TOPIC ONE

SUBJECT MATTER OF ECONOMICS

The subject matter of economics means what economics deals with. Economics as a subject deals with all the problems, which arise, in the following economic activities.

1. Production.
2. Consumption.
3. Distribution.
4. Exchange.
5. Allocation of scarce economic resources.
6. Human wants and their satisfaction.

Production

Production has two meanings.

(i) General meaning.

(ii)Economic meaning.

General meaning (General usage of the concept)

In this meaning production is a creation of goods and provision of services for personal consumption. For example, a carpenter who produces furniture for personal use but not for sale.

Economic meaning

In economic meaning, production is the creation of goods and provision of services for exchange in order to satisfy wants or is the creation of utility/satisfaction through exchange. For example a farmer who produces cash crops, private hospitals which provide medical services for sale.

Economics is concerned with problems which producers face in the process of producing due to scarcity of resources.

These problems are such as:

- What to produce.
- How to produce.
- How much to produce.
- For whom to produce.
- Where to produce.
- When to produce etc.

Economics enables producers to make choice of what to produce, how to produce, how much to produce etc with the scarce resources.

Consumption

Consumption is the process of making use of the commodity which has been produced. For example eating food, wearing clothes, driving a car, writing with a computer, reading an economics book or any other written material etc.

Consumption is actually the final stage of production. There would be no production if there was no consumption. Consumption enables production to continue. If goods produced by producers are not consumed, production will fail to continue.

Economics is concerned with solving problems, which affect the process of consumption due to scarcity of resources. Economics enables consumers to make choice of what goods or services to consume with their limited income.

Exchange

Exchange is the process of buying and selling goods and services. Production in economics is mainly for exchange. Economics is, therefore, concerned with all problems, which may arise in the process of exchange due to scarcity of resources.

Economics enables businessmen and women to decide which kind of goods or services to exchange in order to maximize profit. Also economics gives answers as to how much to exchange, when to buy or sell and for whom to sell in order to maximize profit.

Distribution

The word distribution has two meanings:

(i) General meaning.
(ii) Economic meaning.

General meaning (Meaning in general usage)

In this meaning, distribution means the process of transferring goods and services from areas of production to areas where they are needed for consumption. A good example is the distribution of *Coca cola* products which is done by the *coca cola* company by transferring their products from the factories to various shops throughout the country.

Economic Meaning

In economic meaning, distribution means the process of rewarding or making payments to factors of production from the total output produced or income generated in a firm or a nation. The reward is made to factors of production which are land, labour, capital and Entrepreneurship.

Distribution shows who gets what in the process of production, that is, how much wages the labour receives in the process of production, how much interest is paid to the owners of capital, how much rent is paid to owners of land and how much remains as profit to the entrepreneurs.

Economics gives answers to how much each factor of production should receive in the production process and the distribution of national income.

Human wants and their satisfaction

Wants have two meanings:

General meaning (General usage)

In this meaning, wants refers to needs like food, shelter, clothes, T.V, Radio, etc.

Economic meaning

In economic meaning, wants are all human desires or things that must be satisfied by using certain needs. Examples of wants are such as hunger, thirst, education, and health. For example, one takes food to satisfy hunger and water to satisfy thirst. So in

economic meaning food and water are not wants but means to satisfy hunger and thirst respectively.

Economics is concerned with satisfaction of human wants which are unlimited with the condition of scarce resources. That is, how can human beings satisfy their unlimited wants while resources are scarce?

Characteristics of human wants

Human wants have the following characteristics:

1. Human wants are unlimited in number.
2. All human wants cannot be satisfied because economic resources such as labour, capital and land which are used in the production process are scarce, that is, they are limited in number.
3. Wants can be satisfied by alternative means. For example, thirst for soft drinks can be satisfied by either some juice or soda.
4. Wants are felt again and again. When one want is satisfied, it tends to reoccur. For example, once thirst is satisfied, it tends to be felt again after some hours or minutes.
5. Wants are complementary. Some wants are satisfied by using two needs. For example, a want to drive is satisfied by a car and fuel.

Scarcity of Resources

Economics is concerned with scarcity of economic resources. Scarcity means limited in supply or less than what is required. In economic sense, all resources required to produce goods and to provide services are not enough to produce goods that can satisfy all human wants since are unlimited.

Scarcity is the main economic problem; there would be no economics if there was no scarcity. Economics is the subject that tries to solve the problem of scarcity of economic resources. It studies how human beings behave in meeting ends (wants) with the scarce resources.

Causes of Scarcity

Scarcity arises due to the following reasons:

(i) Limited stock of resources
(ii) Unlimited wants
(iii) Resources have alternatives uses

Limited stock of resources

Scarcity is caused by the fact that resources are limited in number (finite).Resources, in their particular sense, mean factors of production such as land, labour, capital and entrepreneurship. These resources are limited in supply; therefore, it is not possible to produce goods and services that can satisfy every human want.

Unlimited wants

Human wants are unlimited in number, therefore, the resources available cannot produce enough goods and services to satisfy all human wants.

Resources have alternative uses

Most of the resources have alternative uses. For example, land can be used to grow crops such as maize, rice, or as a site for construction of buildings. This means that if

more land is used for farming, less land will be available for construction of buildings and other uses.

Solving the Problem of Scarcity

The problem of scarcity is solved differently in various economic systems.

1. ***Under Socialist Economy***
   In socialist economy the problem of scarcity is solved through economic planning in which the government allocates scarce resources, depending on the needs of the society. Since the aim is to promote the welfare of all the people, the government ensures equitable distribution of scarce resources. The government makes choices on behalf of the citizens and ensures that resources are used efficiently.

2. ***Under Capitalist Economic System***
   Scarce resources are allocated by the market forces of demand and supply. Scarce resources are used to produce goods and provide services that maximize profit or that are demanded by the consumers. Market forces decide what is to be produced, how to produce and for whom to produce. That is, market forces are responsible for making choices of what to produce and consume by using scarce resources.

3. ***Under Mixed Economic Systems***
   The decisions on how to use scarce resources are made by both the government through planning and by individuals through market mechanisms. The government allocates some scarce resources while the interplay of the market forces determines allocation of other resources.

Summary of the Subject Matter of Economics

In summary, Economics is a comprehensive subject; it covers broad aspects of production, consumption, exchange, distribution, human wants and their satisfaction, problem of scarcity of resources and choice.

Further to this, there is an economic element to any subject for instance, there is economics of education, social and welfare economics, transport economics, industrial economics etc.

Definition of Economics

There is no single definition of economics. In fact, there are as many definitions as there are the number of economists.

Reasons why there is no single definition of economics

The reasons why there is no single definition of economics are:

1. The subject matter of economics is very comprehensive (wide). Economics deals with many aspects. Therefore, one economist can define the subject basing on a certain aspect of the subject matter of economics. For example, basing on production, while another economist can define the subject basing on another aspect of the subject matter, like scarcity of economic resources.
2. The subject matter deals with human behaviour, which varies, from one person to another. People differ in tastes, in the way they see events etc. Economists are human beings, therefore they have room to differ. For example, should economic resources be allocated through the interplay of the market forces or through the

government planning? The answers to this will depend on whether one is a socialist or a capitalist.

3. "Economics is unfinished science", With the passage of time, there have been significant developments in economic theory and new subjects have been included in it. Economics is still in the process of growth and development. In a science like economics, which is growing and developing, its correct and satisfactory definition, can be given only after it has sufficiently developed and grown.

Because of the above reasons various economists have given different definitions basing on the following:

- Definitions basing on wealth.
- Definitions basing on welfare.
- Definitions basing on scarcity.

Definitions basing on wealth

Adam Smith: He defines Economics as an inquiry into the nature and causes of wealth of nations.

John Stuart Mill: He defines Economics as the practical science of production and distribution of wealth.

Definition basing on welfare

Pigou: He defines Economics as the means of studying how total production could be increased so that the standard of living of the people might be improved.

Alfred Marshall: He defines Economics as a study of man's actions in ordinary business of life. Economics inquires on how man gets his income and how he uses it. It is on one side the study of wealth and the study of man, on the other.

Definition Basing on Scarcity

A definition by *Lord Robbins* - According to Lord Robbins, Economics is a science which studies human behaviour as a relationship between wants and scarce means which have alternative uses. Thus economics is a study of a particular kind of economizing.

Characteristics of Robbins' Definition

Robbins definition has the following characteristics:

(i) Wants are unlimited.
(ii) Resources have alternative uses.
(iii) Resources are scarce.
(iv) Economic problems arise due to scarcity of economic resources.

Strengths of Robbins' definition

Robbins' definition has the following strengths:

(i) The strength of Robbins definition is that it is centered on Scarcity that is the main economic problem. This is a fact, since if resources were not scarce, economics would not exist and there would be no need to economize, to him every human activity has an economic aspect on it as long as there is scarcity while other definitions do not consider the problem of scarcity.

(ii) Robbins' definition is applicable to all economies and covers both macro and micro - Economics while some definitions base on either microeconomics or macroeconomics for example *Alfred Marshall* defined economics as a study of man's actions in ordinary business of life. It inquires how he gets his income and how he uses it. It is on one side a study of wealth and on the other side the study of man; this definition is based on microeconomics analysis.

(iii) Robbins's definition does not distinguish between material and non-material activities. According to him, there is economics to every human aspect as long as there is scarcity. This is unlike other definitions, like that of ADAM SMITH who defines Economics as a study of the ''nature and causes of wealth of nations'', this definition considers wealth as an end in itself and does not consider welfare commodities.

Limitations of Robbins' definition

Although Robbins' definition is better than other definitions it has the following weaknesses:

(i) It looks at Economics as a science of individual behaviour and not as a social science. Many economists are of the view that economics is a social science and it should study the problem of choice when it has a social aspect that is when a man's choice affects other members of the society. Thus according to **Scitorsky** ''economics is a social science studying how people attempt to accommodate scarcity to their wants and how these attempts interact through exchange''. It is, thus clear that contrary to the views of Robbins, economics has been regarded by many economists as a social science, since a choice made by an individual must have effects to the other members of the society.

(ii) It gives little emphasis on other subject matters of Economics such as production, exchange, consumption and distribution.

(iii) It says nothing about economic welfare.

(iv) According to him Economics should study only the allocation of scarce resources in the production of various goods and services hence how the prices of goods, services and resources are determined, but the scope of economics is wider than the allocation of resources and the price theory. These days the importance of macroeconomics has increased in such that we study how the national income of a country change.

(v) Robbins's definition is also criticized on the ground that it does not cover the theory of economic growth and development. The theory of economic growth and development studies how the national income grows over a period of time, and what factors cause such increase. With economic growth the productive capacity of the country expands and brings about an increase in national income and the level of employment.

While Robbins's takes the resources as given and talks about their allocation, the theory of economic growth is concerned with reducing the scarcity of resources through raising the level of national income and accumulating more capital and wealth. For example in developing countries the question of economic growth is more important because these countries are making efforts to remove poverty of their people and to raise their living standards through economic

growth. In recent years many theories regarding how to initiate and accelerate economic growth in developing countries have been propounded.

The theory of economic growth has now become the core of the science of economics both in developed and developing countries and thus Robbins definition is defective because it does not cover an important subject like economic growth.

(vi) Even the problem of unemployment which is being faced by both developing and developed countries of the world, is not covered by Robbins definition. The definition deals with the problem of scarcity, however the problem of unemployment is not the problem of scarcity but due to abundance of manpower in relation to the demand for it. Labour is an important factor of production and its unemployment implies that it is abundant and not scarce.

Some recent definitions of economics

1. Professor Henry Smith definition
   "Economics is the study of how in a civilized society one obtains the share of what other people have produced and of how the total product of a society changes and is determined. By civilized society it is means that there are some legal institutions as well as rights of property and other things in the society''.
2. Jacob Viner.
   ''Economics is what economists do' According to Jacob viner in other words what economics is about can be better understood from what economists do and what they have been doing. That is to say what type of questions economists ask and provide for them. Thus what economics is about or in other words what is the subject matter of economics can better be known by spelling out the questions economists ask and have been asking.

Why do economists disagree with each other or why do Economists agree to disagree?

Reasons

1. ***Deficiency of statistical data***

Statistical information on economic affairs may have some deficiencies which leave room for disagreements amongst economists. For example, one can say Tanzania must remain in the East Africa Cooperation since it leads to faster economic growth. Economists may differ because they may not be sure whether economic development has accelerated since Tanzania joined the East Africa cooperation. These doubts arise due to the fact that national income statistics have a number of deficiencies. For example over-estimation of non-commercial sectors and exaggeration of figures due to inflation.

2. ***Economics is a young science***

Although the subject of economics is as old as the human race, economics as a scholarly discipline is very young. There are many theories and models which have been developed but some have not been fully tested, either because of insufficient time that has elapsed to provide adequate data or because no one has found a satisfactory way of testing them. Lack of reliable data provides room for economists to differ.

3. ***Techniques and economic changes***

These bring about changes in economic behaviour so that assumption about human behaviour which serves as useful basis for formulation of economic theory at one period of time may change due to technological changes. For example Malthusian theory of population later was proved to be wrong due to technological innovations in agriculture which took place in 20^{th} century hence enabled nations to increase food production and feed the large population.

4. ***Economics is a wide subject***

The fact that there are many definitions of economics means that the subject matter of economics is very wide and a group of economists could each approach the subject from a different aspect of the subject matter and they are bound to differ.

5. ***Economics is dealing with human behaviour***

Economics deals with human behaviour which is varied in nature. People differ in tastes and the way they see events. Economists are human beings therefore they have the room to differ in the way they make value judgment. For example whether economic resources should be allocated through the interplay of the market forces or not. The answers to this will depend on whether one is a socialist or capitalist.

6. ***Relationship between Economics and other subjects***

The study of economics is related to the other disciplines like natural sciences, political science, geography and history, because of the relationship between economics of a place or a country and various scientific, geographical, political or historical aspects of a particular place or country. For example, whenever there are technological developments in any place it would have impact on the economic activities or wherever there is political stability in a place, economic prosperity will follow etc.

7. ***Economics as a science***

A science is a systematic body of knowledge concerning the relationship between cause and effects of a particular phenomenon. Science is a sum of those facts which are found to be correct after experience and experiments. Economics is regarded as a science because of the following factors:

(i) It is a systematic study. As a systematic studies, it involves data collection, analysis, experiments and making conclusion.

(ii) Economics has laws and theories. As a science economics has laws made on the basis of cause and effect relationship. Economic laws are statements of scientific truth regarding the allocation of scarce resources. Examples of economic laws are laws of demand and supply, law of diminishing returns etc.

(iii) Economics has scales and measurements, as in science, in economics, money is used as a scale of measurement of the value of goods produced.

(iv) Economics uses experiments although Economists do not have laboratories like natural scientists, they are able to evaluate the cause and effect of economic events on the basis of experiences of human behaviour.

(v) Economists predict events, like in natural sciences. Economists can predict events. For example economists can predict the effects of unfavorable weather

on the supply of agricultural products in predictions economists apply economic laws.

However economics is not a pure science, therefore it differs from natural sciences in the following ways:

- There are no laws which can explain human behavior because people are unique and it is not easy to predict human behavior.
- Money is not a free measure of economic events because its value tends to change.
- Economic laws are based on assumptions, therefore, they are subject to limitations.

Economics as a Social Science

Economics is regarded as a social science because its principles and laws relates to the behaviour of people. It regards human behaviour as a relationship between scarce resources and wants. Like other sciences it is simply a study of causes and effect, although economists cannot carry out laboratory experiments they do observe and collect data from which they derive principles or laws concerning the economic behaviour of people.

Economic as an Art

As an art, it involves the utilization of scientific facts of science for practical purposes.

Economics and Political Economy

Economics is a branch of social science, which is concerned with the use, and allocation of scarce resources for the maintenance of growth and stability; it studies how people in society choose to allocate scarce resources for the betterment of the society. Political economy is the branch of social science, which deals with the study of development of social production, i.e. economic relations among the people; it deals with laws governing production, distribution, exchange and consumption of the material wealth of human society at various stages of development.

Approaches to Economics

There are two approaches to economics these are:

(i) Positive economics
(ii) Normative economics

Positive economics

Positive economics deals with description and analysis of the existing economic situation, it explains how an economic unit or an economic system works and operates under given conditions. Positive economics answers questions such as what determines the level of employment. How will a particular fiscal or monetary policy affect investment, consumption etc positive economics points out the causes of economic problems.

Normative economics

It involves value judgment. Economists under normative economics advise how the economy should operate, it suggests aims and objectives for the economy and points out what ought to be done to achieve them by suggesting what should be done to remove economic problems.

Differences between positive economics and normative Economics

(i) Positive economics merely explains economic phenomena i.e. why things are as they are while normative economics considers what ought to be done to solve a certain problem, example what should be done to remove income inequality.
(ii) Positive economics is concerned with the utilization of means or resources for the achievement of certain economic goals while normative economics discusses the desirability of the ends or goals to be achieved.
(iii) Positive economics is not worried of the ends of any decision whether bad or good while normative economics concerns itself with the goodness or badness of the economic ends.

Usefulness of Studying Economics

The knowledge of economics is helpful in the following ways:

Resource allocation

The knowledge of economics enables the owners of resources/ producers to make choice of what and how to produce with scarce resources.

Price determination

The knowledge of economics enables producers/firms to set a level of price, which maximizes profit given existing demand conditions.

Costs minimization

The knowledge of economics enables producers to choose the least cost combination of factors.

Formulation of development policies

The knowledge of economics helps the government to formulate development policies. For example, a policy to stabilize the economy and promote industrialization.

Utility maximization

Consumers by using the knowledge of economics are able to make choices that can maximize satisfaction i.e. efficient utilization of resources.

Branches of economics

The subject matter of economics can well be subdivided into Microeconomics and Macroeconomics.

Macroeconomics

It is the branch of Economics which studies aggregate economic variables, these are, variables which tend to affect the economy as a whole. For example, the study about national output, money supply, government spending, the levels of taxes, inflation, unemployment etc.

The subject matter which fall under Macroeconomics are:-

(i) Theory of national income and employment.
(ii) Theory of general price level and inflation.
(iii) Theory of economic growth.

Importance of macro-economics

Macroeconomics has the following importance:

1. It explains what determine the level of national income and employment and what causes fluctuations in the level of national income output and employment. It explains the growth of national income over a long period of time. In other words macroeconomics examines the determination of the level, fluctuations and trends in the overall economic activity.
2. It is helpful in giving macro-decision. For Example, about the total amount of money supply, government expenditures, level of taxation, and new investment during a particular year.
3. Macro-economics is very important in formulation of policies and plans which can be used to solve various economic problems. For example monetary and fiscal policies are macro-economic policies which are used to stabilize the economy and solve economic instabilities such as inflation.
4. Macro-economics is a very useful instrument for the government to deliberately control, influence and direct economic activities and variables in a country. For example reduction of taxes which is a macro-economics decision can have effect on the growth of investments in a country.

Limitations of macro-economics

Macro economics has the following limitations:

1. Macroeconomics cannot analyze the objectives and decisions of individual economic units. For example, how firms or consumers should make choices on what goods to produce or to consume or of how much should a government spend on a specific project.
2. Macroeconomics decisions have little effect on the activities of individual units. For example a decision to reduce taxes in order to stimulate aggregate investment will have little impact on the production of individual fishermen if these taxes are not imposed on the inputs used by the fishermen.
3. It is very difficult to apply *"ceteris paribus"* rule under macro-economics since one macro economic variable can affect other macro-economic variables unlike microeconomics variables. For example, when there is hyperinflation all the economic variables, such as employment, income and investment will be affected
4. Problems which affect individual firms and consumers cannot be well solved by macro-economic decisions. For example when a firm is faced with a problem of capital it cannot directly benefit from the instruction of the central bank to reduce interest rate if the firm does not have securities for securing loans.
5. Macroeconomics ignores individual differences among economic units and thus cannot effectively solve specific problems which affect these units. For example a macro – economic policy of liberalizing marketing of agricultural output in a country may benefit a group of peasants who are facing a problem of market for their product but the policy would be meaningless to another group of peasants in another area who do not face the problem of market for their products but are facing a problem of declining output due to severe drought and lack of farm implements.

Microeconomics

Micro economics is a branch of economics, which studies individual parts of the economy. (Micros is the Greek word for small).

The subject matters of microeconomics include:

(i) Determination of relative price levels of commodities and resources.
(ii) Distribution of factor incomes.
(iii) Economic and welfare efficiency.

Importance of micro-economics

Microeconomics has the following importance:

1. It analyses the objectives and decisions of individual economic units, that is, individual consumers, firms, government agencies or specific projects. For example, how a consumer should make a choice of about what goods and services to buy or a choice of what goods to be produced by a firm, or a government agency decision about how much to spend on a specific project.
2. Microeconomics decisions affect macroeconomics variables. For example, consumers' choice on goods and services has effect on aggregate consumption. Also a firm's decisions on what to produce have effect on aggregate investments. Likewise government decisions on levels of taxes must have considerations of individual consumer's reactions on rise or decline in levels of prices.
3. Price determination is based on micro-economics; producers/firms will set prices depending on responses by individual consumers in the market.
4. Problems which affect individual firms can well be solved through a micro-economics study. Micro-economics enables decision makers to decide on what goods or services should individual firms produce with scarce resources.
5. It explains the conditions of efficiency in consumption and production and highlights the factors which are responsible for the departure from the efficiency or economic optimum. On the basis of this, microeconomics theory suggests suitable policies to promote economic efficiency and welfare of people.

   Therefore not only does microeconomics theory describes the actual operation of the economy, but it has also a normative role in that it suggests policies to eradicate inefficiency from economic systems so as to maximize satisfaction or the welfare of the people.
6. Microeconomics explains how a free market economy, with its millions of consumers and producers work to decide about the allocation of productive resources among the thousands of goods and services.
7. Microeconomics addresses a big question about who gets what out of the output produced.
8. Microeconomics analysis is also usefully applied to the various branches of economics such as public finance and international economics. In public finance, it is macroeconomics analysis which is applied to explain the factors which determine the distribution of incidence or the burden of a commodity tax between producers or sellers on the one hand and consumers on the other. Further, microeconomics analysis is applied to show the damage done to social welfare or economic efficiency by the imposition of tax.

If it is assumed that resources are optimally allocated or maximum social welfare prevails before the imposition of tax, it can be demonstrated by microeconomics analysis what amount of damage will be caused to the social welfare. In international economics microeconomics show whether devaluation will succeed in correcting the disequilibrium in the balance of payment depending on the elasticity of demand for exports and imports.

Limitations of micro-economics

Microeconomics has the following limitations:

1. Micro-economics study does not give explanation on how aggregate variables perform. For example, how the gross national product grows over years.
2. Micro-economics cannot create policies to solve problems which affect the whole economy, and problems which affect the whole system. Examples of problems which can not be solved effectively by applying microeconomics policies are inflation, unemployment, deflation etc.
3. Micro-economics is weak in effecting national development plans and policies.
4. Micro economics works under *ceteris paribus* conditions which may not be realistic due to changes in economic conditions.

Interdependence between macroeconomics and Microeconomics

Theories regarding the behaviour of some macroeconomics aggregates are derived from theories of individual behaviour. For example, the theory of aggregate demand which comprises of aggregate consumption and aggregate investment are derived from the behaviour of individual consumers and individual investors respectively**.**

Microeconomics theory contributes to macroeconomics theory in another way. For example the theory of relative prices of products and theory of relative prices of product is essential in the explanation for determination of general price level. Even Keynes used microeconomics theory to explain rise in general price level as a result of the increase in money supply. According to Keynes, when as a result of the increase in money supply, aggregate demand in an economy increases and more output is produced, the cost of production rises. With the rise in the cost of production, the general price level rises. There are several interdependencies among macroeconomics and microeconomics variables. For example, the determination of rate of profit and interest greatly depend upon the macroeconomic aggregates. In macroeconomics theory profits are regarded as reward for uncertainty bearing, but microeconomics theory fails to show the economic forces which determine the magnitude of profits earned by the entrepreneurs and why there are fluctuations in them.

