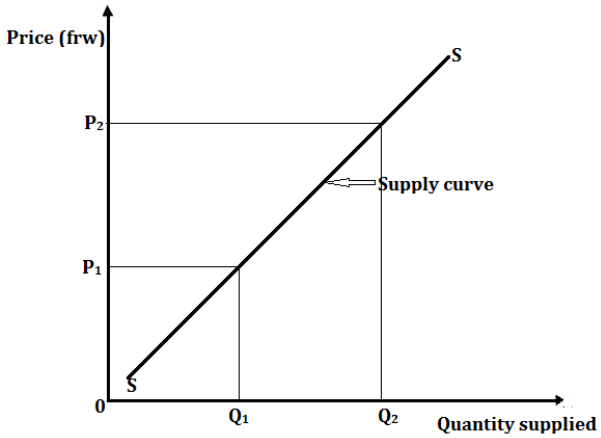
b) Market supply schedule.

Price (frw)	**Firm A**	**Firm B**	**Firm C**	**Market supply**
1000	10	5	15	30
2000	20	10	30	60
3000	30	15	45	90
4000	40	20	60	120
5000	50	25	75	150

The Supply Curve

A supply curve is a graph that shows different quantities of a commodity that suppliers/producers are able and willing to bring to the market at different prices over a given period of time. It is a graphical representation of the law of supply. It is upward sloping from left to right illustrating the law of supply. A supply curve can be for an individual supplier or for the whole market.

Illustration of an individual supply curve;



The supply curve is upward sloping showing that as the price increases from OP_1 to OP_2, quantity supplied also increases from OQ_1 to OQ_2. This illustrates what the law of supply states. The supply curve may not pass through the origin because suppliers usually have a minimum price (reserve price) below which they aren't going to supply or sell. .
For example, the minimum price in the above curve is P_1. The quantity therefore remains at zero until that minimum price is reached.

Factors that determine quantity supplied of a commodity.

1. **Price of the commodity**: Ceteris paribus, the higher the price the higher the quantity supplied and the lower the price the lower quantity supplied
2. **Number of firms or producers**: The more producers are engaged in production of a given commodity the more of that commodity will be supplied and if producers are few the quantity supplied of that commodity will be low.
3. **Goals or objective of a firm**: If the aim/objective of the firm is sales maximization more will be supplied and if it is profit maximization less will be supplied.
4. **Cost of production**: The lower the cost of production, the higher the quantity supplied and the higher the cost of production, the lower the quantity supplied.
5. **The level of technology**: The more advanced the technology is, the more the quantity supplied and the less advanced technology is, the less the quantity supplied
6. **Demand for the commodity**: There is a direct relationship between demand for a commodity and its supply. i.e. an increase in demand for a commodity makes it more profitable as this will increase its price. Thus, an increase in demand encourages producers to produce more output to

satisfy the available demand. On the other hand, a decline in demand for a commodity discourages its production and supply.

7. **Government policy**: if government imposes high taxes on producers, production and supply reduce and where the government subsidizes producers, production and supply increase.

8. **Seasonal factors**: If the season is favourable for a given commodity supply will be high and if the season is not favourable, the quantity supplied will be low. .

9. **Degree of freedom of entry of new firms in production**: Some industries have entry barriers in form of startup costs, patents, technology, limit pricing by the already existing firm. When there is freedom of entry of new firms into the industry supply increases while restricted entry of new firms keeps supply low.

10. **Time**: Supply is high in the long run and in short run the supply is low. It is very easy for producers to supply more of a commodity with in long period of time, and they can only produce less of that commodity with in short period of time.

11. **Political climate** i.e. Peace and stability in the country will encourage investment, production and supply of goods and services while instability and insecurity in the country will discourage investments, production and supply of goods and services.

12. **Gestation period**: This is the duration between the time when the decision to produce and supply a commodity is taken and the time output is actually produced and supplied. A long gestation period reduces supply in the current period. A short gestation period increases supply in the current period.