It is, therefore, true that profits of individual firms depend upon the level of aggregate demand, national income and the general price level. For example at times of depression, when the level of aggregate demand, national income, general price level are low, entrepreneurs get losses. On the other hand, when aggregate demand, incomes of the people, general price level go up and conditions of boom prevail, entrepreneurs earn huge profits.

Differences between macro- economics and micro-economics

The main differences between microeconomics and economics are:

(i) Macroeconomics is a branch of Economics, which deals with economic variables which affect the whole economy. Examples of such variables are national

income, unemployment, inflation etc. On the other hand Microeconomics is a branch of economics which deals with individual units of the economy such as firm's output, production and pricing of individual commodities, wages of individuals etc.For example a study about the level of output and employment in the Tanzania's textile industry belongs to microeconomics while a study about the output and employment in all economic sectors of the country belongs to macro economics.

(ii) Macroeconomics deals with aggregates of the economy such as total consumption, national output, and inflation etc. while microeconomics deals with individual firms or consumers such as output, cost, pricing of commodities of individual firms and wages and consumption of individual consumers.

(iii) Macro economics gives explanation of the performance of aggregates variables of the economy such as the growth of national income while microeconomics gives explanation of performance of a single firm or consumer.

(iv) Microeconomics policies are more effective in solving problems, which affect individual firms while macro economics is applied only to problems which affect the whole economy such as inflation, slow economic growth and unemployment and therefore less effective in solving individual problems.

(v) Microeconomics is effective in development of individual firms while macroeconomics is more effective in development of all economic variables in a nation.

(vi) Microeconomics works under ceteris paribus condition since changes in one firm cannot have significant impact on other firms while macroeconomic changes have widespread effects, therefore cannot work under ceteris paribus condition. For example when a single firm's output increases it will cause little changes on other firms' output and on aggregate variables in the economy such as employment, inflation and consumption but when one macroeconomic variable changes it will cause changes in other economic variables. For example when national income increases it cause changes in other macro economic variables such as consumption, employment and investments therefore macroeconomics can not work under *ceteris paribus* condition.

The main economic problem

The main economic problem is to make choices on what, how, and for whom to produce under the situation of scarce resources, alternative uses of resources and unlimited human wants.

How the economic problem arises?

Economic problem arises because individuals' wants are virtually unlimited, whilst the resources available to satisfy those wants are scarce.

Fundamental questions of economics

Every society/firms is faced with several questions due to scarcity of resources:

What should be produced?

Every society/firm must decide on what goods and services are to produced. Since resources are scarce no economy or firm can produce enough goods or services demanded by the consumers.

Producing more of one commodity will often mean sacrificing production of another commodity; this means that the society as a whole or individual producers must make a choice of what goods to be produced with the scarce resources

How should this product be produced?

Once what sholud be produced has been decided and the quantity has been determined, decisions on how should it be produced must be made. There are many types of factors of production or inputs into the production process. Usually a business firm can use many different combinations of factors of production to produce its product. Each firm must decide on the particular combination of inputs to be produced, in this case a firm will choose a least cost combination of inputs, which minimizes costs.

Who gets what?

These are the returns to factors of production, like , wages for labor, interest for capital, rent for land and profit for entrepreneurship. Distribution is fundamental because it can cause social and political unrest; therefore at the end of production process return for each participant in the process of production must be established. "Because how a cake is prepared may not be important but how the cake is distributed is very important".

For whom should the output to be produced?

Producers must ask themselves, who will be their potential customers for their products; this is important because production in economics is for exchange, therefore the question is who will be the potential buyers?

When to produce?

This is a decision on whether to produce now or to produce in future.

Where to produce?

This is the decision on location of the firm whether to locate the firm near the source of raw material or near the market.

Answers to economic questions under different economic systems:

Capitalist/Free enterprise economy

Under this type of economic system, price mechanism gives answers to all economic problems/questions.

What is to be produced should be those commodities that consumers are willing and able to buy at the current market price ie price which generates enough revenue to cover the costs of production. However it should be understood that price mechanism is not a *panacea* to all economic questions or problems.

In socialist/command economy

In a command economy, all fundamental questions of what should be produced, how to produce are decided by the government through a central planning organ which determines on behalf of the society what kind of goods or services to be produced.

In mixed economic system

In mixed economic system, economic questions are answered by both the market mechanisms and by the government through economic planning. In mixed economic

system, some goods are produced depending on the demand and supply conditions while other goods are produced according to the plans made by the government.

Scarcity, choice and opportunity cost

(i) Scarcity

In economics, the term scarcity simply means limited in supply or less than the requirement. In economic sense, all things are scarce as relative to the people's desire for them.

It is a fact that human wants are unlimited but the resources needed to produce goods which can satisfy wants are limited in supply. It is therefore impossible to satisfy all wants of every human being. Scarcity is caused by the following factors:-

- Limited stock of economic resources.
- Unlimited human wants.
- Resources have alternative uses.

Since scarcity is the main economic problem or the central problem of economics, there is no economics if there were no scarcity, because economics is all about economizing of economic resources. If resources were not scarce there would be no economic problems and consequently no economics.

(ii)Choice

Since resources are scarce, a selection or choice of few alternatives to be satisfied must be made. Producers must choose what goods or services to produce or how to produce given scarce resources. Consumers too must decide which of their wants must be satisfied by using their limited incomes. Economics is therefore about scarcity and choice.

(iii) Scale of Preference

A scale of preference is a list of wants in the order of their importance starting with the most pressing wants ending with the least pressing wants. The most pressing wants should be the first to be satisfied followed by the least pressing wants, some wants will be left unsatisfied due to scarcity of resources, the unsatisfied wants are the real cost or the opportunity cost of the wants satisfied, a scale of preference is usually made by producers or consumers in order to maximize utility in a situation of scarce resources and unlimited wants.

(iv) Opportunity Cost

The opportunity cost of anything is the alternative that has been foregone after making a certain choice due to scarcity of resources. Since people cannot satisfy all their wants due to scarcity of resources they must therefore choose between one thing and another thing so that the satisfaction of one want involves sacrificing another want. Likewise since the supply of factors of production is limited, the production of one thing often involves a sacrifice of production for another commodity.

Examples of opportunity cost:

Example I:

If a student has two alternatives of using his/her evening time, to do homework and another alternative is to play football. If he/she chooses to play football then the opportunity cost of playing football is the homework foregone.

Example II:
If a farmer has two alternatives of using his/her field, one is to grow maize and the other one to construct a building for keeping cattle. If he chooses to cultivate maize there will be no land or site for construction of a building for his cattle. The opportunity cost of growing maize will be the building for the cattle sacrificed.

Illustration of opportunity cost by using production possibility curves

Production Possibility Curve (PPC)

This is a locus of points showing combinations of commodities that may be produced when all resources are fully utilized. With limited resources an economy has limited possibilities for production of goods and services. Increasing production of one often leads to less production of another type of goods. For example, as the government increases military expenditure the provision of social services declines or deteriorates.

This can be illustrated by using a production possibility curve or frontier. For example in the production possibilities for Rungwe District, we assume a simple hypothetical case, in which the district has limited land resource and therefore can produce only two crops, coffee and banana, we also assume that all resources are fully and efficiently utilized, and that land is fixed in supply. Thus, when farmers increase the production of coffee it means less production of bananas and when peasants increase production of bananas it means less production of coffee.

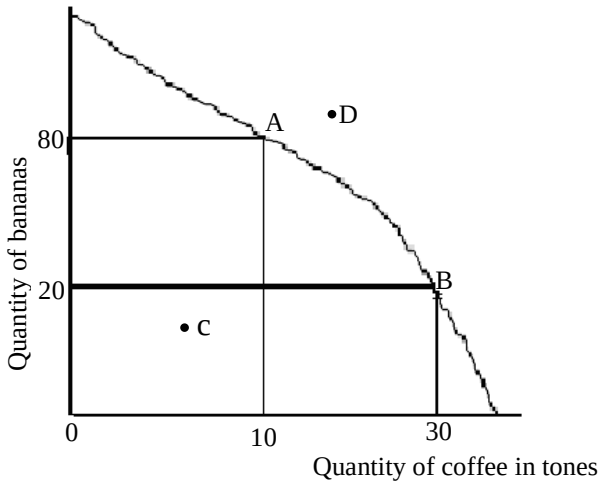


Figure: 1.1 Production possibility curve

In figure 1.1,

- The quantity of coffee in tons produced is measured along the horizontal axis and the quantity of banana in tons is measured along the vertical axis.
- Point A and B show attainable combinations and feasible combinations when resources are fully utilized. At point A the district can produce 80 tons of bananas per year when it produces 10 tons of coffee. At point B the district can produce 20 tons of banana and 30 tons of coffee. Points A and B are alternatives choices for the district.
- Point D shows unattainable combinations because the resources are not enough to produce such a quantity. In other words point D is not feasible and shows scarcity of resources.

- Point C represents either inefficient use of the district's resources or underutilization of resources.

The opportunity cost of either product is represented by negative slope of the boundary. Opportunity cost can be calculated as;

(i) Opportunity cost = $\frac{Fall\ in\ bananas\ production}{Rise\ in\ coffee\ \ production}$

Or = $\frac{-\Delta\ banana}{\Delta\ coffee}$

(ii) Opportunity cost = $\frac{rise\ in\ bananas\ production}{fall\ in\ coffee\ \ production}$

Or = $\frac{\Delta\ banana}{-\Delta\ coffee}$

Table 1.1. Output of two commodities under production possibility

Product combination	**Tons of coffee**	**Tons of bananas**	**Opportunity cost of one ton of coffee**
A	10	80	
			3 units of bananas
B	30	20	

Table 1:1 above, shows the opportunity cost of *Coffee* in terms of number of tons of *banana* which must be foregone to obtain a one unit increase in tons of *coffee*. An increase by 20 tons of *coffee* from 10 units to 30 units results into the decrease by 60 units of *banana* from 80 units to 20 units hence 3 units of *banana* decrease per one unit increase in tons of *coffee* OR 3 units of banana increase per one unit decrease in the production of coffee that is, the opportunity cost of one unit of *coffee* is three units of *banana.*

Shift of the Production Possibility Curve

A PPC can shift rightwards due to the following factors:

(i) Improvement in technology.
(ii) Economic growth.
(iii) Increase in productive resources namely capital, land and labour.

Diagrammatically it can be shown as follows.

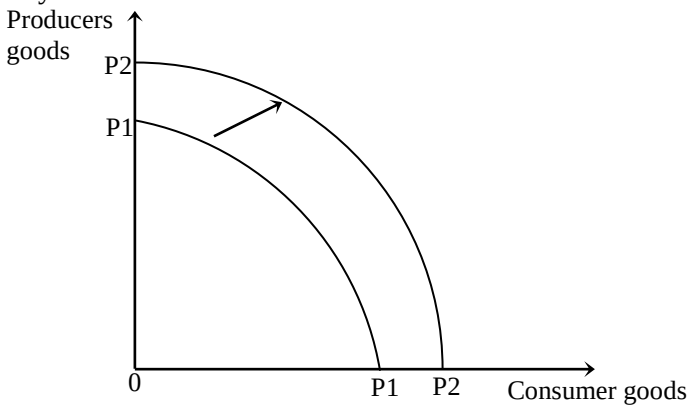


Figure: 1.2 Shift of a production possibility curve

In figure 1.2, a change in any of the factors above let say increase in capital will shift the curve from P1P1 to P2P2.

Uses of production possibility curve

The knowledge of production possibility curve is useful in the following ways:

1. Allocation of scarce resources PPC enables the society to make a good decision on how to use scarce resources to produce goods that maximizes social welfare. With limited resources a society has to make a choice of the combination of goods within the production possibility curve.
2. To indicate problem of unemployment and underemployment of resources. When the economy is operating at a point below the production possibility curve it implies underemployment of resources.

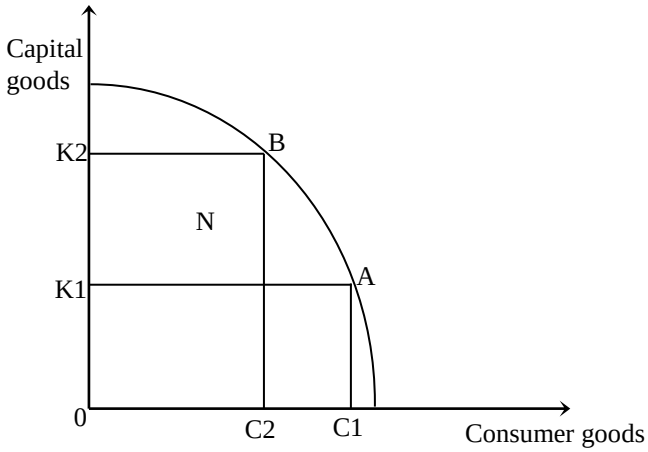


Figure: 1.3 Point N shows underemployment of resources

3. To show full employment of resources. When the economy is operating at any point along the PPC it shows full employment of resources as it can be shown in figure 1.4 below.

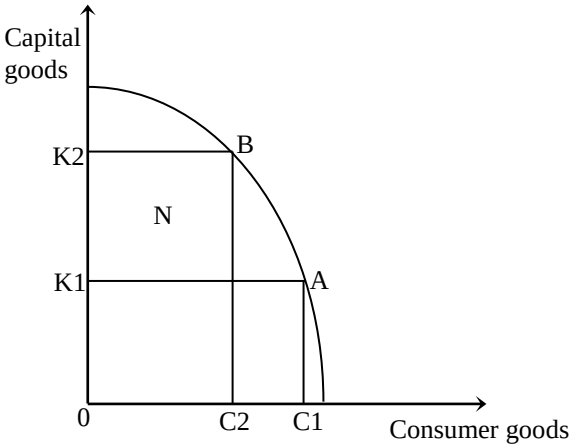


Figure: 1.4 PPC showing full utilization of resource

In figure 1.4 above, point A and B show full utilization of resources.

4. To increase capital formation and economic growth.

Another important use of the production possibility curve is that, with it we can explain the problem of capital formation and economic growth. With limited resources a society has to decide on the amount of capital and consumer goods to be produced. When the society allocates more resources for the production of consumer goods, fewer resources will remain for the production of capital goods. In order to increase production of capital good the society will have to withdraw some resources from the production of consumer goods and use them for the production of capital goods. This is shown in figure 1.5 below.

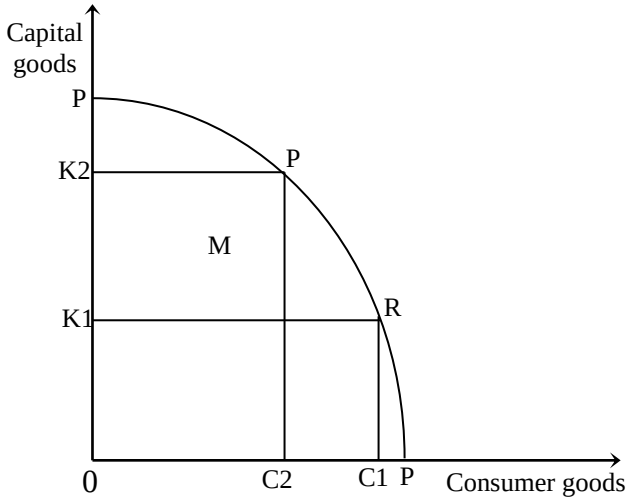


Figure: 1.5 Production possibility curve

In figure 1.5 above, the economy has allocated the available resources between capital and consumer goods in such a way that when it operates at point R on the production possibility curve PP it produces OC1 of consumer goods and OK1 of capital goods. Now suppose that the society decides to produce more of capital goods. To implement this decision the society will have to withdraw some resources from the production of consumer goods to the production of capital goods. As a result the production of consumer goods will decline. The reallocation of consumer goods and capital goods will cause a movement in PPC from point R to point P. The society will now produce OK2 of capital goods and OC2 of consumer goods.

Importance of the Concept of Opportunity Cost

The concept of opportunity cost is very important in any economic decision involving scarce resources. Since resources are scarce relative to the people's desire for them, satisfaction of one want involves sacrificing another want. This means that certain wants are satisfied at the expense of other wants.

What wants to be satisfied and what wants to be foregone will largely depend on the opportunity cost of a want to be satisfied. A rational consumer or producer will choose a want which has a low opportunity cost, the opportunity cost can be measured in terms of marginal utility of the consumers or returns in terms of output to producers. For example, if marginal utility obtained by a student by using his evening time for studies is higher than by going to the movie then this particular student will choose studying because studying has low opportunity cost in terms of marginal utility.

Likewise a peasant will choose to grow rice in his/her land if the land produces more units of rice than other crops, assuming the price per unit of output and the cost of employing resources for all crops is the same.

The government planners also apply the concept of opportunity cost in the process of planning. For example, if increasing expenditure on purchasing military hardware it implies deterioration of the standard of education, poor health services, poor road, malnutrition and social unrest, then planners should reduce expenditure on military hardware because such expenditures have very high opportunity cost.

Entrepreneurs also apply the concept of opportunity cost in order to retain workers. Workers will normally like to supply their labour to firms where the transfer earnings or the opportunity cost is low. For example, if a worker in firm A is paid 100$ per month and in firm B he would be paid 50$ per month, this particular worker will continue to work in firm A because the opportunity cost of working in firm A is lower than that of working in firm B.

In this case the employer of this particular worker in firm A will continue to pay the worker amount above 50$ per month in order to retain him in his firm.

However the assumption here is that always labour or any factor of production has alternative use or is perfectly mobile. In international trade the concept of opportunity cost is a basis of the theory of comparative cost where relative costs are important in determining which products are imported and exported. A country will export a product for which it has relatively low opportunity costs and will import a product for which it has relatively high opportunity costs in production as shown in the example below.

Table 1. 2 Labour units required to produce output in Kenya and Tanzania.

Country	**Units of labour required to produce**	
	1 barrel of maize	I bolt of cloth
Kenya	90	60
Tanzania	30	30

In table 1.2 above, Tanzania has absolute advantage in the production of both commodities since it takes fewer units of labour to produce both products than it does in Kenya. But by looking into internal cost ratios of each country, Tanzania has absolute advantage in both maize and cloth; however its absolute advantage is greater in maize (90/30 > 60/30). It can out produce Kenyans by 3 to 1 in maize but only 2 to 1 in cloth. A greater absolute advantage, such as Tanzania has in maize is called comparative advantage, compared to Tanzania , Kenya is at absolute disadvantage in both maize and cloth, but it is at a lesser absolute disadvantage in cloth (60/30 < 90/30), where the Tanzanians out produce it only by 2 to1. A lesser absolute disadvantage is also called a comparative advantage. Thus Kenya has a comparative advantage in cloth production and can gain from trading its cloth for Tanzania's maize.

Other Main Economic Concepts

Goods

Goods are things which can satisfy human wants like cloths, cars, horse, radio, T.V etc.

Classification of Goods

Free goods Vs economic goods

Free goods

These are the goods which are provided freely by nature for example air, sunshine, rainfall, ocean water, forest etc.

Features of free goods

- They are not scarce, that is, they are abundant.
- They are not produced through human effort.
- They are not transferable in terms of ownership.
- They lack exchange value.
- They possess utility (use value).

Economic goods

These are the goods that are produced by human effort and possess the following qualities.

- They have utility (Ability to satisfy wants).
- They have exchange value that is they can be bought and sold.
- They are transferable in terms of ownership from one person to another person.
- They are scarce.

☞**Note:** Economics is concerned with Economic goods not Free goods because production in economics is for exchange and economic goods have exchange value.

Consumer Goods Vs Producer Goods

Consumer goods

These are the goods produced for final consumption such as food, radio. T.V, furniture etc.

Producer goods: Are those goods, which are produced to assist production of other goods. They are also known as capital goods. Examples of producer goods are machinery, raw-materials, workshops, buildings, roads and railways.

Perishable Vs Durable Goods

Perishable goods

These are the goods, which can easily be destroyed or decayed. Examples of perishable goods are foodstuffs, like milk, meat, floor, fruits, vegetables, etc.

Durable goods

These are the goods, which can stay for a very long period of time without being destroyed. Examples of durable goods are buildings, machinery, furniture etc.

Private Vs Public Goods

Private goods

These are goods owned exclusively by individuals. For example private cars, TVs, clothes, houses .etc.

Public goods

These are the goods owned and enjoyed collectively. For example, defense, roads etc.

Features of public goods

Non - divisibility

Public goods are provided in totality to the public. For example defense is provided in totality to all the citizens.

Non-rivalry

There is no competition in consumption, one person can consume extra units without reducing consumption of other consumers.

Non-excludability

No one is excluded in consuming public goods; public goods are consumed by all people.

Free rider problem in consuming public goods

This problem exists because there are some individuals who want to enjoy public goods without paying for them.

Intermediate *goods vs. final goods*

Intermediate goods are the goods in progress of production while final goods are goods ready for consumption

Normal Goods Vs Inferior Goods

Normal goods are the goods whose demand for which their demands increase when real income increases and their demand decreases when income of the consumer decreases. While inferior goods are the goods whose demand of consumers decrease when real income increases.

Wealth

Wealth is any stock of goods existing at a certain time that conforms to the following requirements:

(i) They must posses utility, that is, they must yield satisfaction.
(ii) They must have a money value.
(iii) They must be limited in supply.
(iv) It must be possible to transfer their ownership from one person to another.

Types of Wealth

Personal wealth

These are the personal belongings of individuals such as house, radio, furniture etc

Business wealth

This is the wealth, which is used in business. Examples of business wealth are machinery, factory building, etc.

Social wealth

These are the types of wealth, which are communally owned. Examples of social wealth are schools, hospitals, roads etc.

Utility

This is the satisfaction obtained by people in consuming goods or services. Different consumers of goods or services may get different utilities from the same commodity at

different times and situation. In this sense, it is very difficult to measure utility that a person gets from consuming goods and services.

Usually, the demand for a commodity is largely influenced by marginal utility, that is, the additional satisfaction that a person obtains from consuming a commodity influences the person to buy more or less.

Diminishing Marginal Utility (Law)

Marginal utility is the additional satisfaction that a person obtains after consuming additional units of a commodity. The law of diminishing marginal utility states that the more of a thing a person possesses the less satisfaction he will derive from it. That is, each successive increment in consumption of units of a commodity yields less satisfaction than the previous unit until eventually satiety is reached. For example, the utility that is derived from drinking water diminishes as a person drinks more glasses of water.

Forms /Types of Utility

There are three forms of utility:

Place utility

This refers to the process of transferring a commodity from where it is produced to where it is needed for consumption. This leads to increased production since it enables products to reach the market and therefore increases the consumption of the goods as consumption increases firms are able to carry on further production.

Form utility

This is a utility obtained when a commodity is changed in terms of its form from a less useful form to a more useful form. For example processing raw materials to finished goods. Form utility leads to increased value and demand for a commodity. Due to increased value and that lead to increase in demand, firms are encouraged to increase production.

Time utility:

This is a utility obtained when a stored commodity is made available at a time when it is needed for consumption. Time utility ensures constant supply of a commodity and thus reduces fluctuations in the demand for the commodity.

Economic Laws

- These are statements**,** which show the relationship between economic variables. Economic laws show what happens under a given economic conditions.
- Economic laws regulate relationships in main economic activities of production, exchange, consumption and distribution.
- Economic laws assist in various economic decisions like allocation of scarce resources, determination of prices, choice of methods of production etc.

  Examples of economic laws are laws of demand and supply. These laws state as follows:

The law of demand

Other things remain constant the lower the price of the commodity the higher the quantity of the commodity that will be demanded.

The law of supply

This law states that the higher the price of the commodity the more the quantity of the commodity will be supplied, assuming *ceteris paribus.* Therefore, economic laws show tendencies of what happens under given economic conditions. They express people's reactions to economic forces. For instance in the above examples, the law of demand shows that, consumers tend to buy more as the price of the commodity decreases and suppliers tend to supply more when the price of a commodity increases. However, sometimes people behave contrary to the laws. For example, under conditions of exceptional demand people with low incomes buy more inferior goods at a higher price than at a lower price.

Characteristics of Economic Laws

Economic laws have the following characteristics:

(i) They are not static i.e. they change with change in time and economic conditions.

(ii) They are hypothetical and conditional. Unlike the laws of physical sciences which are quite exact, precise and definite and therefore can predict the coarse of events, economic laws lack this predictive value. Laws of economics are conditional and are associated with number of qualifications and assumptions. These assumptions are generally contained in a phrase other things remaining the same. For example according to the law of demand, when the price of a commodity rises, its quantity demanded by the consumers will fall, assuming that other factors such as income remain the same.

Classification of Economic Laws

Economic laws can be classified under the following categories:

(i) Pure and natural economic laws
(ii) Laws of the super structure (Government or state law)
(iii) Specific economic laws
(iv) General economic laws

(i) Pure and natural economic laws

These emerge purely from interactions of economic variables such as price and quantity demanded or supply, scarcity, choice etc. These laws have a characteristic that they can operate in all economic systems; Examples of pure economic laws are the *law of demand and supply and the laws of diminishing marginal utility*.

(ii) Laws of the super structure (Government or state law)

These are laws made by the government or state to regulate or control economic activities. Examples of laws of the superstructure are:

- Laws of taxation.
- Laws of controlling consumption of certain commodities.
- Laws of stabilizing the economy.
- Commercial laws.

(iii) Specific economic laws

These are the laws which are specific to a certain economic system. These laws control the relationship of people in the process of production, consumption, distribution and exchange. Once a system is replaced by a new system, specific laws are replaced by the laws of the new system. Examples of specific economic laws are:-

- Law of private ownership of major means of production under capitalist system.
- Law of public ownership of major means of production, this law operates under socialist system.

(iv) General economic laws

These are laws which operate in all economic systems, whether socialist or capitalist. Examples of general economic laws are the *laws of demand and supply*.

Uses of economic laws

Economic laws have the following uses:

(a) Economic laws are useful guides to economic events and serve as a basis for the formulation and evaluation of economic policies. For example the law of demand which states that the lower the price of a commodity the greater the quantity demanded can help the tax authority to fix a rate of tax that will not cause a big increase in price that will cause a big fall in demand.

(b) They are also useful in planning process. Planners can forecast implications of various plans by using economic laws. For example, what will happen to production when domestic industries are given subsidies.

(c) They are concerned with how the economic system work and operates. Man in his economic life produces wealth, consumes wealth and exchanges it with others. Therefore, economic laws govern production, consumption and exchange.

(d) Economic laws are also concerned with how the national product should be produced is distributed and how the levels of income and employment are determined.

(e) They establish relationship between cause and effect. Like laws of physical sciences economic laws also establish relationship between cause and effect about economic behaviour of man and economic phenomena. For example according to the law of demand when the price of a commodity falls its quantity demanded increases, other things remaining the same. Here the fall in price is the cause and the rise in the quantity demanded is the effect. The law of diminishing marginal utility describes that as a man has more units of commodity its marginal utility goes on diminishing. Here the increase in quantity demanded is the cause and the fall in marginal utility is the effect.

Ceteris Paribus

This is a Greek word which means other factors remain constant. Many economic laws apply under "Ceteris Paribus" conditions. For example the law of demand applies when other factors which determine demand like income, price of substitutes and weather remain constant. If these factors change when the price changes, the law will not apply.

For example, when the price decreases, the consumers will buy more if and only if income remains constant but when income also decreases, consumers will not be able to buy more even at a lower price.

Economy

Economy means using economic resources optimally, that is, using resources without wastage. Economy may also mean an economic system such as a capitalist system or a socialist system.

Welfare

Welfare refers to the level of satisfaction that a person or a group of persons derives from consumption of goods and services**.**

ECONOMIC SYSTEMS

Meaning of economic system

An economic system is a set of institutions within which a community decides on what, how and for whom to produce. It is a framework through which a society allocates scarce resources among competing uses or it is an allocative mechanism of a society. Thus, a society's economic system determines how the society answers the fundamental economic questions about what should be produced. How the output is to be produced? Who to get this output etc.

Types of Economic Systems

There are three main types of economic systems:-

1. Command/Socialist economic system.
2. Capitalist economic system.
3. Mixed economic system.

Command or socialist economic system

A command or socialist economic system is a type of economic system in which all major means of production are owned by the state and all decisions about what, how, how much, where and for whom to produce are made by a central planning authority. Examples of countries, which practice this type of economic system, include the former U.S.S.R, China, Cuba and North Korea.

Features of Socialist Economy

A socialist economy has the following features:

- *Collective ownership:* Under the command system major means of production such as factories, banks, schools, hospitals, farms etc are owned by the state.
- *All economic decisions are made by the state:* Under the command systems all economic decisions of what should be produced, how to produce, for whom to produce are made by the central planning authority-The government is responsible for allocation of economic resources and distribution of wealth.
- *Exploitation is minimized and classes are non-existent:* Under the command system profit is shared equally among members of the society and classes do not exist since the wealth of the society is owned equally by all the members of the society and the motive of production is not to maximize profit. Therefore, there is no need to exploit workers by paying them low wages in order to make profit.
- *Lack of competition and low growth:* Socialist production is characterized by lack of competition and low growth of the economy. This is because production is carried by few monopoly government enterprises which do not compete to maximize output and profit. This renders them less efficient and generally leads to low growth of socialist economy.
- *Lack of freedom of choice:* In the command economy producers are not free to decide on the allocation of scarce resources, what should be produced is wholly determined by the state on behalf of all the people, consumers likewise are not free to decide on what goods to consume.

- *Equality exists among the members of the society:* In the command economy majority of the people have access to the national output as the state insures equal distribution of wealth among the citizens as a result every member of the society can obtain a minimum standard of living. Even the poor member of the society can still enjoy free social services that are provided freely by the government.
- *Wasteful competition is avoided:* In the command economy, production is carried out by few government owned Enterprises. These enterprises do not compete for allocation of resources because their major motive is not to maximize profit; they produce to satisfy the needs of the society. Due to lack of competition and proper planning by the government the problem of misuse of resources is often avoided.
- *Lack of political freedom:* A command economy usually operates under one party system. The party controls all socio-political and economic matters of the country, all citizens regardless of their differences in political opinions are forced to follow orders of the socialist party and freedom of expression is largely restricted.
- *Bureaucracy in decision making and corruption:* In the command system, the process of decision making is centralized and usually is made by a group of planners who undergo so many processes of decision making by estimating needs of the society. This process is very cumbersome since it involves so many procedures and is time consuming. The planners in one way or other control resources which make them liable for possible bribes from the consumers who are forced to use bribe in order to get scarce but essential commodities.

Advantages of Socialist Economy

A socialist economy has the following features:

- *Equality:* Under this system equality exists among the members of the society because everything is shared equally among members of the society. The government distributes wealth of the society or the national cake equally to the citizens.
- *Lack of classes and exploitation:* The major means of production are owned communally so there are no classes among the people in terms of ownership of major means of production. Exploitation is also minimized because no one in the society has control over the labour of another person, as it is the case in a capitalist economy, in which the capitalist exploits workers by paying them low wages.
- *Promotion of majority welfare:* Under this system the government ensures achievement of minimum standard of living for every member of the society by using different approaches like provision of free social services to all members of the society.
- *Wastage of resources is avoided:* Under command economy proper planning in the allocation of resources is done to ensure efficient and full utilization of resources and production according to the actual needs of the people. This avoids problems, which result from lack of planning such as overproduction, unemployment and the resulting price fluctuations.
- *Control of individual monopolies:* The government under command economy controls emergence of monopoly firms which often cause hardships to consumers and society like environmental pollution, charging extremely high prices and production of substandard goods.

- *Economic and social crises can be avoided:* Since the command economy is planned, the government is able to control various macro-economic variables like money supply, investment, consumption, expenditure, tax etc. In doing so, economic crises such as deflation, recession, depression and unemployment can be avoided. For example, the government may solve the problem of deflation through planning by reducing over investment.

Disadvantages of (command) socialist economy

A socialist economy has the following features:

- *Lack of freedom of choice:* Under the command system the freedom of consumers and producers of what to consume and produce respectively are very limited. The government decides on behalf of all the people on what should be produced and consumed.
- *Low motivation for producing and maximize profit:* There is little motivation for producing by producers because the final output does not directly benefit them.
- *Inefficiency in production:* This system is characterized by inefficiency due to lack of competition, low technology, bureaucratic decisions, corruption, poor planning, too much protectionism policy to domestic industries etc.
- *Lack of private initiatives:* Public ownership discourages individuals to initiate various economic activities, innovate new methods of production, take risks in production etc.
- *Absence of political freedom:* People are forced to be members of one political party and restricted from forming civil society associations in order to express their views. Opposition parties are not allowed to operate in a socialist economy.
- *Many officials of the government are required to estimate wants and direct resources:* The use of such officials may lead to bureaucracy, excessive form filling, slowness in decision making and corruption.
- *Resource mismanagement due to poor allocation:* Often the government in a socialist state uses a lot of resources to consolidate political power instead of directing such resources to the production of economic goods.
- *Slow investment and slow growth of output per worker:* This is due to poor technological level caused by lack of motivation in carrying out some innovations among the people. Individuals have narrow chance to participate in the investment process since everything is government centered. This system has even made the people to become unable to raise enough capital for investment. Hence a decline in economic progress and in standard of living.
- *Wastage is often overlooked and eventually turning government firms into loss making firms:* This loss is usually borne by tax-payers or rate-payers.
- *Difficult in estimating demand:* It requires price signals to estimate existing and future pattern of demand for goods and services, in a command economy, planners often fail to know the actual demand for the people as a result shortages and wastage occur.
- *Lags in implementation of plans:* There is a time lag between the collection of information and the formulation of production plans based upon that information, and then there is a further time lag between the implementation of production and realization of production targets.

Nationalization Policy under a Socialist Economy

In order to build an effective command economy, most socialist governments nationalize private owned firms, that is, change private owned firms into public ownership.

Reasons for nationalization of firms/industries

- *To regulate the production of demerit goods*: The government may apply nationalization policy as a way of controlling demerit goods that is goods which are harmful to the consumers such as tobacco, gambling and beer.
- *Fiscal reasons:* The government may decide to nationalize private monopolies for a simple reason of using monopoly profit as a source of state revenue.
- *To regulate production of merit goods and ensure public health:* These are the public goods that are consumed by all the citizens such as water and electricity, the government control the supply of these commodities to ensure certain standards of these services so as to protect the welfare of the people.
- *Defense and national security:* For the sake of protecting national defense and security a government may nationalize the production of arms because if the production of the arms is under private firms, these firms may sell the arms even to the enemies of the country and jeopardize the security of the nation.
- *National prestige:* The *government* may nationalize some firms for a nation's prestige. For example many governments possess and have national airlines in order to "wave the flag" of the country.
- *Income redistribution:* In order to create income equality the government may nationalize industries to reduce private wealth accumulation and create employment to the people. The revenue from the nationalized industries may be used to provide free social services such as education to the majority.

Fall of Socialist Economy in Eastern European Countries

In the late 1980's socialist economic system started to disintegrate in the Soviet Union and in Eastern European countries.

Reasons for the Collapse

The reasons for the collapse of the socialist economy in the Eastern European countries can be categorized into internal and external reasons.

Internal reasons (Endogenous factors)

Internal reasons for the collapse of the socialist economy were as follows:

- There were changes in relations of production and distribution, classes among the people started to emerge due to the fact that some few individuals started to own private property.
- In most of these countries the government failed to meet primary objectives of promoting the living standard of the people because of the slow growth of the economy.
- There was suppression of basic human rights, like, freedom of movement, freedom of expression, freedom of worship, freedom of election etc. This precipitated public discontent with their government.
- Growing opposition against the government due to corruption that was perpetrated by the government officials who were controlling public resources.

- Low economic growth due to low competition, unfulfilled plans, lack of technological innovations, low price/profit incentives etc.

External reasons (Exogenous factors)

Western capitalist nations like the U.S.A were exerting a lot of pressure against socialist system. Various intelligent tactics were used to weaken the socialist countries, like the use of propaganda through international media. Furthermore, the U.S.A and its allies supported opposition forces in countries such as Poland. This opposition succeeded to remove a communist government in Poland.

The place of socialism in the world today

- Although socialism has collapsed in the Eastern European countries still some few countries still practice the system. Examples of such countries are China, North Korea and Cuba.
- The kind of socialism which is practiced nowadays, incorporates a lot of market features more than it used to be before.
- Even in capitalist countries some socialist elements (i.e. relics of socialism) can be observed especially in the provision of social services whereby the government tries to ensure better and accessible social services to the majority.
- Economic fluctuations in capitalist countries are force the governments to adopt planning or interventions in the economy as it is the case for socialist countries.
- Since price mechanism is not a panacea (remedy) to all economic problems some socialist kind of resource allocation is sometimes used.

Capitalist Economic System

This system is also known as market economy, unplanned economy or free enterprise.

Meaning

Capitalist economy is a type of economy based on private ownership and price mechanism making economic decisions concerning what should be produced, how much to produce and for whom to produce. Examples of countries, which practice this system, are U.S.A, U.K, Germany and France.

Features of Capitalist Economy

Capitalist economy has the following features:

- *Freedom of choice and enterprise:* Under a purely capitalist system individuals are free to engage in any type of economic activity they wish as long as they have the means to do so. In other words, if they have the necessary ability or financing and in case there is a demand for their services. Under a capitalist system individuals can choose to be traders, bankers, teachers, doctors, plumbers, gamblers and many other possibilities.
- *Private ownership:* Under the capitalist system, individuals are free to own goods such as radio, television, cloth, factories, Banks, labour, land etc.
- *Competition*: In the free market economy, there is free entry of firms in production. These firms compete for resources and market, such competition often results into increase in efficiency.

- *Existence of classes*: Under this system the society is divided into two classes. That is, the class of the haves and the have-nots. The haves are those who own major means of production and the have nots are those who do not own the major means of production.
- *Price mechanism as a means of allocating resources:* Under capitalist economy all problems of what should be produced, how to produce, for whom to produce are answered by the price mechanisms. Producers are influenced by the demand for the commodities in the process of deciding what to produce. Producers supply a commodity as long as the price of commodity is enough to meet the cost of production and generate profit.
- *Labour power is a commodity*: In the capitalist system poor people are deprived of all means of survival and they are forced to sell their labour in the labour market in order to survive. Capitalists tend to exploit these workers in order to maximize profit.
- *Exploitation is dominant*: The essence of capitalist profit maximization is exploitation of labour power. Labour power is exploited by paying labour low wages and by increasing working hours.
- *Wastage of resources*: Sometimes capitalists compete in the use of resources and use a lot of money to try to win the market through advertisement. These lead to overproduction, duplication in the use of resources, fall in price and emergence of inefficient monopolies.
- *Economic and social crises:* Capitalist economy is characterized by unplanned allocation of resources which leads to market failures and economic crises resulting from over investment, over consumption, wasteful competition etc.

Examples of these crises are:
- Economic depression/recession.
- Unemployment.
- *Needs of the poor are ignored*: Capitalistic production is aimed at maximizing profit as a result producers normally produce expensive luxury goods in order to maximize profit and ignore essential low priced goods or welfare goods such as health and education.

Advantages of Capitalist Economy

Capitalist economy has the following advantages**:**

- *Freedom of production and consumption:* Capitalist economy provides freedom of production and consumption. Producers are free to decide what goods to produce. Consumers likewise are free to choose what kind of commodities to consume.
- *Efficiency of production:* Capitalist economy creates competition to exist among producers. This competition increases efficiency of production since to win market producers must produce goods of high quality. Also higher prices provide incentive to producers to increase the quantity and quality of goods.
- *Political freedom:* In a capitalist economy the state allows for political freedom. People are allowed to be members of different political parties and even form civil associations to promote the socio-economic interest.
- *Freedom of ownership:* People are free to own private property without any verification from the state.

- *High private initiatives:* There is high motivation to produce by private producers because of private profit/benefit, freedom of ownership and freedom of production.
- *Proper resource allocation:* Price mechanism eliminates possible misallocation of resources since producers use their resources to produce only goods wanted by the society or consumers unlike socialist production where goods produced may not be wanted by the people due to poor planning.
- *Low burden to the government:* In a capitalist economy the government takes very few responsibilities especially in provision of essential services. The government concentrates largely on collection of revenue and maintenance of law and order. This reduces the burden of the government in terms of running cost of production of firms it would incur if it would have been engaged in production.

Disadvantages of Capitalist Production

Capitalist economy has the following disadvantages:

- *Existence of classes*: There are two classes of people who own major means of production and those who do not own means of production. Those owning means of production form a class of rich people while those who do not own means of production form a class of the poor.
- *Exploitation is dominant*: Poor people are deprived of all means of survival and are forced to sell their labour power to the capitalists who exploit them by paying very low wages.
- *Economic and social crises*: Capitalist economy is not planned as a result; it is frequently affected by economic instabilities like inflation, depression, overproduction, unemployment etc.
- *Wastage of resources*: Extreme competition behaviour of firms results into duplication in the allocation of resources, overproduction and production of harmful products.
- *Distortion in consumer choices*: Consumers may be misled by persuasive advertising in which consumers may buy commodities of sub-standard quality due to convincing power of advertisement.
- *Welfare of the majority is endangered*: Firms in capitalist economy, always compete to maximize profit. Under profit motives they often use resources to produce luxurious expensive goods instead of public goods. like , health services and education services which promote the living standard of the majority.
- *National interest is at stake*: Freedom of enterprise under capitalism may enable owners of resources to produce goods not for national interest. For example, individuals may produce and sell arms, which may endanger national security.
- Free market system does not ensure maximum social satisfaction. In a free market system goods are distributed according to the ability to pay of the people rather than their needs and desires. But, in reality, not all members of the society will have the ability to pay at the going market prices, therefore satisfaction will only go to the rich while the poor will remain unsatisfied. **‘***’Free market system may work in such a way that while poor people are unable to feed milk to their children, the rich people feed milk to their dogs’’***.**
- It does not ensure rapid growth in developing countries. In developing countries an important problem is to promote growth so as to raise the standard of living of the people and to eradicate poverty and unemployment. In these countries market

mechanism and private enterprise cannot guarantee rapid and sustained economic growth. If left to market forces these countries will remain caught up in vicious circle of poverty. This is because important factors that determine economic growth is capital accumulation which in turn depends upon the rate of saving and investment in the economy. In a free market system the rate of investment will remain very small because of the limited profit prospects and low income.

Functioning of the capitalist system

The capitalist system has no central planning authority which decides what and how goods should be produced and how the total national product is to be distributed among the consumers. In this system, there is freedom of enterprise and choice, businessmen are free to produce and sell whatever they choose and consumers too are free to buy whatever they like .Under this system market forces of demand and supply decide on the allocation of scarce resources. Market forces are reflected in price changes, price determine what goods are to be produced, how are to be produced and for whom to they are to be produced. Thus price mechanism plays a vital role in the working of a free enterprise capitalist economy.

Now the question, is what does market mechanism or price mechanism mean. Market stands for the contact between buyers and sellers of goods. The buyers bring the demand for their goods and sellers offer supply of goods to meet the wants of the buyers. The interaction between demand for and supply of goods determine their prices. Thus the market stands for the forces of demand and supply of goods. Price is determined by market mechanism, that is through demand and supply is as shown in a figure 2.1 below.

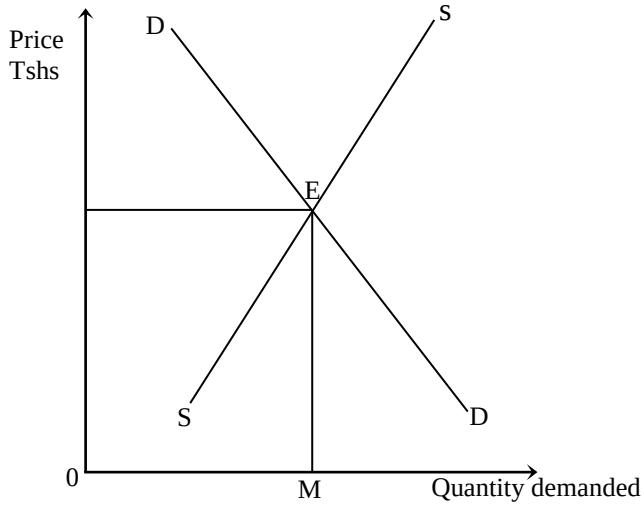


Figure: 2.1 Determination of price under market economy

In figure 2.1, above, OP1 price is determined at which OM quantity of the goods is demanded and sold. The productive resources will be allocated to the production of the goods to the extent OM quantity of the good is produced. If the price is above OP1, then the quantity supplied by the sellers will be larger than the quantity demanded by the buyers. Thus, at a price higher than OP1, the sellers will not be able to sell all the

quantity of the goods they want to sell. In order to dispose the unsold stock of the goods the sellers will compete with each other to bid down prices. As a result of this competition between the sellers, price will fall to level OP1.

On the other hand if price is lower than OP1, then the quantity demanded by the buyers will be larger than the quantity supplied by the sellers with a result that some buyers will not be able to meet their demand fully at that price . So the buyers will compete to obtain their desired quantities and in doing so they will bid up their price to OP1. It is price OP1 at which quantity demanded by the buyers is equal to the quantity supplied by the sellers and both the buyers and sellers are satisfied and they will not compete to change price and the price at which the quantity demanded is equal to the quantity supplied is known as equilibrium price.

Differences between Socialist Economy and Capitalist Economy

A socialist economy and a market economy differ in the following ways:

- *In terms of ownership of major means of production*. In a command economy the major means of production such as industries are owned by the state while in a market economy the major means of production are owned by individuals.
- *In terms of decision to economic problems and allocation of resources*. In a command economy major economic questions concerning allocation of resources are made by the government while in a market economy major decisions on what to produce are made by the forces of demand and supply.
- *The way labour power joins in the process of production*. In a command economy labour power is not a commodity while in a market economy labour power is sold in the market like other commodities.
- *The nature of relations of production*.In a command economy the relations of production is non antagonistic and non exploitative relations while in a market economy the nature of relationship is antagonistic (exploitative relationship)
- The aim of economic activities, in a command economy the aim of any economic activity such as production is to improve the welfare of the whole society but in a market economy the aim of any economic activity is to make maximum profit.
- Nature of socio-economic and political freedoms, in a market economy there are economic, social and political freedom unlike in the command economy where there is lack of social, economic and political freedoms.

Mixed economic system

It is the type of economic system, which has both the public and private sectors existing and functioning side by side in various economic activities. Due to the fact that no country in the real world is practicing either pure capitalism or pure socialism, most economies are mixed.

Features of Mixed Economic System

The mixed economy has the following features:

- *Ownership of resources*: Under the mixed economic system some economic resources are owned by the government while individuals also own economic resources.
- *Response to economic problems*: Both the government and price mechanism answer key economic problems about what should be produced, how to produce and for whom to produce.

- *Functions of the government in the mixed economy*: In the mixed economy the government has the following functions; regulation of the economy, redistribution of wealth and investment in public goods.
- *Joint ventures exist in owning business firms:* In the mixed economy there are some firms which are owned jointly by the government and individuals.
- The government help weaker section of the society by providing subsidies and free public goods.

Advantages of the Mixed Economy

Mixed economy has the following advantages:

- Mixed economy corrects weaknesses of capitalist economic system and socialist economy thus mixed economy provides the best alternative system for a country which has failed to build an effective capitalist or socialist system. For example, whenever there is instability in the economy the government would intervene in economic activities or control economic variables like money supply, consumption, interest rates to solve problems like inflation.
- Control of market failures. Since price mechanism can not efficiently provide public goods like education, health, road, law and order, defense etc. The government in the mixed economic system correct this weakness of market mechanism by providing public goods such as defense and security, education, roads etc.
- Control of inefficiency in production and wastage in allocation of resources. Mixed economic system involves some kind of planning. In this case, it can control wastage of resources, by allowing private sector to enjoy some kind of economic freedom in allocation of resources, by building an element of competition which usually increases efficiency in production.
- Classes are minimized; unlike in capitalist economy, where classes are inevitable, in mixed economy, classes are minimized as the state take care of the underprivileged by redistributing wealth in the economy.
- Wider freedom of choice. The private sector is allowed to produce goods and services; this gives consumers a wider range of goods or services to consume unlike in pure socialism where consumer's choices are limited.