13. **Level of infrastructural development**: Well or highly developed infrastructure promotes investment, production, movement and supply of commodities while poorly developed infrastructures discourages investment, production movement and supply of commodities.

14. **Size of the population/market**: the bigger the size of the population, the bigger the size of market thus the higher the quantity supplied and vice versa ceteris paribus.

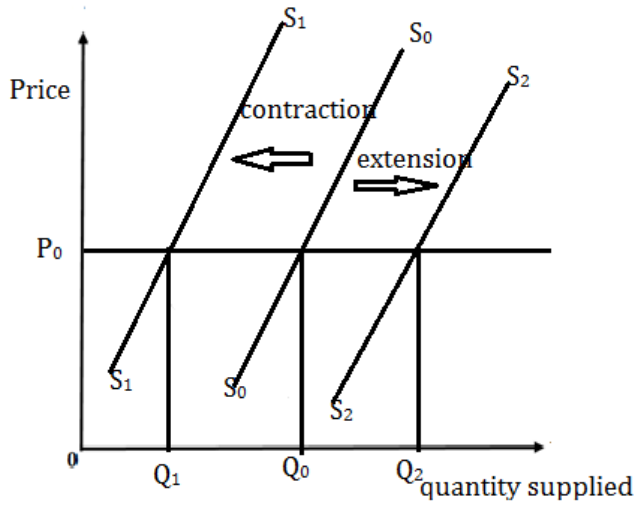
Types of supply

1. Joint supply: This is where two commodities are supplied together and an increase in supply of one will cause the supply of the other to increase, e.g. sugar and molasses, mutton and wool, cotton and cotton seeds, beef and hides etc. **For example**, if demand increases for wool, and sheep farmers therefore raise more animals for wool, there will be a related increase in sheep meat production. This increased production will lead to greater meat supply and potentially lower prices.

2. Competitive supply; This is where commodities are related in such a way that an increase in production of one commodity means a reduction in output of the other e.g. supply of meat and milk, cash crops and food crops, chicken and eggs. Etc. Goods and services in competitive supply are alternative products that a business could make with its factor resources of land, labour and capital

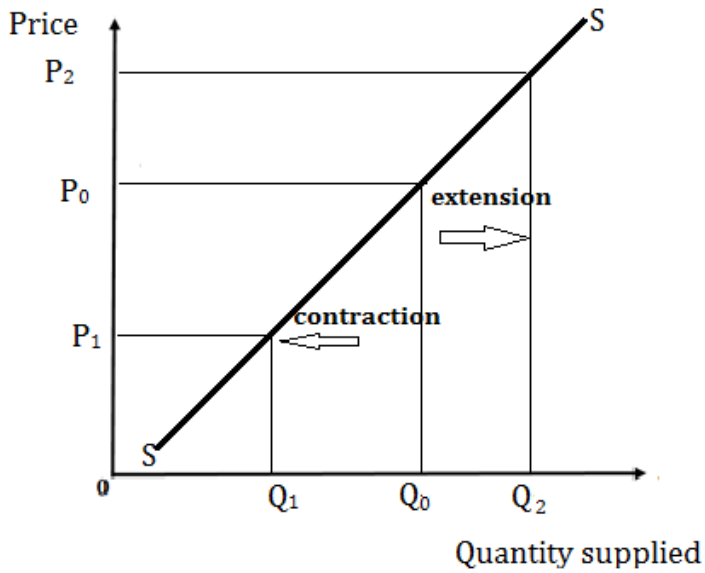
Change in supply and change in quantity supplied.

Change in supply: refers to increase or decrease in the amount of a commodity supplied in the market at a particular time due to other factors that affect supply holding prices constant. In change in supply, the price of the commodity remains constant, the supply curve shifts either to the right (indicating an increase in supply) or to the left (indicating a decrease in supply) as a result of other factors i.e. quantity supplied changes. This can be illustrated as below:



At a constant price $OP_{0,}$ quantity supplied is increasing or reducing as shown by the shifts in the supply curve from S_0 to S_2 and from S_0 to S_1 respectively.