Disadvantages of mixed economy

Mixed economy has the following disadvantages:

- Private sectors sometimes may harm the public sectors in the case of mobility of factors of production. Factors of production like labour tend to move from where wages are low to the firms/employers where wages are high. In a situation where the public sector pays low wages, workers move from it and go to private sector. This affects provision of services in a public sector.
- Existence of a strong private sector in the mixed economy brings problems of implementation of some government plans. For example, the government may decide to provide free social services to the people but the private sector will not implement such a policy because the private sector would always charge a price in order to make profit.
- Wasteful competition may exist: In the mixed economy, public and private sectors may compete in production of similar products such competition may result in the

decline of a public firm due to its inefficient nature or may result in overproduction and consequently fall in price of a commodity and hence lead to loss.
- Private sector ownership may enrich few members of the society and lead to income inequality just as it is in capitalist economic system. This will occur if the government in power does not have strong measure of redistributing income.
- Private sector is often reluctant to pay tax and show little cooperation in government efforts to collect enough revenue. In this case, if the private sector is dominant in a mixed economy, the revenue of the government from tax may be lower that what is supposed to be collected.

Objectives /Functions of Economic Systems

All economic systems have similar objectives although they differ in the approach of meeting the objectives. The main objectives of economic systems are:

1. To distribute output among the members of the society. Any economic system must answer the question of who gets what in the production of output or the national cake.
2. To provide for maintenance and expansion of capital goods. Every system must expand capital goods.
3. Allocation of resources. Every system is responsible for the allocation of scarce resource in production of goods and services. In the market economy, market forces allocate resources while in socialistic economy the government plans allocation of resources.
4. To adjust production and consumption so as to make sure that production does not exceed consumption and consumption does not exceed production.
5. To make social choices: It means to decide on behalf of the government what kind of goods and services to produce.

Why is the mixed economy more preferred than other economic systems?

The mixed economic system is a type of economic system which has both the public and private sectors existing and functioning side by side in various economic activities. Due to the fact that no country in the real world is practicing either pure capitalism or pure socialism, most Economies are mixed.

The reasons as to why most countries nowadays prefer mixed economic system than other systems are as follows.

- Pure free markets can not provide all the goods and services that people want and are willing to pay for, there are some public goods which by their nature can not be efficiently produced by the individuals producers and therefore need to be produced by the government, likewise in a command economy the government can fail to anticipate the actual needs of the consumers and lead to shortages, the government in a mixed economy control this problem by allowing individual producers to respond to the needs of the consumers which are expressed through their demand in the market, on the other hand the government is able to correct the weaknesses of the private sector of failing to produce public goods by engaging in supplying essential public goods.
- Government intervention is necessary to prevent social cost of production such as pollution; in a mixed economy the government takes measures which control social costs such as pollution.

- In a mixed economy the government can redistribute incomes which results due to uneven ownership of resources by helping the lower income groups through tax relief's and subsidies.
- Mixed economic system involves some kind of planning in this case it can control wastages in allocation of resources and control some economic crises such as inflation and unemployment also by allowing private sector to enjoy some kind of economic freedom in allocation of resources, it builds an element of competition which usually increases efficiency in production.
- The merit goods which can not efficiently be provided by the private sector can be provided by the government.
- The government can fix incomes to factors of production in order to stabilize incomes in a society.

How economic systems differ.

Economic systems differ depending on the following:

1. Types of property which exist and who own these properties. In a socialist economy, property is owned by the public while in capitalist system properties are owned by individuals.
2. The nature of relationship among the people in the society: If there is non-antagonistic relationship then the system is socialist and if there is antagonistic relationship then the system is capitalist.
3. Types of economic institutions and the way these institutions are structured and organized.
4. The way the key economic decisions are made: In a socialistic economy, important decision concerning allocation of scarce resources are made by the government while in a capitalistic system the key decisions are made by the market forces of demand and supply.

A transition period

A transition period is a period between any two economic systems the one system, that is, the old system is being replaced by another system.

It is a period of time when the old system like a socialist system is changing to a new system like the capitalist system.

Features of the Transition Period

A transition period has the following features:

1. It is characterized by remaining structures or elements (relics) of the old system.
2. The old system has not totally collapsed and the new system is just on the process of being established.
3. It is a period of making changes in the old system.

Importance of the Transition Period

The transition period has the following importance:

1. It is a period of making adjustment or corrections by removing weaknesses of the old system and replacing them with strengths of the new system.
2. It is a period of learning from experiences of other experienced economic systems of other countries like learning how to privatize public institutions from capitalist

countries when a country is transforming itself from socialist economy to capitalist economy.

3. It is a period of experimenting on how new ideas of the new system can be implemented. For example, in Tanzania, cost-sharing system was introduced to test whether people would accept it or not.
4. It is a period of taking actions, innovations and criticisms with the aim of achieving the predetermined goals.
5. It is a period of making the society aware of the intended objectives, changes as well as when and how the changes will be made.

Pre-capitalist economic system

According to Marxist school of thought there are three economic systems which existed before the emergence of capitalist economic systems (i.e. Pre-capitalist systems) namely primitive communalism, slavery and feudalism.

Primitive communalism

This was the first stage of development of the human societies. In this system the following characteristics are common

- Collective ownership of major means of production for example land.
- No exploitation of man by man.
- Equal share of output.
- Low level of productive forces.
- No surplus production.
- No classes.
- Poor standard of living.

Disintegration of primitive communalism

Primitive communalism disintegrated due to the following reasons:

- Development of productive forces which led to an increase in production and emergence of surpluses.
- Division of labour and specialization due to development of skills and increase in population.
- Emergence of classes due to different levels of output.
- Disintegration of clan or community ownership due to emergence of private ownership.
- Income inequalities made some groups of people to enslave others who failed to pay debts as a result another mode of production of slaves and slave owners emerged.

Slavery

This was a system of production whereby a group of individuals in the society namely slave masters owned other fellow human beings (slaves) as their instruments of production.

Features of Slavery Mode of Production

A slavery mode of production has the following features.

- The society was divided in two classes of slaves and slave masters.
- There was exploitation of man by man.

- Means of production such as land together with slaves were owned by slave masters.
- Slave labour was the basis of slavery production.
- Slaves were bought and sold like any other commodity.
- Slaves were treated so inhumanly like animals.
- The level of productive forces were still poor.
- The living conditions of slaves were very poor.
- The system was very violent characterized by fighting between slaves and slave owners.

Disintegration of slavery

Slavery disintegrated due to the following reasons:

- Slaves started fighting against their masters by destroying tools and uprooting crops.
- It was becoming uneconomical to maintain slaves because the outputs in some instances were lower than the cost of keeping slaves.
- Decline in population leading to scarcity of slaves.
- Emergence of humanitarian activists like missionaries who pressurized for the end of the system which to them was regarded to be evil.
- Development of productive forces reduced the need for the use of labour intensive technique of production hence the lower the demand for slaves.

Feudal system

This was the third pre - capitalistic system where few people were owning land and using it to exploit others i.e. the tenants and serfs.

Features of Feudalism

Feudalism has the following features:

- More improvement in productive forces than in the previous modes of production.
- Land was the main tool of exploitation.
- There were two classes of people the land lord and the tenants and serfs.
- Land was owned by few individuals i.e. the landlords.
- There was exploitation of man by man, land lords exploited the tenants.

The economic system of Tanzania

No country in a real world which is practicing either a pure capitalist system or socialist system.

Tanzania likewise is neither a pure capitalist nor pure socialist country, it is practicing a, mixed economy evidenced by the existence of the following features of mixed economy.

- Major means of production are owned by both the public and individuals. For example some industries such as Urafiki textile is owned by the government while other industries such as Mbagala textile mill is owned by individuals, various joint ventures also exist between the government and individuals in ownership of firms.
- Both the government and individuals are involved in making decisions on the key economic questions of what to produce, how to produce and for whom to produce.
- The government is taking measures to protect and help underprivileged individuals in a society by providing free social services.

- The Government of Tanzania intervenes in the production of industries so as to prevent social cost of production such as pollution, also the government does applies some limited regulatory measures in economic activities to prevent producers from enjoying absolute freedom like in pure capitalism; the aim being to maintain stability and growth.
- Macroeconomic planning, like formulation of a country's development plan is done by the government while Micro planning is left in hands of individual producers.

TOPIC TWO

PRODUCTION

What is production?

Production is any activity which results into the creation of goods and services in order to satisfy human wants.

In economics, sense, production is for exchange while in the general meaning production may mean the creation of goods and services for personal consumption.

Production is not complete without consumption. Therefore production involves activities which facilitate transfer of goods and services from the areas where they are produced to where they are demanded for consumption. Examples of such activities which facilitate transfer of goods and services are:-

- Transportation
- Communication
- Ware-housing
- Banking
- Advertising
- Insurance
- Marketing etc

Classification of Production Activities

According to the modern classification there are five categories of activities, which are involved in production.

Primary activities:

These involve extraction of raw materials directly from the earth or the sea. Examples are farming, fishing, lumbering and mining.

Secondary activities:

These involve changing the form of a commodity from a stage of raw material to a stage of final goods. Example of secondary activities is manufacturing industries.

Tertiary activities:

These are activities that involve changing the situation of a commodity from where it is produced to the place where it is needed for consumption. Tertiary activities are divided into two main activities:

(i) Commerce: Commerce involves trade and aids to trade.

(ii) Direct services: This involves activities which render services directly to consumers: Examples of direct services are, teaching, medical care, law and hairdressing etc.

Quaternary activities

This involves provision of specialists information and expertise for all the above sectors, i.e. primary, secondary and tertiary industries. Examples of tertiary activities are computer programming, research, designs engineering, Internet services etc.

Quinary:
This involves the services, which include administration and supervision by the government, research and education. These classification can be summarized as shown in figure 2.1.

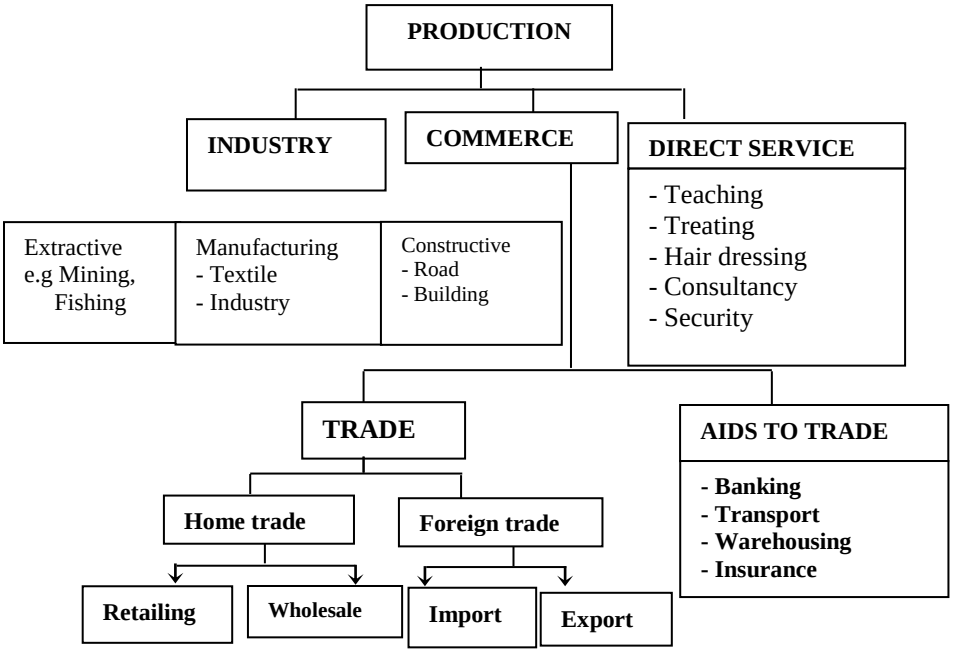


Figure: 2.1 Production flow chart

Examples of production activities are as shown in figure 2.2.

In figure 2.2, A, shows a peasant digging; it is an example of a primary activity. B, shows a trader selling food items; it is an example of trade. C, shows a mason laying bricks, it is an example of a constructive industry. D, shows a doctor treating a patient; it is an example of a direct service. E, shows a carpenter making a table; it is an example of assembly industry. F, shows a barber cutting hairs; it is an example of a direct service.

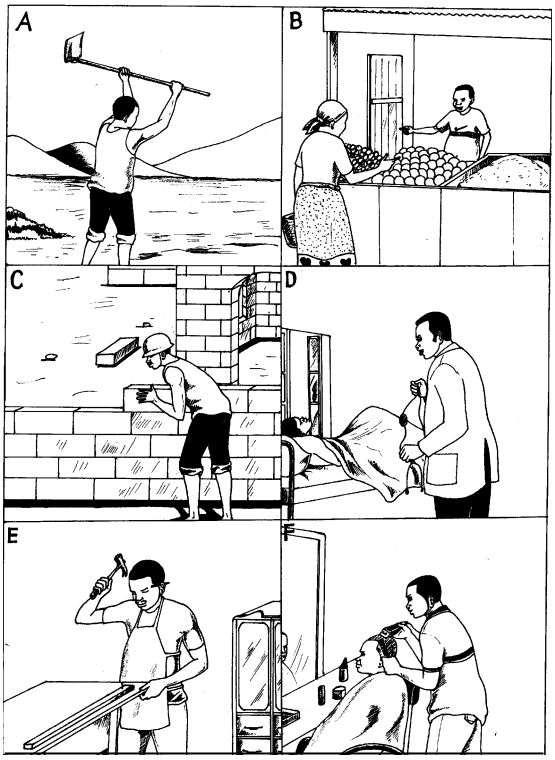


Figure: 2.2 Examples of production activities

Importance of Production

Production has the following importance:

1. **Satisfaction of human wants and needs:**

   Human wants refer to all human desires or things that must be satisfied by using certain needs. Examples of wants are such as hunger, thirst, education, and health. Human needs are the goods and services (means) which are used to satisfy human wants. Examples of human needs are food, water, electricity, books, and house. Needs and wants are related in a sense that needs are used to meet wants. For example one takes food to satisfy hunger, water to satisfy thirst, books to satisfy education, cars to satisfy transportation. So, in economic meaning food, water and books are not wants but needs (means) to satisfy hunger, thirst and education respectively. The distinction between needs and wants can be illustrated as follows in table 2.1.

Table 2.1

Examples of wants	**Examples of needs**
Thirst	Water, soda
Hunger	Food
Education	Books, teachers, chalk, classrooms
Transport	Car, fuel, driver

It can be further noted from table 2.1 above, that needs are usually tangible in nature while wants are intangible and are largely contained in a person's feelings and desires.

2. **Increase the welfare of the people**
   Goods and services which are produced are aimed to improve welfare of the people. The welfare of the people increases as they consume more goods and services. The capacity to consume more goods and services is a result of improvement in income generated from production activities.
3. **Increase the size of wealth of both the person and the nation**
   Goods and services produced increase the size of wealth both to individuals and the nation. Increase in the size of wealth or income of an individual or nation depends on the size of production, effective utilization and management of resources in the production process.
4. **Creation of employment**
   Production creates employment to various factors of production which are engaged in the production process. Examples of these factors are like labour and capital.

Types/Kinds of Production

There are two types of production, that is, Direct and Indirect production.

Direct production

This is the production of goods and services for personal consumption. It is also known as subsistence production. For example, a farmer may produce maize for his /her own use; not for sale.

Indirect production

This is refers to production of goods for exchange. For example, when a farmer produces maize for sale.

Modes of production

A mode of production is the unity between the productive forces and the relations of production. The relations of production or production relations are based on who owns the means of production and how the products are divided among individuals in the community.

Production relation may be non-antagonistic that is friendly when the means of production are collectively owned and the products are equally distributed or it may be antagonistic, that is, unfriendly when there is private ownership of the means of production and there is exploitation of man by man (unequal distribution of the products).

The productive forces of the society constitute the means of production and labour power. The means of production is the unity of the instruments of labour i.e. machines, roads, electricity, dams etc and the objects of labour i.e. natural objects like land.

Due to changes and development of the productive forces and the production relations, human development has passed through the following stages (mode of production)

- Primitive communalism.
- Slave mode of production.
- Feudal mode of production.

- Capitalism.
- Socialist system.

The mode of production can further be grouped into antagonistic modes of production which includes all exploitative modes of production like slavery, feudalism and capitalism and the second group is non-exploitative modes of production like primitive communalism and socialism. These two categories of modes of production can be distinguished as follows.

In the antagonism modes of production, there is private ownership of the major means of production in which ,productive resources like land, industries, factories, roads, railways etc are privately owned under antagonistic modes, while in non-antagonistic modes these resources are collectively owned.

Under antagonistic modes of production, there are two classes/layers strata of people, the exploiters and the exploited. While in the non-antagonistic modes of production all men and women are equal and there is respect of human race. This means that there are equal classes of people in non-antagonistic modes of production.

Finally in non-antagonistic modes of production there is equal distribution of the output of labour but this is not the case under antagonistic modes of production where there is unequal distribution of the products. The exploiters take a greater share of labour products while leaving those who produce the output with nothing or very little to sustain their lives.

Primitive Communalism

This was the first stage of human development where man was depending on what nature could provide. At first they lived in carves and they depended on hunting and gathering. The main characteristics of the primitive mode of production were as follows.

- The level of development of the productive forces was low since they used primitive tools in production.
- As a result of low level of development of the productive forces they produced no surplus to allow any kind of exchange to take place. All what was produced was consumed and nothing was left (subsistence life).
- Due to the use of crude tools people were obliged to work together as in hunting. As a result there was no specialization.
- The productive resources of the society (i.e. the means production) were collectively owned. The resources like forest, rivers, lakes were under the control of all people.
- There were no classes of people since all people were regarded equal in the community.
- There was equal distribution of the products since all people participated in one way or another to produce that output. Every member of the society was assigned some duty to serve the whole community.
- There was no exploitation of man by man since all people worked and the output was equally distributed.

Slavery Mode of Production

This was the second mode of production where some few men owned not only the means of production but also owned other men as slaves. This was the crude mode of

exploitation. Slaves were treated like equipment and killing a slave was not a murder case. The following are the characteristic features of this mode of production.

- The instruments of labour were much more improved unlike during primitive communalism where these instruments were very crude.
- There was private ownership of the means of production in which the slave masters owned the means of production while the slaves owned nothing.
- In the slave mode of production there were two classes of people these classes were the slave owners (masters) and the slaves owned by the slave master.
- There was exploitation of man by man since the slave owners exploited the products of the slave labour.

  The slaves were exploited since they had to work for their masters and they were not given anything in return except food, which could only enable them to live and work.
- There was no respect of human life and slaves were not allowed to get married and have children.
- There was unequal distribution of the products the slave owner appropriated the whole output of slave labour while leaving slaves with nothing.

Feudal Mode of Production

This was the third mode of production in which few own land and use it to exploit the tenants/serfs. The feudal mode of production had the following characteristic features.

- There was much improvement in the productive forces like discovery of compass direction, improvement in ship building, navigation, production of surplus and growth of exchange centers.
- Land was the main tool of exploitation. Few land lords owned land which they rent to the serfs/ tenants who were obliged to pay rent in a form of labour, rent in kind or money rent.
- There were two classes of people. These groups were the feudal lords and the tenants/serfs. The landlords owned land while the farmers were obliged to pay rent
- There was private ownership of the major resources by the landlords while the tenants had nothing.
- There was exploitation of man by man since the landlords exploited the labour of their tenants.

Capitalist Mode of Production

This is the fourth mode of production where the capitalists use capital to exploit the workers. The features of this mode of production are as follows:

1. There is private ownership of the major means of production by few while the majority are left with nothing except their labour power which they have to sell so as to earn their living. Resources such as land, factories, railways, banking etc are in the hand of few capitalists.
2. Labour power is a commodity since the workers are left with no means of survival except their labour power which they have to sell to earn a living.
3. There are two classes of people, that is the capitalists, who own the means of production and workers who own nothing except their labour power which they have to sell.

4. There is high improvement of (science and technology) the productive forces and out put is much more increased. As a result surplus is produced and exchange is highly developed.
5. There is exploitation of man by man since the capitalists appropriate the products of workers (labour). The capitalists become rich while the workers remain poor.

Socialist mode of production

This is a mode of production which is formed after the elimination of the capitalist system. It has the following features:

- The level of science and technology is very high since the level reached in capitalist mode will be transformed to socialist mode of production.
- There is public ownership of the major means of production all the means of production which are in the hands of few capitalists are nationalized and placed under state ownership.
- Labour power is not a commodity since the workers are also partly owners of the means of production.
- In socialist mode of production, there are no classes of people. There is no class antagonism since all men and women are equally respected.
- There is no exploitation of man by man since all people work together. Also distribution is equal according to contribution.

Factors of Production

These are the economic resources, which assist the process of production. Factors of production are also known as input, tools of production and agents of production.

Categories of factors of production

There are four major categories of factors of production:-

1. Land.
2. Labour.
3. Capital.
4. Entrepreneurship.

Land

Land includes all kinds of natural resources, that is, things which are not made by man like soil, farmland, minerals, playgrounds, fishing grounds, forest, oceans, rivers etc.

Features of Land

Land has the following features:

- It is a gift of nature. It has been provided freely by nature. It is non-man made, that is, man did nothing to bring land into existence unlike other factors such as capital, which is accumulated or made by human beings.
- Unlike other factors of production, land is limited in quantity or fixed in supply so that even in the long period its supply cannot be increased.
- Location of land is fixed.
- Each plot of land has unique natural characteristics
- Demand for land is a derived demand.
- Land provides site/place where production can take place like schools, industries, roads are built on land.

- Land lack geographical mobility, that is, it can not be moved or transported from one place to another. However land is mobile in occupational sense, that is, land can be changed from one use to another use for example a piece of land can be used as a farmland, playground or site for building industries.
- It is subjected to the law of diminishing returns.

Labour

Labour means any mental or physical efforts made by human being in the process of production or any mental or physical efforts of human beings for any beneficial activity (productive activity). Example of labour is the work of a doctor of treating people, a teacher of teaching, a farmer of cultivating land, a carpenter of making furniture etc.

NB: Any human effort which is not made for any material benefit or any payment cannot be regarded as labour, for example, if a mother (at home) looks after her baby without any payment from the husband her work cannot be regarded as labour or if a person play music just for recreation then playing music in this situation cannot be regarded as labour.

Features of Labour

Labour has the following features:

- Labour is the most mobile factor in both geographical and occupational sense, that is, labour can easily move from one geographical area to another to work or change from one kind of job to another kind of job. For instance, a doctor may become a politician; a teacher may become a business consultant etc.
- Any labour must be aimed for production.
- Without labour other factors cannot produce.
- Labour cannot be separated from laborers.
- Demand for labour is a derived demand.
- Labour differ in efficiency.
- Labour psychologically prefers leisure to work.
- The payment for labour is wage.
- The supply of labour increases with the increase in wages, that is, when wages increase then supply of labour also increases.

As it is shown in figure 2.3 below.

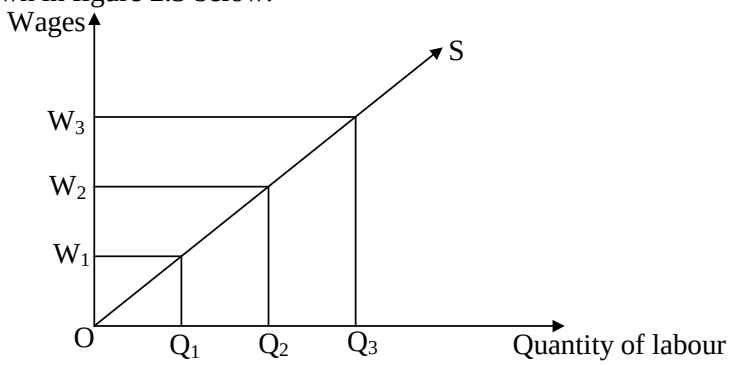


Figure: 2.3 Increase in labour supply due to increase in wages

In figure 2.3 above, the supply of labour increases as the level of wages increase.
- Labour is supplied only by living things especially human beings.
- Labour is not transferable between people, that is, the ability to do work can not be transferred from one person to another person.

Supply of Labour

Supply of labour means the total number of people, that is, men, women and children who are willing and able to work. It can also be referred to as the total number of people available for employment. Supply of labour depends on the number of factors:
- *The population of a country:* If the population is large, then the supply of labour also will be large and vice versa.
- *Payment of labour:* If the payment of labour, that is, wages/salary is high the supply of labour will also be high and vice versa.
- *Education and training:* If people are educated and trained then the supply of labour will be high.
- *Years of training and schooling:* If the number of years of schooling and training is very high, it will affect the supply of labour, for instance, if people spend so many years in schools and colleges then there will be little time for them to work.
- *Mobility of labour:* If labour can move with ease from one occupation to another or from one geographical area to another then the supply of labour will be high unlike when labour can not move from one occupation or geographical area to another.
- *Retirement age:* If the retirement age is long the supply of labour will be high unlike when the retirement age is short.
- *The degree* to which trade unions are able to control recruitment.
- *Degree of substitutability:* Where labour can easily be substituted its supply tends to be low.
- *Working incentives:* If workers in a particular industry are provided with various kinds of incentives such as meal, bonuses, transport allowances, promotions, scholarship etc. the supply of labour to the industry will be high unlike in an industry where nothing is given as incentives to workers.
- *Profession restrictions:* In some professions such as medicine, accountancy and engineering there are professional boards that are established to control, safeguard and maintain profession standards and registration of qualified labour in their profession. As a result of such control there is limited supply of labour in these professions.

Efficiency of Labour/Productivity

Efficiency of labour or labour productivity means the ability of a worker to produce greater quantity and quality of a commodity in a specific period of time.

Factors Affecting Efficiency of Labour

- *Education and training:* If workers are well trained and educated, their ability to produce goods and services or their ability to work will increase because education and training provide skills and knowledge to workers which enable them to increase their levels of productivity.
- *Social services to workers and other incentives:* If workers in a working place are provided with services and incentives they will be motivated to work hard hence their efficiency will increase. Examples of such services and incentives are

transportation of workers from their home to the working place, meals, medical care, bonus etc.

- *Levels of wages:* High wages tend to motivate workers or to encourage workers to work hard. Therefore, when wages are high efficiency of labour will increase and vice versa.
- *Efficiency of other factors:* The productivity of labour depends on the efficiency of other factors of production like capital and entrepreneurship. For example If a worker is producing by using a machine which has ability to produce large output per unit of time then that particular worker will be efficient.
- *Peace of mind:* If workers have peace of mind that is if they are satisfied, comfortable, relaxed, have no psychological problem they will be more productive than if they lack peace of mind, for example a worker who is in fear of loosing a job or who has some family problems, loses concentration on the work consequently his /her efficiency declines.
- *Experience:* More experienced workers are more efficient than less experienced workers.
- *Hours of worker:* A worker who works for a reasonable time can be more efficient than the one who works long hours.
- *Extent of division of labour:* Division of labour increase skills and efficiency of labour.
- *Conducive working environment:* When workers work under conducive environment their productivity will increase. For example in a classroom where there is enough ventilation, space, absence of noise and disturbances, a teacher who teaches in such a class will be more comfortable to do the job and the productivity will increase.
- *Normal weather conditions:* Normal weather conditions provide conducive conditions for workers to concentrate on their work unlike extremely hot or cold weather conditions.
- *Health of the worker:* If a worker is in a good state of health his/her productivity will improve while illness will deter the efficiency of the worker

Division/Specialization of Labour

This refers to the division of work into a number of separate processes. Each process is performed by a single person or a group of persons. For example a work of producing office pins, in this type of production, division of labour will be as follows:-

1st Process - 1st man - Drawing the wire.

2nd Process - 2nd man - Straightening the wire.

3rd Process - 3rd man - Cutting the wire into pieces.

4th Process - 4th man - Sharpening the ends.

5th Process - 5th man - Making the heads.

6th Process - 6th man - Whitening the pins.

7th Process - 7th man - Parking the pins.

Advantages of Division of Labour

Division of labour has the following advantages:

- *It leads to an increase in skills or knowledge on work to workers:* Division of labour or specialization results in the increase in skills of work to workers because of the repetition of the same task/operation for a very long period of time. In this case workers become skilled because repetition makes perfect.
- *It saves time between processes:* Division of labour reduces the wastage of time, which occurs when workers have to change from one process to another. Also less time is required to learn how to perform a single operation or task than to learn many tasks.
- *It makes employment of specialists easy:* When a work is divided into different processes it becomes easier to employ specialists who can perform in these different processes. In this case employers can easily know the suitable person/s for each area of specialization.
- *It leads to efficiency of labour and increase in output:* When workers have specialized in different processes they may become efficient because of the great skills, which makes them produce more output.
- *The cost of supervision:* The cost of supervision is minimized since specialization does not need much supervision.
- *It enables workers to enjoy a considerable degree of freedom,* leisure and more goods.
- *Workers suffer less fatigue:* If workers specialize in simple tasks they may become less tired.
- They are able to finish their tasks in a short period of time hence saving of time.
- *Introduction of machinery:* When a worker is doing the work for a long period of time, he/she may discover some machines to assist him in the work or to simplify work.
- *Division of labour increases output and thus reduces unit cost,* lowers the price and therefore reduces cost of living and increases the standard of living.

Disadvantages of Specialization/Division of labour

Division of labour has the following disadvantages:

- *Monotony/boring/cumbersome of work:* Specialization by processes means that each worker performs only one task many times each week, each month and each year. So he/she becomes bored, loses appetite and interest for the work. Consequently efficiency declines.
- *Workers become less creative in other areas (Lack of creativity):* Due to the fact that workers are too much specialized in their areas of specialization, it becomes very difficult for them to expand their knowledge, that is, specialization limits workers to learn other skills which are needed in other areas of specialization for example a teacher who has specialized in teaching only one subject for a long period of time can hardly remember other subjects.
- *Risk of unemployment to workers:* Specialization limits workers in their areas of specialization and therefore they can not easily be employed in other areas in this case they become so vulnerable to the unemployment problem. These workers will not be able to be employed in other areas because they lack skills or knowledge, which are different from their areas of specialization.

- *Specialization may lead to increase in costs of production:* Specialization involves employment of many specialists who are employed to work in different sectors. This increases costs of paying these workers.
- *Absence of one of the specialists in a particular time may affect the whole process of production*: Due to great interdependence among the workers and their processes of production, for example, if there are four processes in the production of a particular commodity and each process is assigned to a single person, once one particular person is absent then the whole production process will not take place.
- *Fall in the price*: Since specialization leads to an increase in output it may result to oversupply of a commodity and thus a fall in the price of the commodity when price falls a firm may incur loss.
- *When a country has specialized in a certain product,* A fall in demand for such a product will have serious repercussions to the economy of that country.

Limitations of Division of Labour

The factors which limit division of labour are as follows:

- *Small extent of the market:* When extent of the market is small, division of labour will be meaningless because division of labour leads to an increase in output which needs a large extent of the market.
- *Poor exchange and distribution facilities:* Production is for exchange; if exchange facilities such as banking and transport are weak, and then exchange of large output resulting from division of labour will be ineffective.
- *Nature of goods and services:* Some goods or services by their nature cannot be produced by division of labour. For example, Shoe shining, hair dressing etc.
- *Size of labour force and capital:* An entrepreneur faced with limited number of labour force may face difficulties in dividing his/her work into many separate processes.

Types/Forms of Division of Labour

Division of labour can be divided into the following types:

- *Division of labour by process:* This is a type of division of labour whereby a work is divided into separate processes such that each of the process is performed by different persons.
- *Division of labour by sex:* This is a type of division of labour whereby work is done by people according to their gender. For example, most of the difficult work which needs physical energy is done by men while light duties are done by women, for example, most of the soldiers, carpenters, fishermen and dock-workers are usually men while most of the house keepers, nurses, and hoteliers are usually women.
- *Division of labour by age:* This is a type of division of labour whereby the work is being done by people according to age of a person. In most of African societies children perform light duties while adults perform heavy duties, that is, duties which need more physical and mental energy, Age - sex system in Maasai societies is a good example.
- *Division of labour by territory/country:* This is whereby countries specialize in production of certain commodities/commodity. For example, most of the third world countries have specialized in the production of agricultural products while developed countries have specialized in the production of industrial products.

- *Division of labour by product/region:* This is whereby different regions of a country have specialized in the production of various commodities. For example in Tanzania, lake regions have specialized in the production of cotton and fish products, southern highland regions (Ruvuma and Mbeya) have specialized in the production of food crops(maize, paddy), other regions like Kilimanjaro have specialized in the production of banana, coffee etc.
- *Division of labour by professional/particular training or skills:* This is whereby people do work depending on their professional or type of skills they have. For example teachers do the job of teaching, doctors do the job of treating people and soldiers do the job of maintaining peace and security.

Extent of Division of Labour

Division of labour depends on a number of factors:

- *Size of the firm:* When the size of the firm is small division of labour may limited because of the small number of processes and labour but when the size of the firm is large division of labour is possible because of the large number of processes and labour force.
- *Level of technology:* When a firm uses advanced technology it can expand the size of production, which will need division of labour by process in order to increase efficiency of production.
- *Number of labour:* Division of labour in a firm depends on the number of labour in a firm if a firm has a small number of labour the of division of labour will be limited but if a firm has a large number of labour force it will be possible to carry division of labour.
- *Size of the market:* Division of labour depends on the size of the market since division of labour results into increase in output, division of labour is possible only if the output produced are sold in the market if the output produced are not sold then division of labour will be meaning less.

Capital

Capital is the wealth or an asset that is used to produce other wealth (assets). Capital includes all types of producer goods like machinery, tools, buildings, raw materials, means of transport, telephone wire etc.

Features of Capital

Capital has the following features:

- Capital is a factor of production which increases efficiency of other factors because it simplifies work.
- Unlike land, capital is made by human beings. It is not provided freely by nature and it is a factor, which increases efficiency of other factors.
- Supply of fixed capital cannot be increased in the short run because they take a long time to be produced.
- Capital can depreciate or become obsolete.
- It is less subjected to the law of diminishing returns as compared to land.
- Most capital forms cannot work alone without combination with other factors like labour.
- It has an element of time Capital renders its services over a certain period of time and its payments depends on the length of time in which it is used in the process of

production. For example, the interest on loanable capital depends on specific period of time, like three months, six months or one year.
- Capital results from the accumulation of assets over years, it results from savings by a person or society.

Types of Capital

Capital can be grouped into the following categories:

Public and private capital (Social capital)

- *Public capital*: This is the type of capital owned by the whole society. Examples of public capital are schools, hospitals, roads, bridges etc.
- *Private capital: This* is the type of capital owned by an individual like private schools, machanical tools etc.

Fixed and circulating capital

- *Fixed capital: This* is the type of capital, which is durable in nature and is used in production for a long period of time, for example, furniture, buildings, some types of machines etc.
- *Circulating capital:* This is the type or form of capital used in the running of day to day production activities or in running a business. For example, raw materials, fuel and money etc.

Capital accumulation and capital formation

Capital accumulation means a process of increasing the number of capital goods. Capital accumulation depends on saving. If saving is high capital accumulation will also be high. Saving depends on the following:-

- *Ability to save, that is, income level:* Assuming *ceteris paribus* the higher the income, the higher the savings and vise versa.
- *Willingness to save:* Assuming ceteris paribus the higher the willingness to save the person has, the higher the saving and vice versa.
- *Rate of interest:* The higher the rate the interest, the higher the saving and vice versa.

Living on capital or capital consumption

- *A person:* A person is said to be living on his capital if he has to supplement his current income by drawing on past savings in order to make both ends meets, when he has exhausted his savings he will have to accept a lower standard of living.
- *A nation:* A nation is said to live on its capital when it can not maintain its stock of capital or accumulate further capital goods is said to living on capital that is when it is consuming its stock of capital goods. For example, foreign reserves for buying consumer goods instead of investing in capital goods like roads, factories and railways. This situation normally occurs during times of war when productive resources are allocated for production of weapons instead of accumulating more capital.

Possible causes of Capital consumption

Capital consumption is caused by the following factors:

- When a country devotes its resources for the production of goods which do not assist an increase in capital goods. This may happen during a period of war when a

country in a very short period of time may concentrate on production of goods to facilitate the war instead of using its resources to produce new capital to replace old ones.
- In case a country is highly indebted and thus uses a lot of its output to repay debts instead of buying new capital goods to replace old or worn out capital.
- In case a nation use foreign reserves for buying consumer goods instead of investing in capital goods like roads, factories and railways.
- Due to lack of technology to maintain worn out capital goods
- A fall in demand for final goods produced by capital goods delimit firm's capacity to replace worn out capital goods.

Roles of Capital in Development

Capital plays the following roles in development:
- When invested, capital leads to creation of employment opportunities for the people.
- Capital leads to increase in production in the economy.
- Capital encourages specialization, which lead to increase in output and efficiency.
- Capital enables full utilization of resources.
- Capital enables diversification of the economy.

Entrepreneurship

An entrepreneur is the owner of a business. It is a factor of production, which organizes other factors of production in the production process, and establishes the business.

Characteristics of Entrepreneurship

Entrepreneurship has the following features:
- An entrepreneur does not work alone he must employ other factors.
- The supply of entrepreneurship skills is scarce and cannot be developed easily.
- The reward of an entrepreneur depends on efficiency of other factors.

Functions of an Entrepreneur

Entrepreneurship has the following functions:
- To start the business- an entrepreneur is responsible for starting the business.
- To employ and organize other factors of production in a production process.
- To make economic decisions such as what to produce, how to produce that is the methods of production to be applied, for whom to produce and where to produce. Also the entrepreneur must decide on what proportions to combine these factors of production, that is what amount of capital should be combined with certain amount of labour.
- To forecast the demand for his product by doing market research of the product, that is, finding whether the commodities would be demanded by the customers or not.
- To bear the risks of business. An entrepreneur is responsible for all the risks, which cannot be insured. For example, risk of loss, risk of a fall in the demand for the commodity and risk of decline in the profit of the business. When a business makes profit it would be rewarded to the entrepreneur and when the business incurs loss it will be borne by the entrepreneur.

Mobility of Factors of Production

Mobility of the factors of production refers to the shift or movement of factors of production from one place to another place or from one kind of occupation to another or from one industry or firm to another industry or firm.

Causes of Mobility of Factors

Mobility of labour is caused by the following factors:

- Differences in earnings. Factors such as labour tend to move from where wages are low to areas where wages are high.
- Decline or collapse of industries. When an industry declines labour would move to other area to find employment.
- Racial prejudices, victimization and poor administration may lead workers to leave some types of jobs.
- Ambition for promotion may induce workers to change occupation.
- To change environment, to join related social groups may encourage labour to move.
- Political and social instability may force labour to move to other areas.

Types of Mobility of Factors of Production

There are two types of mobility of factors of production:-

1. Occupational mobility.
2. Geographical mobility.

Occupational Mobility

This is the change from one occupation to another occupation. For example a teacher changing occupation of teaching to the occupation of politics or a tractor changing an occupation from cultivating to transportation of goods or people or a piece of land used for farming changed to the use of playing ground.

Types of occupational mobility

Occupational mobility may be divided into:

- *Horizontal mobility*: This refers to the mobility of labour from one firm to another firm for the same occupation but where there is a better pay. For example, a teacher moving from Makongo High school to Midlands High School for the same job of teaching because of a better salary and working conditions. Or a lecturer shifting from University of Dar es Salaam in Tanzania to Kenyatta University in Kenya for the same job but due to better pay (*Greener pasture*).
- *Vertical mobility*: This is the mobility of labour within the same occupation from a junior position to a senior position. For example from a normal teacher to a head of school, medical assistant to a medical officer, from an assistant lecture to a full lecturer or from an evangelist to a pastor in the church.

Geographical mobility

This is the movement of a factor of production from one place to another place. In geographical sense labour is the most mobile factor of production. While land is the most immobile factor of production in the geographical sense because it can not be moved from one area to another area. However land is very mobile in occupational sense because it can easily be changed from one form of use to another form of use.

Significance of Mobility of Labour

Mobility of labour has a great economic importance:

- If labour was perfectly mobile there would be no frictional unemployment which results from technological changes or changes in demand. Frictional unemployment occurs because labour cannot move from a declining industry to an expanding industry. Labour is not perfectly mobile due to several reasons such as lack of training, too much specialization, social ties, health reasons, age, etc.
- Factor mobility avoids wastage since factors of production are able to move from place to place and occupation to occupation for effective utilization.
- Labourers mobility increases the level of availability of labour in the economy.
- Labourers gain more skills when they move from one job to another job.
- Policy makers can look into causes of lack of mobility in order to solve unemployment problem. One of the remedies of structural unemployment due to technological changes would be to train labour with a new technology so that when a new technology is introduced in an industry labour can easily adapt to it and get employment or get rid of structural unemployment.
- Lack of mobility of labour can affect production for example when labour fails to move from one place to another place or from one industry to another industry it leads to a shortage of labour in an expanding industry consequently a fall in production.

Barriers to the Mobility of Labour

Mobility of labour is hindered by the following factors:

- *Cost of moving from one geographical area to another:* When the cost of moving from one geographical area to another is too high due to great distance between the areas then mobility of labour will be low or totally discouraged.
- *Social barriers:* For some social reasons such as religious, ethnicity, age, family or clan ties labourers might hesitate to move from where they are currently working to new working places.
- *Length of apprenticeship*: When labour is required to undergo some on-job training for a long period of time, it will discourage labour to move to another area.
- *Lack of required training:* If labour lacks specific type of training needed in an expanding industry it can fail to move to that industry.
- *Political barriers*: For some political reasons labour can fail to move from one area to another area. For example in a strictly socialist system labour are not free to move from one area to another area or to change occupation without the permission of the government.

Specific and Non-Specific Factors of Production

Specific factor of production

A factor of production is said to be specific if it is used for only one form of employment, that is, if it can be employed in only one occupation. For example some kinds of capital like roads and railways are very specific because they are used only for transportation purposes. Also highly skilled labour tends to be specific. For example a doctor (specialist) tends to be specific in his/her occupation or area of specialization. It is not easy for a doctor to move to other jobs.

Non-specific factor of production

A factor of production is said to be non specific if it can easily change from one form of use to another or from one occupation to another. For example, most of unskilled labourers are non-specific since they easily change from one form of employment to another. For instance unskilled labourer can work as a shoe shiner, cleaner, dock-worker, brick-maker, etc. Also some kinds of capital tend to be non-specific, for example, a tractor can change from one use to another use like wise land is non-specific because it can be used for more than one use, for example, it can be used as a farmland, construction site, grazing animals, a zoo, etc.

☞**Note:** All non-specific factors are mobile factors and all specific factors are immobile in the occupational sense.

Problems of classifying factors of production

The problems of classifying factors of production are:

- It is difficult to classify some economic resources into one category of factor of production. For example, to classify natural resources like minerals into either capital or land because minerals are natural resources and therefore can be classified under land but most of the minerals are in the form of raw materials. So they can be used directly in the production process hence be classified as capital or sometimes minerals can be used directly as finished goods so they are neither classified as land nor capital.
- Substitutability among the factors of production, that is, one factor of production doing functions of another factor of production. For example, an entrepreneur (the owner of a business) can sometimes perform functions of labour, for instance the owner of the school can sometimes teach like other teachers. The owner of a bar may sometimes sell beer to the customers. Likewise some types of capital (computers and robots) perform functions which are being done by labour so it is difficult to classify such factors of production into either labour or capital.

Production Function

This is a mathematical and technical relationship between output produced and the factor of production used to produce the output.

A production function shows maximum amount of output produced by certain amounts of factors of production given the existing technology or state of art. Production function can be expressed in three forms:

(i) Form of a chart/table
(ii)Form of a graph
(iii)Form of equation

Form of a table/chart

Table 2.2 Form of a Chart/Table

UNITS OF CAPITAL	UNITS OF LABOUR	OUTPUT
1	1	10
1	2	20
1	3	30
1	4	40

Graphical Form

From the chart above you can draw a graph to show the relationship between output and input. Outputs is represented in the vertical axis while input is represented in the horizontal axis.

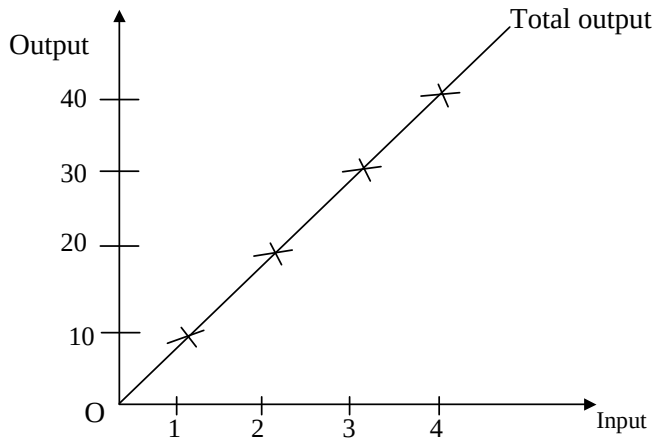


Figure: 2.4 Relationship between output and input

In figure 2.4, above an increase in the units of output lead to more units of output produced.

Form of Equation

For example:
Q = Output f (L_1K)
Whereby;
F = Function of (depends on)
L = Labour units
K = Capital units

Example of a production function in equation form

Q = 2L + 5
From the above function, we can get amount of output if we assume certain units of labour.

Table 2.3 Values of output extracted from production function.

LABOUR UNITS	OUTPUT
0	5
1	7
2	9
3	11
4	13
5	15

Factors Determining a Production Function

A production function is determined by the following factors:

- *Quantity of resources available (used):* The larger the amount of input used in the production process, the larger the amount of output will be produced.

- *State of technology*: Technology improves efficiency of work and leads to high output.
- *The size of the firm*: Large firms have the ability to produce large amount of output due to large amount of resources and the use of advanced technology while small firms may not produce large amount of output due to limited resources and technology.
- *Price of factors of production*: Price of factors of production determines the choice of factors of production. W prices of factors of production are relatively low producers will employ more units of input which will increase output.
- *Political and social stability*: A stable political and social situation in a country provides a conducive environment for growth of economic activities and investment, and therefore leads to the increase in output.
- *Infrastructural facilities:* Lubricants of economic activities or infrastructures such as transport, communication, electricity, water supply facilities, banking, insurance, etc enhances the growth of various economic sectors such as industry, agriculture, tourism and trade.

Total product, average product and marginal product of Labour.

Total product of labour: This is the maximum amount of output produced by certain amount of input.

Table. 2.4 Total and average product

Units of capital	Units of labour	Total product	Average product
1	1	10	10
1	2	20	10
1	3	30	10
1	4	40	10
1	5	50	10
1	6	60	10
1	7	70	10
1	8	80	10

Average product (AP)

This is the output per unit of labour.

Where AP = Average Product.

TP = Total Product.

QL = Quantity of Labour.

Marginal Product (MP)

This is the additional product resulting from one more unit of input employed.

$$MP = \frac{\text{Change in TP}}{\text{Change in QL}} \text{ or } \frac{TP_2 - TP_1}{L_2 - L_1}$$

Table 2.5 Marginal product

Capital	Labour	Total Product	Average Product	Marginal Product
1	1	10	10	-
1	2	24	12	14
1	3	42	14	18
1	4	56	14	14
1	5	65	13	9
1	6	72	12	7
1	7	77	11	5
1	8	80	10	3
1	9	81	9	1
1	10	81	8.1	0

Marginal product of labour and diminishing returns.