Change in quantity supplied: This refers to increase or decrease in the amount of a commodity supplied to the market as a result of changes in its price holding other factors that determine supply constant. In a change in quantity supplied there is price change which results into a change in the amount supplied. There is movement along the same curve either downwards to the left which indicates a decrease or upwards to the right which shows an increase quantity supplied.



A change in price from OP_0 to OP_2 leads to an increase in quantity supplied from $0Q_0$ to $0Q_2$ while a change in price from $0P_0$ to $0P_1$ leads to a decrease in quantity supplied from OQ_0 to OQ_1.

EXERCISES

UNIT 1: BASIC ECONOMIC CONCEPTS AND THE IMPORTANCE OF ECONOMICS.

1. a) Economics was defined by many economists differently, which one do you think is most appropriate and why.
   b) Explain the term opportunity cost.
2. a) Explain how the study of Economics will prepare you to pursue different professions in future.
   b) Describe how the study of economics can help you find solutions to the problems that have taken place in your society or country.
3. a) Differentiate between wealth and welfare and show the relationship between the two.
   b) How does individual and business wealth affect society wealth?
   c) What do you think determines human welfare in any given society?
4. a) What are the underlying assumptions of a free enterprise economy?
   b) State the shortcomings of a free enterprise economy.
5. Briefly describe the role of various economic agents in the development process of any economy.
6. Describe how the various economic agents are organized to allocate resources in an economy.
7. Explain why leisure is an economic good.
8. a) Explain the meaning of
   i) Complementary factors of production.
   ii) Giffen paradox.

b) What is the role of price in a free market economy?

9. a) What are goods of first order? Why are they called goods of first order?
   c) What characterizes an economic good?
   d) Explain the following terms as used in economics.
      i) Laissez faire.
      ii) Ceteris paribus.
10. The commodities we desire to have in life that we see and touch with our eyes are called …… while those we don't see and touch but help to satisfy our needs and wants are called ……
11. Public goods are those owned and enjoyed collectively by …….. While private goods are those that are owned and exclusively enjoyed by ……..
12. Categorize the following into free goods and economic goods
    Telephone, sunshine, Inyange water, rain water, bread, air, car, uniform, shoes, bags, sea water, sugar etc.
13. a) With examples, distinguish between merit goods and demerit goods.
    b) Why are public goods always provided by the state?
14.) What is consumer sovereignty?
    b) State the characteristics of the traditional economic system.
15. a) Explain how studying economics is important to the producers, consumers and government.
    b) Identify the possible professions as students you would pursue after your economics course in high school.

UNIT 2: FUNDAMENTAL PRINCIPLES OF ECONOMICS.

16. State the importance of opportunity cost to the consumer, producer and the government.

17. a) What is meant by a transformation curve?
    b) Under what circumstances may a transformation curve shift outward?
18. Basing on the knowledge acquired about fundamental principles of economics, explain how you will use them in your daily activities.
19. What are the three fundamental economic problems?

UNIT 3: NATURE AND SCOPE OF ECONOMICS.

20. Analyse the statements below and categorize them into factual and nonfactual statements, by writing 'F' for factual and 'N' for nonfactual.
    a) Government-provided healthcare increases public expenditures.
    b) The government should provide basic healthcare to all citizens.
    c) The rising price of crude oil on world markets will lead to an increase in transport costs most countries worldwide.
    d) A reduction in income tax will improve the incentives of the unemployed to find work.
    e) Unemployment is more harmful than inflation.

f) The government should increase the minimum wage to 10,000frw per hour to reduce poverty.

g) The retirement age should be raised to 70 to combat the effects of our ageing population.

21. a) Using different statements, differentiate between Normative and Positive economics.

b) Using examples, discuss the difference and relationship between Microeconomics and Macroeconomics.

c) Categorize the following as micro and macroeconomic issues.

d) Drought hit affecting eastern province, high school drop outs in Rwanda, youth unemployment in Rwanda, Increased prices of commodities in the country, increased price of beans in the country.