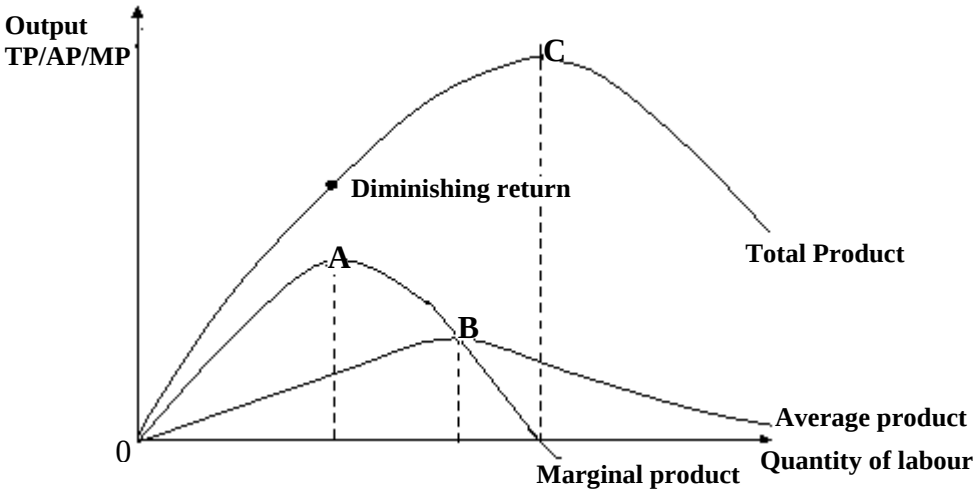


Figure: 2.5 Diminishing returns

In figure 2.5 above, diminishing returns start at point A.

In figure 2.5 the relationship between total product, marginal product and average product is as follows:-

- When total product is increasing at increasing rate at labour unit OL1 marginal product and average product are also increasing.
- When total product starts to increase at decreasing rate at point A marginal product is at maximum (a point where diminishing return starts)
- When total product is at maximum at point B marginal product = 0
- When total product is declining marginal product is negative
- When average product is rising it is below marginal product. When it is declining it is above marginal product. When it is at maximum it is equal to marginal product.

Law of Diminishing Returns or Law of Diminishing Marginal Productivity or Law of Variable Proportions

This law states that. *If equal amounts of one variable input for example labour are added in a production process while all other inputs for example capital and land are kept fixed/constant, total product, marginal product and average product will initially increase but after some points (time) they will start decreasing.*

This law starts to operate when marginal product is at maximum. In our previous example the law of diminishing returns starts to operate at three units of input.

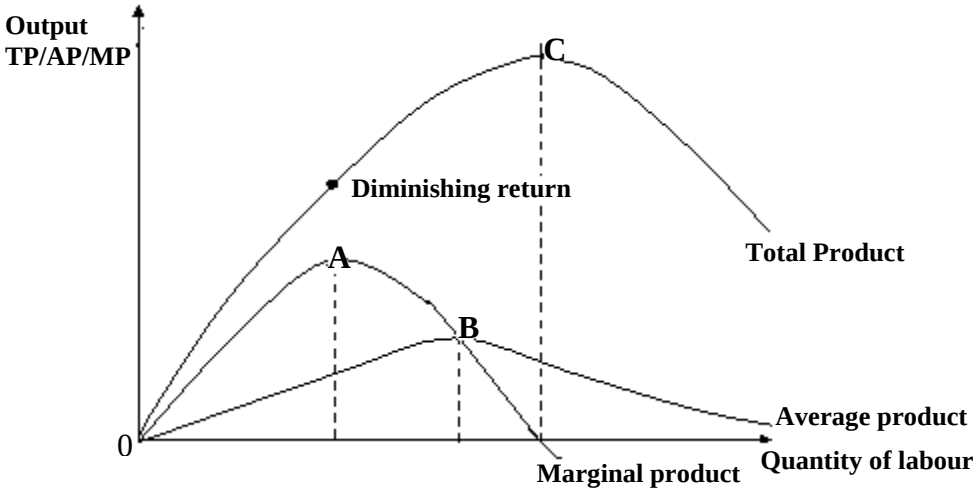


Figure: 2.6 Law of diminishing returns

In figure 2.6 the law of diminishing returns starts to operate at point *A* or at a *dot* where marginal product is at maximum. At this point total product increases at a decreasing rate. Also average product starts to diminish at point *B.* At point *C* total product starts to fall and the marginal product is zero (0). Diminishing return occurs due to the fact that one of the inputs is fixed and it applies more in the short run than in the long run because in the short run some inputs are fixed while in the long run all factors of production can be increased.

Assumptions of the Law of Diminishing Returns

- It assumes that there are both fixed and variable factors of production, therefore, a short run period.
- It assumes that the technology used is constant so that output of labour depends on the existing level of technology.
- All units of the variable factor are homogeneous, it means they are identical and they have equal importance.
- Variable factors are perfectly divisible and easy to combine with a fixed factor.

Limitations of the Law of Diminishing Returns

- It does not apply when the methods and techniques of production are improved. For example, productivity of land may increase due to improvement in the methods of agriculture used even if the size of the land is kept constant. This means that it is

not always that production keeps on diminishing over time; sometimes there can be series of rise and fall in production due to the above identified reasons.

- This law applies only in the short run in which one of the inputs is fixed but in the long run this law cannot apply because all the factors are variable. Nonetheless, even in the short run the factor can be variable for example adverse changes in climate, may affect land productivity.
- It is restricted to land only while, in reality, it can apply even to other factors of production when they are fixed in supply.
- In case of a virgin land/soil this law can not apply because a virgin land or soil can be very productive for a very long period of time without adding other inputs like fertilizers. For example in different parts of Morogoro in Tanzania people have been cultivating maize but rice without applying fertilizer and the production has not been diminishing.
- The law does not consider the influence of other factors which can lead to the decline (diminishing) in output like poor health of the labour (manpower), mismanagement etc.

Regions or stages of production

The concept of diminishing returns can be used to indicate stages of production. There are three stages of production, namely first stage, second stage and third stage.

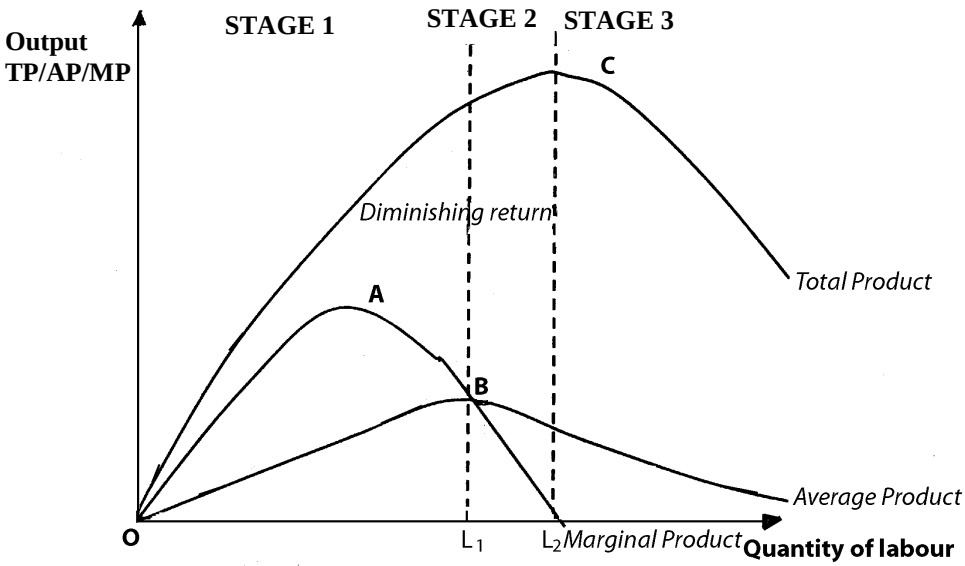


Figure: 2.7 Stages of production.

Stages of production in figure 2.7 above are explained as follows.

Stage1:

This stage starts from 0 to 0L1 units of labour where total product is increasing at increasing rate, average product is also increasing, marginal product also increases, reaches maximum and then declines. Marginal product is above average product.

It is not the best stage of production because output is not at maximum. That is, a firm may still get more revenue by increasing output.

Stage 2:

This stage lies between 0L1 and 0L2. At this stage, total product is increasing at decreasing rate. Marginal product is declining, average product is declining, marginal product is below average product, however, this is the best stage of production because total product is at maximum.

Stage 3:

It starts from 0L2 and beyond, Total product is declining, marginal product is negative, average product is declining. It is not an ideal stage of production because at this stage the average cost is rising and if the price of output remains the same then the firm might incur loss.

Laws of Returns to Scale

Laws of returns show the proportionate change in output due to a proportionate change in units of input. There are three laws of returns.

- *Increasing returns to scale:* This occurs when a proportionate increase in inputs brings a larger than proportionate increase in output. For example, when a double increase in inputs results into a quadruple increase in output.
- *Constant returns to scale:* This occurs when an increase in input causes an equally proportionate increase in output. For example if output is doubled due to a double increase in input.
- *Decreasing returns to scale:* This happens when an increase in input brings a less proportionate increase in output. For example when input is tripled output is only doubled.

Table 2.6 Laws of returns given marginal product

Units of labour	**Units of land**	**Total product**	**Marginal product**	**Returns to scale**
1	1	3	-	Increase returns
2	1	7	4	
3	1	12	5	
4	1	18	6	
5	1	25	7	Constant returns
6	1	32	7	
7	1	39	7	
8	1	43	3	
9	1	45	2	
10	1	46	1	

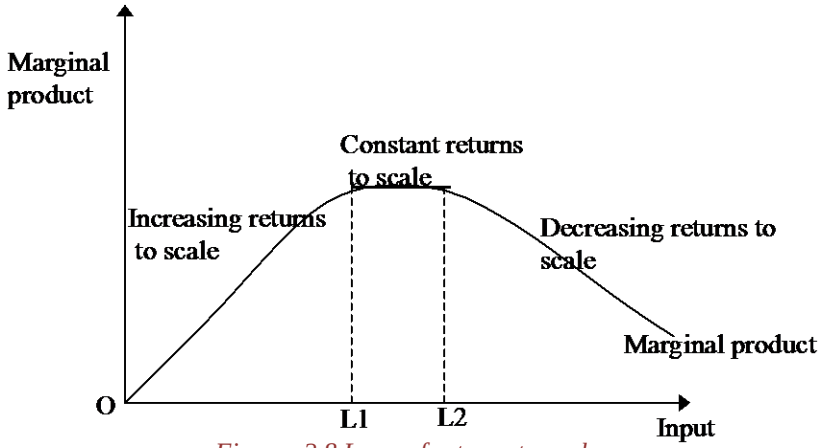


Figure: 2.8 Laws of returns to scale.

In figure 2.8 above $0L_1$ -indicates increasing returns to scale.

L_1L_2 - indicates constant returns to scale.

$0L_2$ - onwards indicates decreasing returns to scale.

Assumptions of the laws of returns

- Technology is technology is assumed to be constant but if technology changes diminishing returns will not occur.
- It applies only in the short run in which one factor is fixed.
- It assumes homogeneous factors of production in which factors of production are assumed to be identical in everything.

Techniques of Production

These are the methods, which are adopted in order to produce commodities.There are three techniques of production.

- Labour intensive technique of production.
- Capital intensive technique of production.
- Land intensive technique of production.

Labour intensive technique of production

This is a of production technique whereby more labour is used in the production process than other factors of production.

Advantages and Disadvantages of Labour Intensive

Advantages of Labour Intensive:

- It creates high employment, both skilled and non-skilled.
- It leads to fair income distribution in the society.
- It reduces unemployment problem.
- It reduces costs of production as labour especially in less developing countries is cheap.
- It widens the tax base.
- It reduces importation of capital.
- It is cheaper to develop and most affordable to less developing countries.

Disadvantages of Labour Intensive
- Low quality of output may be produced.
- It may discourage development of labour skills.
- It deters technological developments.
- Labour may demand higher wages and benefits which would increase cost of production.

Capital Intensive Technique of Production
This is a technique of production whereby more units of capital is used in production process than units of labour.

Advantages of Capital Intensive
Capital intensive technique has the following advantages:
- It leads to increase in output and quality.
- Employment opportunities may arise due to economies of scale.
- It maximizes the use of resources.
- It reduces labour unrest.
- Less supervision is needed.
- It encourages technological development.
- It reduces cost of production where labour is expensive.

Disadvantage of Capital Intensive
- It reduces demand for labour hence it may cause unemployment.
- It may be very expensive to operate and purchase.
- Maintenance of capital sometimes is costly.
- It may lead to problem of marketing due to the resulting large output.

Land Intensive Technique of Production
This is technique of production whereby more units of land is used in the production process than units of other factors of production.
Demand for a factor of production. This is the ability and willingness of employers to employ factors of production at the going market factor price at specific period of time. The demand for any factor of production is a derived demand, that is, the services of factors are demanded not for any utility directly yielded to them, but only because they are necessary as inputs to produce output of goods and services for sale at a profit in the goods market.

Factors which determine the demand for factors of production
Demand for factors of production is determined by the following factors:
- For a firm with the main aim of profit maximizing there can be no demand for factor services in the long run unless the firm sells the output produced for at least a normal profit in the goods market.
- The firm's demand for a factor will also depend on the contribution of a factor to total product and whether the additional product will lead to a rise in total revenue.
- The cost implication of employing an additional factor will determine the demand for such a factor. If an additional worker will result to more cost the demand for such a worker will fall.

Factors which determine the choice of technique of production

Choice of technique factors of production depends upon the following factors:

- *Price of a factor:* Assuming other factors remains constant (*ceteris paribus*). When a certain factor of production is sold at a lower price, producers will use more units of that factor of production, where as if it is sold at a higher price, producers will use less units of that factor of production.
- *Efficiency of a Factor:* Producers will choose the factor of production/ technique of production, which is more efficient than other factors or techniques of production. For example, if producing by using capital creates more efficiency than by using labour then producers will adopt capital intensive technique of production.
- *Degree of Substitutability of a Factor of Production:* When a certain factor of production can not be substituted with other factors of production, producers will have to use more units of that factor. For example a highly specialized medical doctor can not be substituted with other factors. In this case entrepreneur will have to use more units of the specialist than other factors. On the other hand, some factors of production can be easily substituted with other factors in some kinds of jobs such as digging, cleanliness and construction. In this case producers can use/choose to use any type of a factor.
- *Government policy:* Government policy can also affect choice of technique of production, for example, if a policy of the government is to promote technological advancement, the government will insist on the use of capital intensive technique of production while if the policy is to create employment to the people the government will insist on labour intensive technique of production.

Scale of Production

This refers to the quantity produced (volume of goods produced) and the technique used in production. If greater quantity of a commodity is produced then the scale of production is said to be large, while if smaller quantity of commodity is produced then the scale of production is said to be small.

The scale of production depends upon the following factors:

- *Availability of capital and labour*: If capital and labour are available in large quantity then they facilitate the increase in the scale of production while if capital and labour are available in a small quantity then production becomes low leading to the small scale of production.
- *Size of the market*: If the size of the market is large it will stimulate more production and the scale of production will increase, but if the size of the market is small it discourages production and consequently the scale of production will be small.
- *Technological levels*: Advanced technology enables large-scale production to take place while poor technology limits the size of production. It is possible to increase production by using advanced technology than by using poor technology.
- *Availability of infrastructures*: Availability of efficient and effective infrastructure like transport and communication network stimulates production activities and facilitates the transferring (ferrying) of goods from areas where they are produced to areas where they are needed for consumption.

In this case availability of infrastructure enables large-scale production to take place while lack of infrastructure discourages production hence scale of production becomes small.

Types of Scale of Production

Scale of production can be divided into two parts.
(i) Large scale production
(ii)Small scale production

Large scale production

This is a scale of production in which large output is produced since the input used in the production process is also large.

Advantages (merits) of large scale of production

Ability to minimize cost and maximize profit: A large scale firm is able to minimize cost and maximize profit by:

- Buying input in a large quantity at a discount price.
- Employing efficient technology.
- Producing in large quantity.
- Providing incentives to workers.

Ease to raise capital: Large scale firms are able to raise capital from the financial institutions because they have securities (assets) which help them to borrow money. Likewise they have the ability to raise more capital by selling shares of ownership to the public.

Expansion of market for its products: A large-scale firm has the ability to expand the market for its products by using its resources capacity to:

- Advertise the products.
- Carry out market research.
- Carry out sales promotions.

These marketing strategies may help to expand the size of the market.

A large firm can produce a variety of goods: As a safeguard against a fall in demand for one of the goods a large scale firm is able to produce varieties of goods to minimize the risk of loss.

Ability to increase efficiency of production: Due to its ability to employ advanced technology and skilled labour a large scale firm is able to increase efficiency of production.

Large possibilities of division of labour/specialization: Because of the large number of workers and facilities, division of labour is possible under large scale production. Division of labour leads to efficiency of labour.

Disadvantages (Demerits) of Large Scale Production

Large scale production has the following disadvantages:

- *It involves large cost of administration and supervision:* When a firm expands its size it must increase the size of manpower and the number of sections or departments, this increases cost of administration and supervision.
- *It is very difficult to make decisions (bureaucratic decisions):* In a large-scale production decision making involves a large number of people in which it may be

very difficult to reach agreements. Also decision making in a large scale firm is very bureaucratic, that is, it involves so many procedures/stages before being made, hence leading to delay in making decisions and implementation.

- *It needs large initial capital outlay:* A large scale firm demands a large amount of capital in order to start production. Large amount of capital is needed to buy physical capital such as machinery, raw materials, means of communication and also to employ skilled and unskilled labour.
- *Problem of market*: A large scale firm may face a problem of market for its products if the size of demand for its products is smaller as compared to the output produced by the firm. In such a case a firm will incur loss.
- *Managers have no self interest:* In large-scale firm salaried managers are less interested in the prosperity of the firm since they are not benefited directly by the profit generated by the firm. This results into the fall in their efficiency of work.

Small Scale Production

This refers to the kind of production in which the quantity of output produced and the resources employed are small.

Advantages (Merits) of Small-Scale Production

Small scale production has the following advantages:

- *Small initial capital* - small scale firms do not need large amount of resources to start production.
- *Easy to control* - small-scale firm is easy to control because they have smaller number of activities, simple techniques of production, small amount of output and small number of labour force.
- *Quick decision making process* - In a small scale firm decision making process is so flexible and ease because it involves a single person. As a result decisions are made in a short period of time.
- *Personal contacts with the customers* - In small-scale firms the owner can give personal attention to his/her customers and meet their personal preferences. This helps to build a friendly relationship (rapport) between customers and the firm.
- *Low operating and administrative costs* - small-scale firms incurs less operating and administrative costs because of the small number of functions, sections and manpower.
- *High commitment of the owners of the business* - owners of small-scale firms are highly motivated and committed since they appropriate the whole profit.

Disadvantages of Small Scale Production

Small scale production has the following disadvantages:

- *Limited possibilities of expansion* - A small-scale firm can not expand into a larger size because of small amount of capital and profit as a result it becomes very difficult to expand.
- *Large average cost* - the cost per unit of output in a scale firm is large because of the small amount of output, which is produced by the small-scale firm. Since when the output produced is small the average cost becomes high.
- *Uncertainty of continuity* - A small scale firm has a possibility of declining (in risk of declining) because of several reasons such as:

- High average cost.
- Small amount of capital.
- Death of the owner etc.

- *Limited division of labour* - In small scale firm, division of labour is very difficult because of the small number of labour force and limited number of processes. This affects efficiency of work.
- *A small-scale firm cannot produce variety of goods* - due to limited capital a small scale firm cannot produce variety of goods therefore the risk of loss due to the fall in the demand for the product is so high.
- *Difficulty to win the market for its product* - In a situation where there is high competition a small scale firm has small chances of winning the market because of lack of the required resources to market their products. For example, a small scale firm cannot advertise its products or make sales promotion as large firms do.
- *Inefficient production* - sometimes production in a small scale firm is inefficient because of their inability to employ advanced technology and skilled labour.

Economies of Scale

These are advantages, which are obtained by a firm when it expands its size of production. There are two types of economies of scale.

(a) Internal Economies of scale.
(b) External economies of scale.

Internal Economies of Scale

These are the advantages obtained by a single firm, when it expands the size of production. The following are the internal economies of scale:

- *Financial economies*: When a firm expands its size of production it becomes possible for the firm to obtain financial assistance from banks at a lower rate of interest because its assets may act as securities for securing the loans. Also when the firm expands the size of production, it can increase capital (Its financial position) by selling shares to the public.
- *Marketing economies*: When a firm expands production it can acquire necessary resources for marketing its products through advertising. The unit cost of marketing large output is smaller than of smaller output. For example, if it costs Tshs.40,000 to advertise soda products on a television for two minutes, a firm which produces 30 crates per day will pay the same advertisement cost as a firm which produces 60crates per day. Likewise, the unit cost of distributing to the markets large output is much smaller than that of smaller output. For example the fare cost or fuel cost of transporting 40tons by a car is similar to the cost of transporting 5tons only.
- *Economies in buying of input at cheaper price:* When a firm expands its production it can have the ability to buy inputs. For example, raw materials in a large quantity/bulk at a discount.
- *Economies in decreasing average cost*: When the firm increases output the average cost that is the cost per unit of output tends to decrease.
- *Technical economies*: When a firm expands, it can expand its machinery capacity. In this case a firm can produce large amount of output without necessarily incurring additional cost. For example the cost of paying an operator who operates a machine which can produce 20000 units of a commodity per day can be the same to that of

an operator who operates a machine with the production capacity of only 5000 units per day. Also larger machinery permits

specialization of workers enabling them to gain skills, avoid time wasting interchanging of locations and equipment these will lead to the reductions of unit costs and increase in output.

- *Economies in administration*: There is economy of administration since an increase in output do not necessarily lead to increase in number of office staff. The large firm too can still utilize the existing office machinery and therefore incur almost the same administration cost.
- *Research economies*: An expanding firm can easily make research on modern technological advancements this enables the firm to improve output and to reduce unit cost.
- *Economies in the use of factors of production:* There can be economies in the use of factors of production since to increase output by a certain amount may not necessarily require employment of extra input by the same proportion. For example, a farmer can double output by applying better methods of cultivation and modified seeds without increasing acres of land and more labour force. Also greater division of labour and specialization are possible.
- *Economies of specialization and division of labour*: An expanding firm has a large possibility of specialization and division of labour, which leads to the increase in output and fall in the cost of production per unit.
- *Price reduction economies*: A large firm can spread risks or eliminate them by producing varieties of products that will help a firm to sustain in case the demand for one product falls.
- *Managerial economies*: An expanding firm can reduce managerial cost by establishing autonomous departments or by grouping a number of departments under one management in which the cost of management expand even when the size of the firm is enlarged.
- *Storage economies*: Storage cost per unit output declines when final products or raw materials are stored in a large quantity because the cost of rent of large quantity is the same as that of a small quantity. For example, if a firm has stored in a go down a thousand sacks of crop the rent will be the same as that of only twenty sacks stored in the same drinks.
- *Transport economies*: When commodities are transported in bulk the costs of transport per unit is lower than when the quantity is small. For example, the cost of transporting five hundreds crates of *coca cola* drinks per trip is the same as that of transporting fifty crates of the same type of drink.

External Economies of Scale

These are economies which are obtained by all the firms in a particular industry due to localization (*agglomeration*), that is, concentration of many firms in one area.

External economies of scale are shared by many firms when the scale of production of one firm or all the firms expands. The following are the external economies of scale:

- *Infrastructural facilities*: When firms are concentrated in a certain area it can lead to the development of infrastructures such as roads and communication network, as a result all the firms in that area will benefit from.

- *Availability of factors of production*: When firms have concentrated in a certain area, it may be easy for the firms to supply each other some inputs such as labour and components of some machine and raw materials.
- *Decrease in the cost of production*: The costs of production like transport costs and wages may be reduced when many firms operate in a given area, for example, when there is improvement of road transportation all the firms will benefit and the cost of transportation will decrease. Also mobility of labour increases in the area resulting to the fall in wages.
- *Regional division of labour*: When an industry is localized in a certain area, it is possible for each firm to specialize in a certain process of production hence enjoy economies of scale by selling its products to other neighbouring firms. For example, if a textile industry is localized firms in that industry can specialize in particular processes as follows:
  FIRM A - Production of threads.
  FIRM B - Weaving of threads.
  FIRM C - Designing of clothes.
  FIRM D - Production of clothes.

Each firm above may enjoy advantages of division of labour in the sense that there will be:

- Increase in output.
- Increase in efficiency.
- Saving of time between processes.
- Increase in skills of the workers.
- *Government assistance*: Firms which have been localized in a certain area can enjoy various assistance which can be provided by the government. For example, tax relief, subsidies, protection through import control, infrastructure such as electricity, water supply systems, roads etc.
- *Economies of information:* In a large industry it is possible for specialist firms to undertake research and provide information from which all firms may benefit.
- *Technological economies of scale*
  When an industry expands it may lead to discovery of technology which would increase productivity of labour and therefore reduce average cost of production.
- *Growth of subsidiary and correlated industries.*
  Due to growth of industries, subsidiary and correlated industries may grow. These may specialize in the production of raw materials, tools and machinery hence provide them at lower prices to the main industry.

Diseconomies of Scale

These are the disadvantages that a firm/firms experience whenever they expanding the scale of production. When a firm grows bigger, it experiences several problems known as diseconomies of scale. These diseconomies of scale are as follows:

- *Increase in cost:* When a firm expands, there are various costs, which increase such as; the increase in costs of distributing the large amount of output it produces, increase in costs of operation and administration, increase in amount of money for wages of the additional staff, increase in the cost of marketing its of output through

advertising, market research and sales promotion and increase in the costs of buying input due to the increase in their demand.

- *Difficulty in controlling production*: As a firm expands it produces large amount of output which may be difficult to be controlled by the management, this may lead to wastage of some resources in the production process, theft, lower availability of goods produced, overproduction etc.
- *Difficulty in management and control of labour:* As a firm becomes bigger it employs more workers who become very difficult to control and also need additional supervisors hence increase the wage cost.
- *Marketing diseconomies:* As a firm expands it produces large amount of output which may bring problems in finding market. In such a case the firm may be forced to use a lot of its resources to market the products. The resources will be used in advertisement, sales promotion, market research, distribution facilities etc.
- *Financial diseconomies*: As a firm expands it needs additional funding (working capital) which may not be readily available and therefore force a firm to borrow from financial institutions, this will increase the burden of debt in terms of interest rate.
- *Technical diseconomies*: Expanding the size of the firm may mean employing an advanced or sophisticated technology, which may be very expensive to buy and to operate. Also after a certain time the machines will undergo wear and tear and thus increase the cost of maintenance.
- *Diseconomies of division of labour*: The increase in the size of the firm necessitates the need of division of labour and specialization which may lead to increase in costs of paying specialists who are employed in different areas of specialization or processes.
- *Diseconomies of standardized products:* As a firm expands it tends to produce highly standardized products, which cannot cater for the individuals' tastes and preferences. This forces a firm to use a lot of resources in advertisement so as to try persuading the consumers to buy the product.
- *Diseconomies of bureaucratic decision making*: A large scale firm tends to be bureaucratic in decision making because of the complexity of the nature of the management, large number of decision makers, large number of departments and a lot of procedures which should be followed. This affects a firm in a number of ways such as delay in decision-making, failing to adapt quickly to changing demand and supply conditions and monetary costs of holding meetings such as buying some stationery and allowances paid to managers whenever they meet in a number of meetings for the sake of making decisions.

Survival of Small Scale Firms

Why does small scale firms survive alongside large scale firms. For example, why does mama ntilie in urban areas survive and flourish while there are big hotels. Small scale firms survive alongside large scale firms due to the following reasons:-

- *Small initial and running capital:* Unlike large-scale firms small-scale firms need small capital to start business and carry various operations, therefore, they have a large possibility of surviving even with small capital.
- *Some small-scale firms supply inputs to large-scale firms:* In some cases small-scale firms may supply inputs such as raw materials to large-scale firms. This

situation creates interdependence between small-scale firms and large-scale firms and enables the small-scale firms to survive. For example, the Kilombero Sugar Company is an example of a large firm owning the sugar cane estate, but still there are small-scale peasants (out growers) who grow sugar cane on small scale and supply to the company. Also small scale dairy farmers who produce milk in their dairy farms and sell the milk to a big dairy companies. For example, Tommy dairy in Dar es Salaam apart from the milk products from its own farms, it also buys from the small scale dairy farmers.

- *Small extent of the market:* Where the size of the market is small the small-scale firms are likely to benefit more than a large-scale firm because the small scale firm produce smaller units of outputs than a large scale firm. Also small amount of output produced by a small-scale firm are very easy to dispose off than large output.
- *Direct contact with the customers:* A manager in a small-scale firm has direct contact with his/her customers, which enables him/her to know individual's tastes and preferences of the customers. This increases customers' confidence unlike in a large scale firms where managers do not have a chance to have a direct contact with their customers, therefore they fail to cater for individual's tastes and preferences of the customers.
- *simplicity in techniques of production small labour force, capital resource*. Some activities by their do not need production by a large firm. For example, shoe shining and repairing, tailoring, hair dressing firm, etc.
- *Special government protection policies:* The government may have purposeful policies to protect and promote small scale firms either for economic or political interests, for example, in Dar es salaam region in Tanzania the Government has been helping the Small scale traders like the street hawkers (*machingas*) by establishing selling centres like in Kijitonyama, Makumbusho, Temeke stereo, Mchikichini, around the Karume stadium and Urafiki where well constructed structure have been built to accommodate small scale traders. Also the government may have special policies of providing loans to small scale firms for example in Kenya the government assists the *Jua kali industry*, the small scale tea growers and in Tanzania the government has special fund like the Tanzania Social Action Fund to help small scale business as well as the industrial policy which encourages development of small industries that is *SIDO*. In Uganda the government assists Special Women Group who exports textile products.
- *Ease management:* Small scale firms are easier to manage than large scale firms due to the small amount of resources employed, a small firm has small number of labour force and working capital, which enables the firm to have a simple combination of inputs that simplifies controlling of the production process and the resulting output.
- *Small scale firms are less bureaucratic than large scale firms:* Small scale firms are less bureaucratic in decision making concerning economic questions such as deciding what to produce, how to produce, for whom to produce etc. This enables the firms to adapt quickly to the existing demand and supply conditions unlike large scale firms which are more bureaucratic in decision making due to large number of:
  - Decision makers.
  - Departments.

- Procedures.
- Paperwork and low commitment of salaried managers.

Constraints or Limits for Expansion of Firms

The limits for expansion of firms are as follows:

- *Extent of the market:* The scale of production largely depends on the size of the market, large scale production can not be carried unless there is enough market for the large output that will be produced; therefore the size of the market is crucial for any expansion of a firm.
- *Individuality versus standardization:* Large output means standardization of the product and less production of varieties of products. Since consumers prefer varieties of choices, standardized products cannot satisfy individual preferences of each consumer.
- *Increasing cost and complexity of the organization:* As a firm expands it is forced to increase the number of departments, personnel, premises, marketing activities, administrative functions and factors of production. Such expansions would imply increase in the cost of production and complexity in the management of the firm which would need employment of very efficient managers who may be difficult to find since the supply of efficient managers is scarce. In this case, the expansion of the firm is restrained.
- *Falling in price:* When a firm expands, it produces large output which may be possible to sell only when demand also increases. if demand is constant then the firm will be forced to decrease the price of the commodity at the expense of profit.

Localization of Industry

This is the concentration of many industries in one area. For example fish industries in Mwanza Tanzania, Pugu industrial area, Ubungo and Mikocheni in Dar Salaam, Jinja in Uganda, The Rhur in German and the Rand in South Africa.

Factors for Localization of Industry

The factors which affect localization of industries are:

- *Presence of raw materials*: Raw materials may attract the establishment of many industries in one area. For example, in Tanzania, there are many fish canning industries around Lake Victoria because of the large stock of fish in Lake Victoria. Also the availability of cotton in the lake zone attracted the establishment of textile industries such as Mwatex, Musoma tex and so many semi processing textile industries (ginneries) in the area. The cotton belt also attracted the development of textile industries in different towns in the belt in Texas in the U.S.A.
- *Existence of large market*: Many industries tend to concentrate in areas where market for the final products is large. For example, most of the consumer goods industries are located around big market centres like big towns such as
  Dar es salaam in Tanzania (Dar Breweries, Tommy Dairy, Kibuku, Urafiki, Coca cola Kwanza etc) and Kenya in Nairobi (soap industries) and Mombasa (textile industries).
- *Availability of power*: Power is the major input in the process of production. During the early times, when coal was a major source of power, industries were built in areas where coal was extracted. For example the Rhur industrial conurbation of

German, Pittsburgh in the U.S.A and the Coals fields of Great Britain. Also in Tanzania in Rungwe district Tea industry has been established due to the presence of the Kiwira Coal mine. However, in recent years electricity has replaced coal as a source of power and it has spread in many places especially in towns making it possible for industries to be located in these areas like in Dar es Salaam - Tanzania.

- *Availability of labour*: Industries, which use labour intensive method of production, tend to concentrate in areas where there is availability of a large amount of cheap skilled and unskilled labour.
- *Infrastructure facilities*: Reliable infrastructures such as transport and communication systems facilitate production, distribution and exchange processes and therefore attract the establishment of industries. For example, in the East African countries, many industries have been established in major cities and towns like Mwanza, Dar es salaam, Nairobi, Jinja and Kampala because of the presence of good infrastructure like roads, ports, telecommunication networks etc.
- *Financial facilities*: Industries need banks for securing working capital in terms of loans, transferring of funds, depositing money, paying their suppliers of input, receiving money from the customers and other financial services; due to this fact many industries are located in places where there are financial institutions.
- *Administrative centers*: For security reasons and government assistance industries tend to be established in areas where the government has established its administrative centers.

Advantages of Localization of Industry

Localization of industries has the following advantages (merits):

- *Development of infrastructure*: In areas where many industries have been established infrastructure such as roads, electricity supply systems and communication networks are also developed.
- *Research development*: Firms may carry out joint research on a least cost method of production and develop a technology that can improve production.
- *Development of financial and marketing activities*: Concentration of many firms in one area may stimulate development of financial institutions like banks and growth of organized marketing activities. These banks in turn provide credit facilities, means of payments, safekeeping of financial assets to the industries and the community at large.
- *Social services development*: Localization of industries may lead to the establishment of social services like schools, hospitals etc within the areas and thus benefiting both workers of the industries and the surrounding members of the community. Employees by getting these services become more efficient and effective.
- *Development of towns and expansion of market size*: Localization leads to the development of towns and cities and human settlements. These expand the market for the products of the industries.
- *Availability of labour*: Localization attracts labour and leads to the increase in the efficiency in production and increase in output. The labour supply also becomes reliable because of the resulting labour migration to the area from other areas.
- *Regional division of labour:* Localization enables regional division of labour among firms in an industry, firms may specialize in different processes of production of the

commodity and enjoy economies of scale, for example, in a textile industry firms A, B, C and D can specialize in production of threads, weaving, designing and production of clothes respectively and therefore enjoy advantages of division of labour.

Disadvantages of Localization

Localization has the following disadvantages:

- *Massive unemployment*: Localization subjects an area in which industries are localized to mass unemployment when industries operating in that area collapse due to economic changes such as fall in demand and technological changes.
- *Congestion*: Localization leads to an increase in population settlement, congestion in public services such as roads, hospitals, schools, water supply these often leads to poor standard of living.
- *Environmental and social problems:* Localization normally is not planned by the central government hence it some environmental degradation such as air pollution (through emission of gases, some of which are poisonous), water pollution, soil pollution, and noise pollution emanating from vehicles and industries. Likewise, localization of industries can lead to population explosion in an area which in turn can lead to the occurrence of social problems like diseases, prostitution, crimes etc.
- *Regional economic imbalances*: Localization precipitates imbalances in economic development among regions in the country. Regions where industries have been localized will become more developed than the regions which lack industries. For example in Tanzania Dar es salaam is more developed than many regions like Kigoma, Rukwa, Mtwara etc because has many industries.
  Even local governments in areas where many industries have been localized have more tax revenue than where there are very few or no industries which may enable them to provide better social services like education, health services, water and electricity.
- *Rural - urban migration:* When industries are localized in a certain area people in other areas where there are no industries like in rural areas migrate to the areas where there are industries (in towns) in search of employment and other means of earning a living like trade. For example in Tanzania people from upcountry regions famously known as *machingas* have migrated to major towns like Dar es salaam for the purpose of securing employment or carrying out small scale business like hawking of clothes and other different home facilities.
- *Decline in economic activities in rural areas*: As a result of the movement of young and energetic people from the rural areas to towns, so as to work in industries, the rural economic activities like agriculture tend to decline due to the shortage of effective and efficient labour force.

TOPIC THREE

THEORIES OF DEMAND AND SUPPLY

Demand is the willingness (desire) and the ability to buy a certain quantity of a commodity at a going price and a specific period of time.

Conditions for Effective Demand

- Willingness to buy.
- Ability to buy.
- Specific price.
- Specific period of time.

Demand is said to be effective if all the above four conditions exist.

Demand Schedule

A demand schedule is a list of various quantities of a commodity bought at various levels of price at specific period of time.

Table 3.1 Example of demand schedule

Price Tshs	**Quantity Kg**
100	10
90	20
80	30
70	40
60	50
50	60
40	70
30	80
20	90
10	100

Demand Curve

This curve, which represents demand schedule graphically. Quantities demanded are plotted on the horizontal axis and their respective prices are plotted on the vertical axis. For example, from the demand schedule above, its demand curve is shown below:

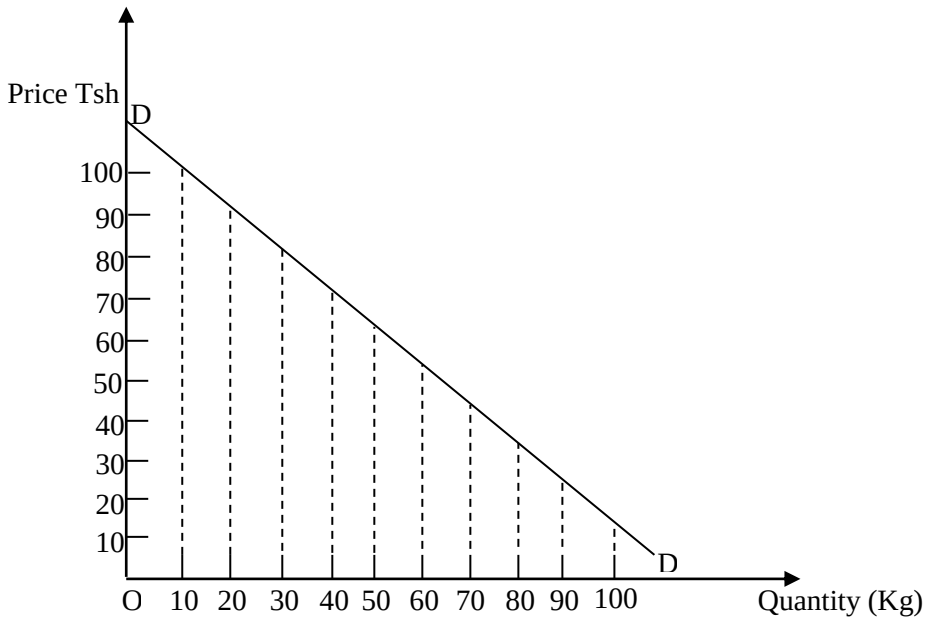


Figure: 3.1 Demand curve

Features of a demand curve

- The demand curves slopes downwards from left to right implying that at higher prices lower quantities will be bought and at lower prices more quantities will be bought.
- It has a negative slope, due to inverse relationship between prices and quantity demanded. That is, when price increases then the quantity demanded decreases and when price is low more quantities are bought.

Why a Demand Curve has a Negative Slope

Demand curve slopes downwards from left to right due to the following factors:

- *The law of diminishing marginal utility:* According to this law as someone consumes more and more units of a commodity, the marginal utility derived from each successful unit added tends to decline. Therefore as the consumers purchase more units of a commodity marginal utility from each additional unit bought tends to decline. Also as the price of a commodity increases the marginal utility of a commodity tends to decline hence decline in demand.
- *Income effect*: As the price of a commodity falls, real income of the consumers increases and consumers can buy more units of the commodity with the same amount of money income. On the other hand an increase in the price of a commodity reduces real income of consumers hence reduces quantity of the commodity demanded.
- *Substitution effect*: As the price of a commodity falls, assuming that prices of substitutes remain constant consumers buy more of it and less of substitutes and vice versa.

- *The price effect*: This is the combination of income and of substitution effect. When the price of a commodity falls consumers buy more of it because of the income and substitution effect and vice versa.
- *Change in number of consumers*: When the price of a commodity decreases the number of consumers increases because even poor people start buying the commodity. When the price increases the number of consumers decreases hence decline in demand.

Individual Demand Schedule

Individual demand schedule is a schedule, which shows various quantities of commodity bought at various ranges (levels) of prices at a specific period of time by a single person in the market. For example Mr. Msabila bought various quantities of sugar at different levels of prices as follows:-

Table 3.2

Price Tsh	**Quantity (kg)**
60	10
50	20
40	30
30	40
20	50
10	60

Individual Demand Curve

This is a curve which represents graphically a demand schedule of a single person in the market. For example, from the above demand schedule of Mr. Msabila, a demand curve is as shown in figure 3.2.

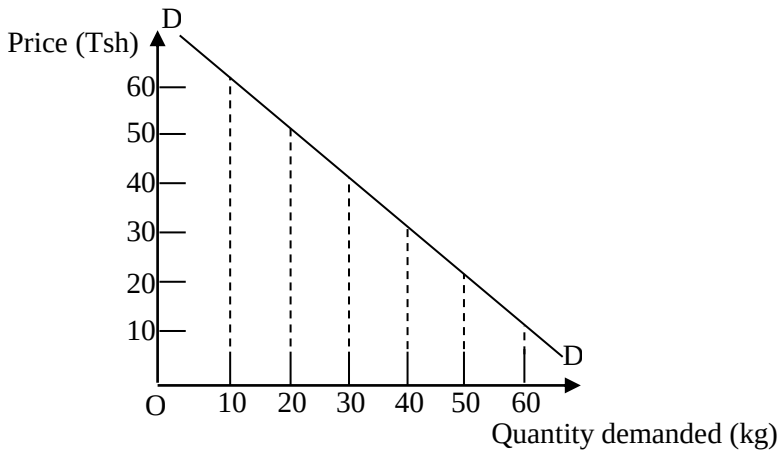


Figure: 3.2 Individual demand curve

Market Demand Schedule

This is a combination of two or more demand schedules of two or more persons in the market. In order to get a market demand schedule, we sum the quantities demanded of two or more persons in the market. For instance, if the following are demand schedules of two individuals in the market Mr. A and Mr. B.

Table 3.3a MR. A

Price (Tsh)	Quantity (kg)
1.75	1
1	3

Table 3.3b MR. B

Price (Tsh)	Quantity (kg)
1.75	2
1	8

Table 3.3c Market Demand Schedule

Price (Tsh)	Quantity (kg)
1.75	3
1	11

Market Demand Curve

This is a horizontal summation of the demand curves of two or more individuals Demand Schedules in the market.

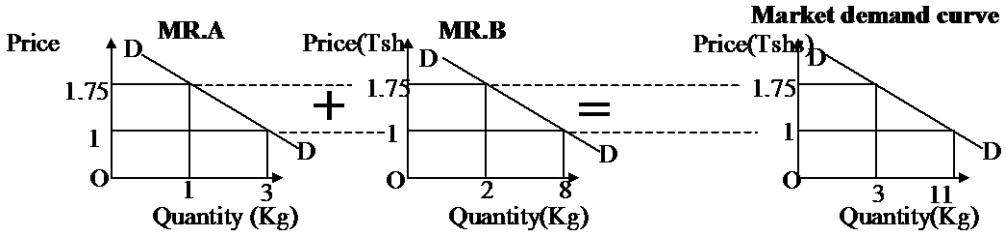


Figure: 3.3a *Figure: 3.3b* *Figure: 3.3c*

Figure 3.3a and 3.3b above show individual demand curve, figure 3.3c above shows market demand curve.

The Law of Demand

The law of demand states that:

Other things remain equal, the amount of products that consumers are willing and able to buy during some period of time changes inversely with the price of those goods (products). It means at a lower price more quantities of a commodity are bought and at a higher price small quantities of a commodity are bought.

Assumptions of the Law of Demand

The law applies only when several factors remain constant. These factors are known as Assumptions of the Law of demand. These assumptions are as follows:

- *Income of consumers:* There should be no change in the income of the consumers when the price of any commodity changes, because only in this case the law of demand will apply. If for example due to rise in price level, income also increases at the same time consumers will not decrease the demand for the commodity so the law will not apply and vice versa.

- *Taste and preference:* There should be no change in the taste and preference by the individual because when taste of any consumer changes demand will not increase in despite the fall in price level.
-. *Price of substitute commodity:* There should be no change in the price of the substitute commodity. If price of any substitute commodity changes, the law of demand will not apply. For example when the price of tea rises and at the same time price of coffee also raises. In that case demand for tea may remain the same.
- *Further expected change in price:* If further change is expected in the price of any commodity the law of demand will not apply. For example if the price of any commodity is expected to fall in future, consumers may not purchase greater quantity of this commodity because they will wait for the further fall in price level.
- *Effect of weather:* If the weather is not favorable for consumption of certain commodity, its demand will not increase even if its price falls. For example during hot weather the demand for sweaters and coats will not increase even if their prices fall.

Exceptions of the Law of Demand

This is a situation whereby more units of a commodity are bought at higher prices than at lower prices and vice versa. Cases of the exception of demand are:

- *Giffen goods (Inferior goods):* These are goods which are regarded by the people to as of low standard. The demand for these goods decreases when income of people increases, so when the price of inferior goods is very low, low income earners would buy less units of inferior goods and buy more of other goods but when the prices of inferior goods rise, low income earners would buy less units of other goods (normal goods) and buy more units of inferior goods. For example if sembe is regarded as an inferior food by Mr. Chamwali while rice is regarded as a normal or superior food. Then, when the price of sembe decreases Mr. Chamwali will not buy more sembe instead He will buy more rice due the income effect whereas, when the price of sembe increases his real income will be low and hence he will buy more units of sembe than rice.
- *Goods of ostentation (Luxury goods)*: These are the commodities which are luxury and expensive in nature. People demand them just for prestige. In such cases even if the prices of such commodities increase some people will demand more of these commodities. For example a person can decide to buy an expensive car like Land cruiser VX just for prestige that he owns an expensive car that costs more than 40 million shillings which others cannot afford.
- *Fear of serious shortages*: When people fear that a certain commodity will be in acute shortage they will buy more of it even though its price is rising. For example when there are signs of impending shortage of cereals due to poor rains in a particular season families can decide to buy large amounts of cereals and keep them in store so as to avoid problems of starvation.
- *Ignorance of consumers:* Sometimes the consumers might buy goods at a higher price because they are ignorant of lower prices for the same goods in other markets. This normally occurs due to the fact that many consumers do not make a wide research before engaging in buying transactions. For example, a consumer goes to Kariakoo Market and buys an item from the first shop he/she comes across before visiting other shops which might be selling the same item at a much lower price.

- *Expectation of future change in price*: If consumers expect that the price of certain commodity will increase in future they would buy more units of the commodity even if its price is high, but if they expect that price will further fall they will buy less. A good example is during wars, when the price of fuel rises so often people tend to buy more oil in large amounts with expectation that the price will continue to rise as the war goes on. Or during harvesting season, people expect that the prices of crops will fall and hence they buy less even if the price is low.

Exceptional Demand Schedule

This is a list of various quantities of a commodity that is bought at various levels of prices and normally at higher price of a commodity more is demanded than at a lower price.

Example of exceptional demand schedule

Table 3.4

Price (Tshs)	**Quantity (Kg)**
100	100
9	90
80	80
70	70
60	60
50	50
40	40
30	30
20	20
10	10

Exceptional demand curve

This is a graphical representation of exceptional demand schedule and it slopes downwards from right to left (inclined to the left).