UNIT 4: EQUATIONS AND FRACTIONS IN ECONOMIC MODELS.

22. a) Using graphical method, analyse the following equations and determine the equilibrium quantity and price. $Q_e = 6 + 3p_e$ and $Q_e = 22 - 5p_e$

b) In Kayonza market, the relationship between the supply of Irish potatoes was studied against the price per kilogram. The economic researcher came up with a linear relationship between the two variables as Qs=20 -3P, where Qs stands for the quantity of Irish potatoes supplied and P is the price per Irish in Rwanda Francs.

Another study was done in the same market about the quantity demanded of that same commodity relating to its price. The following linear relationship was formed: Qd =5 + 2P; where Qd is quantity demanded in kilograms and P is the price per kilogram of Irish potatoes in the market in Rwanda Francs. What would be the equilibrium quantity and price?

23. a) The cost of producing tomatoes is ¾ of the total revenue (TR) got from its sales. If the total cost (TC) incurred by the producer to produce 5 sacks of tomatoes was Rwf20,000, what was his/her profit?

b) The cost of producing maize is $^1/_4$ of the total revenue *(TR)* got from its sales. If the total cost *(TC)* incurred by the producer to produce 8 sacks of maize was Rwf40,000, what was his/her profit?

24. In certain school, there is a school farm which has the following livestock on its farm.

20 dairy cattle, 8 of which are currently being milked.

10 beef cattle, 6 of which are cows.

25 goats 15 of which are he-goats.

Required:

Determine:

i) The total number of livestock that the school farm has.

ii) Total number of male livestock.

iii) Total number of cattle.

25. In kayonza modern, there is a school farm which has the following livestock on its farm.

20 dairy cattle, 12 of which are currently being milked.

10 beef cattle,6 of which are cows.

25 goats 14 of which are he-goats.

From the above information derive the ratios of

i) Beef cattle to total number of cattle in the farm.

ii) Bulls to cows.

iii) Cattle to goats in the farm.

iv) He-goats to she -goats.

v) Male livestock to female livestock.

26. a) In spending her income Munana shares it into consumption and savings. The ratio of her monthly savings to her disposable income is 6: 20. If her ratio of tax to disposable income is 1: 4, what is her gross income given that she spends Rwf140,000 on consumption every month after paying tax?

b) In a class there are 60 students and out of those 35 are girls while 25 are boys. Express the above information in percentage.

c) If a cement firm employs 80 people in production of 5600 bags of cement, calculate personal contribution of labour in that production process in terms of bags.

UNIT 5: THEORY OF DEMAND.

27. Give circumstances where the demand for a commodity may not fall despite a rise in its cost.

28. a) Study the following sets of commodities and answer the questions that follow.

Set A

Butter and margarine; Tea & Coffee; Colgate & White dent; Private schools and public schools; Rice and Macrons; Potatoes and cassava.

Set B

Cars and fuel; Cars and tyres; Shoes and Polish; pen and ink; Mobile Phones and Sim Cards; Computer Hardware and Computer Software; Torch and Battery.

Set C

Wheat for producing bread, biofuels or feeding livestock; Land for farming or building houses; an iPhone used as camera, for internet access and making phone calls; Water for cooking, bathing, washing, mopping, drinking; Wool for carpets, blankets, jackets.

Set D

Shoes and phone; mattress and shirt; computer and bicycle; pen and plate; water and airtime.

a) What economic name is given to the demand for each set of commodities A, B, C & D?

b) Explain the relationship between commodities in each set A, B & D.

c) Explain how price changes affect demand of commodities in each set

29. a) Why do economists use the term ceteris paribus?

b) Briefly explain how the following affect quantity demanded of a commodity;

i) Price of other commodities

ii) Price expectation.

30. a) Describe how the following affect quantity demand of a commodity in markets in an economy.

i) Level of advertising.
ii) Credit availability.
iii) Population size.
iv) Government policy.

31. With the aid of illustrations, distinguish between change in demand and change in quantity demanded.

UNIT 6. THEORY OF SUPPLY.

32. Explain how the following affect the supply of a commodity:
    a) Price of factor inputs.
    b) State of technology.
    c) Government taxation policy.
33. a) Distinguish between supply and quantity supplied
    b) The price of commodity x remained constant at 800 FRW per kilogram but the quantity supplied of it in the market reduced by 30%. Give the factors that may have caused this decline in supply.
34. By use of an illustration differentiate between change in supply and change in quantity supplied.

ASSIGNMENTS

UNIT 1: BASIC ECONOMIC CONCEPTS AND THE IMPORTANCE OF ECONOMICS.

1. a) Describe the characteristics of a socialistic economy. /6mks
   b) Discuss, briefly, the advantages and disadvantages a planned economic system. /9mks
2. a) Identify the distinguishing features of a mixed economy. /6mks
   b) Present arguments for and against the interplay of government and private ownership and allocation of resources. /9mks
3. a) Analyse the arguments for and against the provision of merit goods by the state. /7mks
   b) How are prices of consumer goods determined in the market? /8mks.

UNIT 2: FUNDAMENTAL PRINCIPLES OF ECONOMICS.

4. a) Distinguish between positive time preference and negative time preference. /3mks
   b) Describe the importance of scale of preference while taking decisions. /4mks.
   c) What is the relevance of opportunity cost? /8mks.
5. a) State the assumptions underlying the production possibility frontier. /4mks
   b) Given the table below, answer the questions that follow.

Combination	Quantity of coffee	Quantity of maize
A	0	100
B	30	90

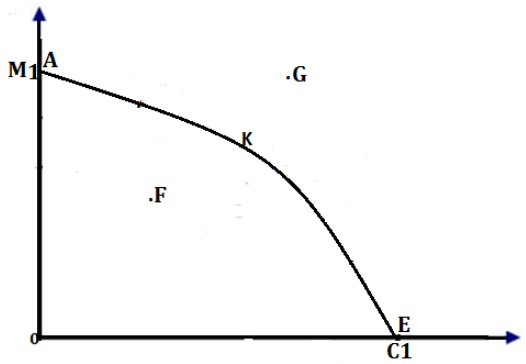
C	70	70
E	75	30
F	80	0

Required:

i) Plot the above information on a PPF. /6mks

ii) Describe the importance of a PPF. /5mks

6. Analyse the figure below and answer the questions that follow;



i) What does curve AE illustration? /2mks

ii) Describe the implication of points F, K and G /6mks

iii) Account for the shape of the Production possibility Frontier. /4mks

b) Suppose there is discovery of new resources allowing more production of commodity C, show what would happen to the production possibility frontier. /3mks

UNIT 3: NATURE AND SCOPE OF ECONOMICS.

7. a) Distinguish between Microeconomics and Macroeconomics. /2mks

b) Analyse the importance and limitations of microeconomic and macroeconomic study. /13mks

UNIT 5: THEORY OF DEMAND.

8. Discuss the effect of scarcity of fuel on:

i) The pump price of fuel. /1mk

ii) The price of commodities in the markets countrywide. /2mks

iii) The amount of goods and services that people can be able to purchase from markets. /2mks

b) What are the determinants of the price levels in markets in a country? /10mks

9. Analyse the factors that determine quantity demanded of a given commodity. /15mks.

10. a) Under what circumstance may

i) More of a commodity be demanded at constant prices? /8mks

ii) Less of a commodity be demanded at constant prices? /7mks.

11. a) Why does the demand curve slope from left to right? /7mks

b) Describe the circumstances that lead to the violation of the law of demand. /14mks

UNIT 6. THEORY OF SUPPLY.

12. a) Analyse the factors that may lead to the violation of the law of supply. / 6mks

    b) Examine the determinants of quantity supplied of a commodity in markets in an economy. /9mks

Describe the conditions that might lead to reduction in supply of labour even when their wages are increased.