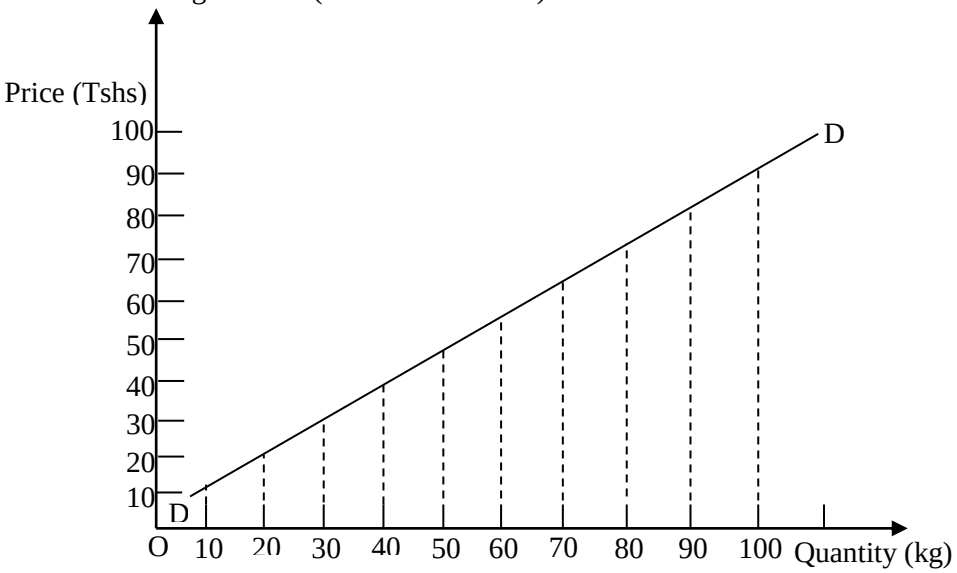


Figure: 3.4 Exceptional demand curve

Features of exceptional Demand Curve

A demand curve has the following features:

- It slopes downward from right to left (Inclined to the left) implying that at higher prices of a commodity large quantity of commodity is bought than at lower prices.
- It has a positive slope.

Change in quantity demanded and change in demand

Change in quantity demanded

Change in quantity demanded refers to an increase or decrease in quantity demanded by consumers due to change in price of commodity and usually when prices increase quantity demanded decreases and vice versa. Assuming other factors remain constant. Factors that remain constant are consumers taste and preference, price of substitute goods, weather condition etc. For example if at price P1 quantity Q3 is demanded and when the price increases to P2 quantity demanded decreases to Q2. So the change in quantity demand from Q3 to Q2 is called change in quantity demanded and can be shown graphically as follows:-

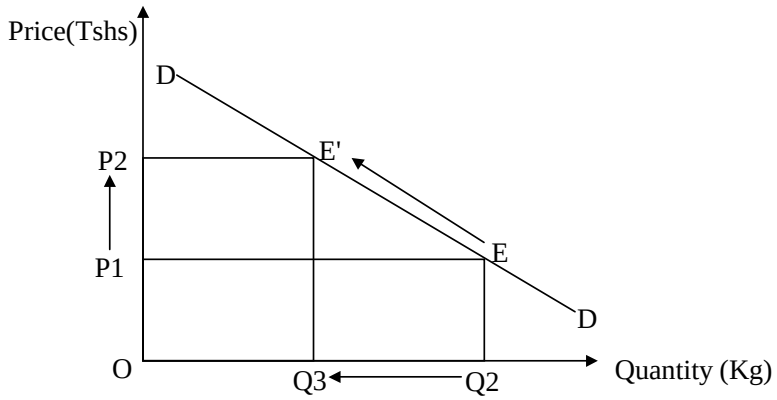


Figure: 3.5 Change in demand

In figure 3.5 the original price is P1 and quantity demanded is Q3; and the equilibrium point is E but when the price increases to P2 the quantity demanded decreases from Q2 to Q3 hence a new equilibrium point E' .

☞**Note:** A change in quantity demanded involves the movement along the same demand curve.

Change in Demand

A change in demand is an increase or decrease in demand due to change in other factors other than the price of a commodity.

Factors which cause change in demand are such as: - income, price of substitute, taste and fashions, population etc. For example, if the income of consumers increases then the demand for normal goods also increases.

Illustration of Change in Demand

Suppose at price 0P1 quantity demanded is 0Q4 and when income increases quantity demanded is 0Q6 at the same level of price.

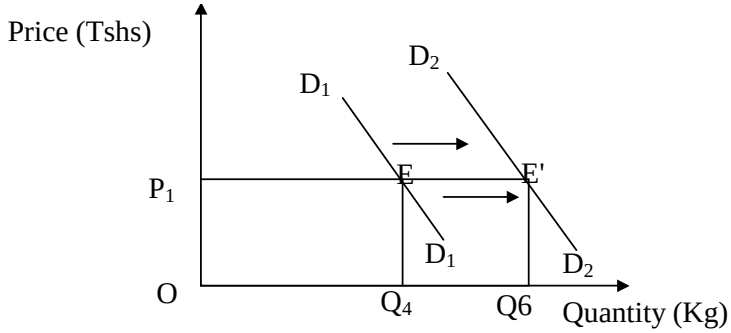


Figure: 3.6 Change in demand

In figure 3.6, above, before the changes in income at price $0P_1$ quantity demanded is 0Q4 (demand curve D_1D_1) but after an increase in income demand has increased to 0Q6 so there is a change in equilibrium position from E to E' and a shift in demand curve from D_1D_1 to a new demand curve D_2D_2. A change in demand involves a shift to a new demand curve.

Factors for Change in Demand

Change in demand is caused by the following factors:

- *Change in income*: Due to the increase of the income of consumers demand rises and when the income decreases demand declines.
- *Change in taste and fashion*: Due to change in taste and fashion demand may increase or decrease. For example, if a commodity, let say, a car is in a new fashion its demand will increase but if it is out of the fashion its demand will decline.
- *Change in price of a substitute:* If a commodity has a close substitute its demand may be affected by the changes in the price of its substitute. For example, if the price of coffee increases it will lead to an increase in demand for tea and if the price of coffee decreases the demand for tea will decline while that of coffee will increase. In figure 3:8a , when the price of coffee is P1 and quantity demanded is Q4 an increase in the price of coffee to P3 caused a decline in the quantity of coffee demanded to Q1, but an increase in demand (D_1D_1 to D_2D_2) of tea as shown in figure 3:8b below.

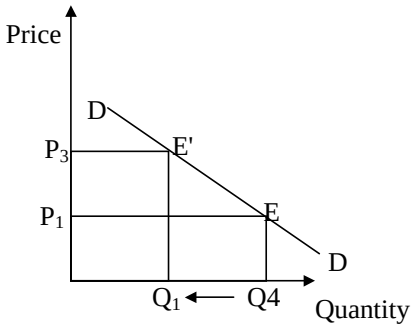


Figure: 3.7a

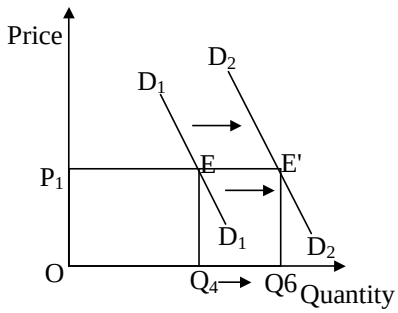


Figure: 3.7b

- *Advertisement*: Advertisement creates awareness about a certain commodity to consumers and leads to an increase in demand, but when a firm's product is not advertised, its demand may decrease. For example, Coca cola Company uses a lot of resources to advertise its products, that is why the demand for its products is high as compared to the products of other companies.
- *Change in population:* When population increases, demand for goods and services rises but when population size declines demand for most of the goods declines. Sometimes a decrease in population can lead to the closure of business in a certain firm because of the decrease in demand for its commodities. For example, the demand for most of the commodities in Dar es Salaam or in any other major cities like Nairobi, Kampala etc, is higher than in small towns like Chalinze, Mtwara, Lindi etc due to high the population size.
- *Change in wealth and distribution:* When wealth is more equally distributed the demand for goods and services will rise while when the wealth is unevenly distributed the demand falls. Goods which are affected by the nature of distribution of wealth are the necessities of life like food stuffs and clothes, which are consumed by the majority of the people. When income is unevenly distributed the under privileged groups in the society fail to afford even necessities of life hence a fall in the demand for these goods.
- *Economic conditions*: When there is economic prosperity in the country demand will be greater while during depression (economic slump or recession) the demand will be smaller.
- *Weather conditions*: If the weather condition is favourable for the use of a certain commodity, its demand will increase and if weather is unfavourable the demand will decline. For example, during hot weather conditions the demand for cold drinks rises but during cold weather conditions the demand for the same commodities falls. Likewise the demand for hot tea rises when the weather is cold and declines when the weather becomes hot. Also, the demand for sweaters and coats increases when it is cold and decline when the weather becomes hot.

Demand Function

This is the mathematical relationship between demand and factors that determine demand.

QD = {P, Ps, TP, Wc, A, Y, Po, Ec}

Where,

QD = Quantity demanded

P_O = Population

P^S = Price of substitute

W^C = Weather

TP = Taste and preference

A = Advertisement

Y = Income

P = Price

E^C = Economic condition

A demand function showing the relationship between price and quantity demanded can be expressed as follows:-

QD = f(p)
Where; QD = Quantity demanded.
F = Function of
P = price level.
From a mathematical formula of equation;
Y = Mx + C
M = Slope
C = Constant
Y = Function of x
We can express the demand function as
QD = -M (p) + C
Where;
QD = Quantity demanded
P = Price
M = Slope of a demand function

Slope of a Demand Function
The slope of a demand function is always negative because of the inverse relationship between quantity demanded and price.
For example:
- QD = -2p
M = -2 = slope
P = 1
-QD = -2p + 20
QD = 20 – 2p

If the prices range from (0 - 10) then the demand schedule will appear as follows:

Table 3.5

Quantity Demanded	**Price**
20	0
18	1
16	2
14	3
12	4
10	5
8	6
6	7
4	8
2	9
0	10

From table 3.5 a demand curve can be as shown in figure 3.9 below.

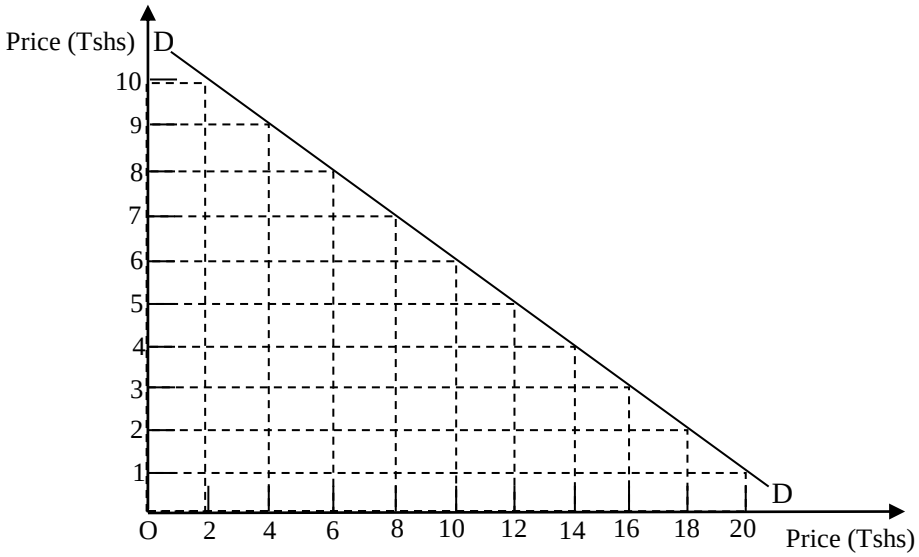


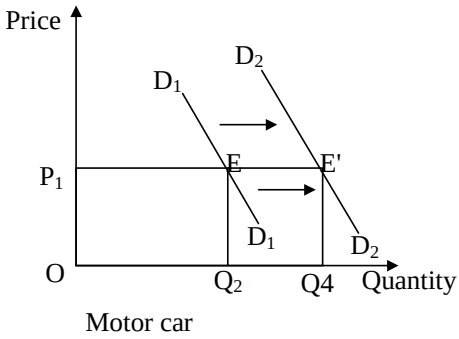
Figure 3.8 Demand curve

QN;
Which of the following is a demand function and why?
1. Q = 3p + 4
2. Q = -3p + 4

Solution
3p + 4
Slope = 3
-3p + 4
Slope = -3
Demand function is Q = -3p + 4 because it has a negative slope (-3)
Supply function = QS = 3P + 4 because it has a positive slope (3)

Interrelated Demand
Sometimes, demand for one commodity is affected by the demand for another commodity. For instance, the demand for coffee is related to the demand for tea because when the price of coffee increases its demand will decrease while the demand for tea will increase.

Types of Interrelated Demand
Types of Interrelated Demand are as follows:
- *Joint (Complementary) Demand:* This is the demand for two or more commodities, which are jointly needed to satisfy a particular, want. Examples of joint demand are tea and sugar, car and petrol, radio and battery, etc. In this case an increase in the demand for one commodity will lead to an increase in the demand for another commodity. For example, an increase in the demand for motor cars will lead to an increase in the demand for petrol.



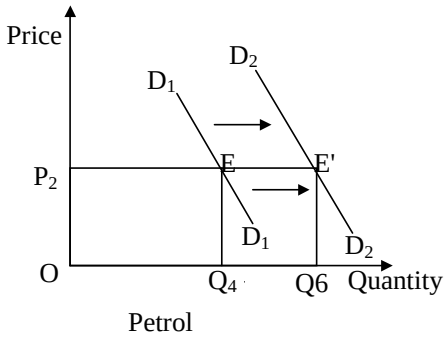


Figure: 3. 9a demand for cars *Figure: 3.9b demand for petrol*

Another example of a joint demand by using illustration of a table and a graph showing the relationship between price of sugar and tea leaves.

Table 3.6

Price of sugar (Tshs)	**Quantity demanded of tea leaves (in Kg)**
5	6
10	5
15	4
20	3
25	2
30	1

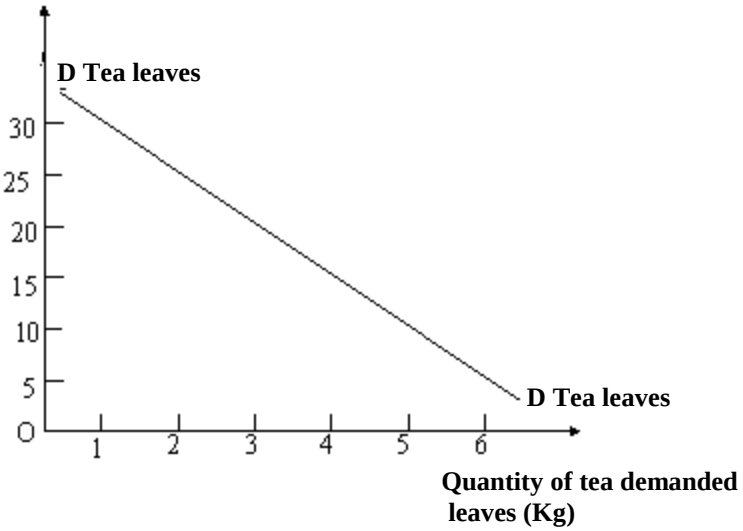


Figure: 3.10 Joint demand curve for sugar and tea leaves

Figure 3.10, above shows that the quantity demanded for tea leaves decreases when the price of sugar increases.

- *Competitive demand:* This is a demand whereby two or more commodities are substitutes and have the same use, for example tea and coffee are substitute to each

other, and in this case an increase in the demand for tea would lead to a decrease in demand for coffee. This relationship is shown in figure 3.11a and 3:11b.

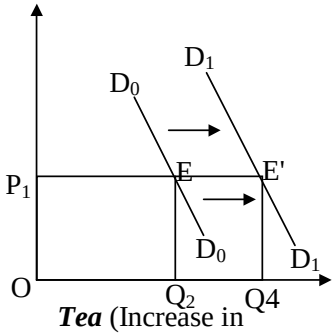


Figure: 3.11a demand for tea

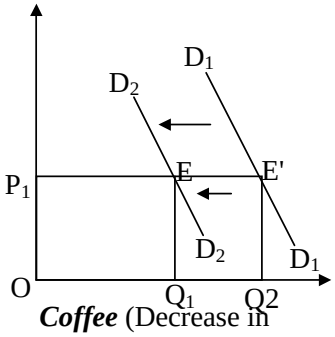


Figure: 3.11b demand for coffee

Also if two commodities have competitive demand changes in the price of one of the two commodities leads to the changes in demand for another commodity. For example if the price of tea increases it leads to a decrease in the demand for tea and leads to an increase in the demand for coffee.

Another example of competitive demand by using a table and a graph:

Table 3.7 quantity demanded for tea and price of coffee

Price of coffee (Tshs)	Quantity of tea
5	15
10	20
15	25
20	30
25	35
30	40
35	45

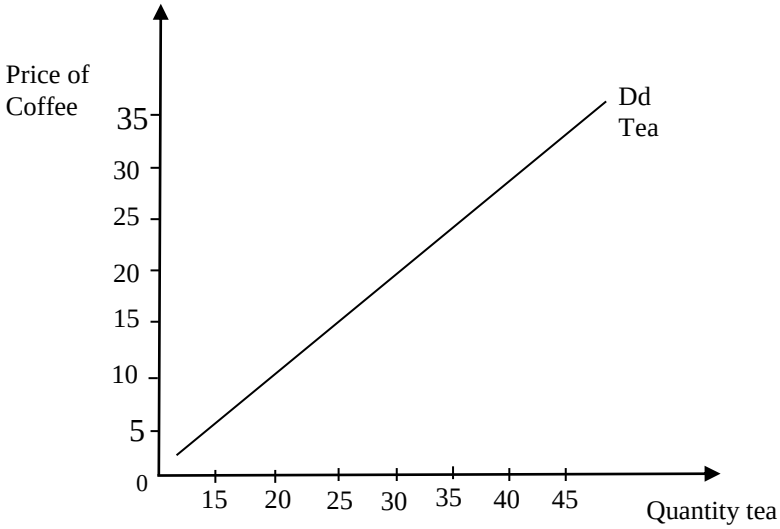
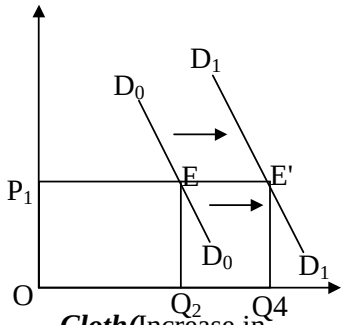


Figure 3.12 Demand curve of tea and coffee

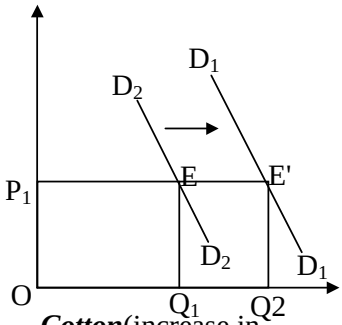
Figure 3.12 above, shows that as the price of coffee increases more quantity of tea is demanded because the two commodities are a substitute, that is, consumers buys more units of one commodity when the price of another increases as it is the case above.

- *Derived demand:* Derived demand is the demand resulting from the demand for another commodity that is when a certain commodity is not needed for its own sake but as a result of demand for another commodity. For example, demand for factors of production is a result of demand for final goods for example the demand for cotton is derived from the demand for clothes. In this case an increase in the demand for clothes would lead to an increase in the demand for cotton. Also an increase in demand for education will lead to an increase in the demand for exercise books, books, teachers and pens.
- This relationship is shown in figure 3.13a and 3.13b below.



Cloth(Increase in

Figure: 3.13a



Cotton(increase in

Figure: 3. 13b

- *Composite demand:* Some goods are used for different purposes the total demand for all the uses is known as composite demand, for example, the demand for steel is a composite demand because steel is needed for many uses such as building ships, manufacturing of cars, production of different kinds of machines etc. In this case an increase in the demand for any commodity for example an increase in the demand for motorcars will increase the demand for steel for production of motor cars and reduce the amount available for other uses.

Elasticity of Demand

This is the degree of responsiveness of demand due to change in price or any other factors which affect demand such as income.

Approaches of Calculating Price Elasticity of Demand

There are two approaches of calculating price elasticity of demand:

- *Percentage method:* According to this method price elasticity of demand is given by:

$$Pe = \frac{Percentage\,change\,in\,quantity\,demanded}{Percentage\,change\,in\;price\;of\;commodity}$$

$$Pe = \frac{\%\Delta QD}{\%\Delta P}$$

Table 3.8 Demand curve

Price TShs	**Quantity demanded kg**
Po = 4	Qo = 10
PN = 8	QN = 8

PO = Old price, PN = New price, QO = old quantity, GN = New quantity.

Solution

$$Pe = \frac{\text{Percentage change in quantity demanded}}{\text{Percentage change in price of commodity}}$$

$$Pe = \frac{QN - Qo}{Qo} \times 100 \div \frac{PN - PO}{PO} \times 100$$

$$= \frac{8-10}{10} \times 100 \div \frac{8-4}{4} \times 100$$

$$= \frac{-200}{10} \times \frac{4}{400}$$

$$= \frac{-800}{4000}$$

$$= \frac{-1}{5} = 0.2$$

- *Formula approach:* This is derived as follows:

$$PE = \frac{QN - QO}{QO} \div \frac{PN - PO}{PO}$$

Mathematically it can be expressed as follows

$$PE = \frac{QN - QO}{QO} \div \frac{PO}{PN - PO}$$

$$PE = \frac{QN - QO}{PN - PO} \times \frac{PO}{QO}$$

$$PE = \frac{\Delta QD}{\Delta P} \times \frac{PO}{QO}$$

Where;
QN= new quantity
QO = old quantity
PN = new price
PO = old price
QN - QO = change in quantity (ΔQ)
PN - PO = change in price (ΔQ)

Example

Find elasticity of demand given that when the price of a commodity is Tshs 4, the quantity demanded is 10 units, and when the price increases to Tshs 8, quantity demanded decreases to 8 units.

Given;
PN = Tshs 8
PO = Tshs 4
QN = 8 UNITS
QO = 10 UNITS

Solution

$$PE = \frac{\Delta QD}{\Delta P} \times \frac{P_O}{Q_O}$$

$$PE = \frac{8-10}{8-4} \times \frac{4}{10}$$

$$PE = \frac{4}{20} = 0.2$$

☞**Note:** Elasticity of demand is always negative because of the inverse relationship between price and quantity demanded .In order to avoid a negative answer a negative sign is introduced to the formula as follows:

$$PE = -\left(\frac{\Delta QD}{\Delta P} \times \frac{P_O}{Q_O}\right)$$

Types of Price Elasticity of Demand

Elasticity of demand can be greater than one, equal to one, less than one, zero or undefined.

- *Elastic demand:* Price elasticity of demand is said to be elastic if a change in price of a commodity brings a larger than proportionate change in quantity demanded of a commodity. Numerically the size of elasticity of demand is greater than one and a demand curve of elastic demand has a gentle slope.

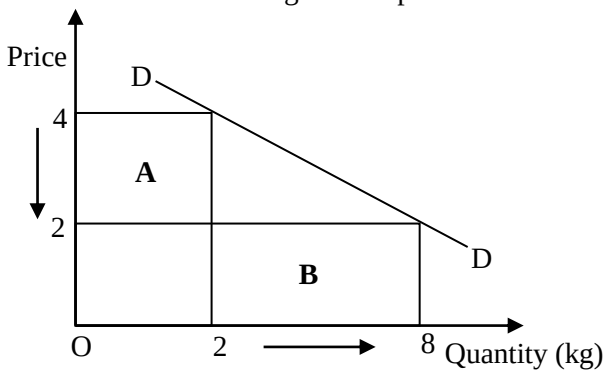


Figure 3.14 Elastic demand

In figure 3.14 above, Area of rectangle A is smaller than the area of rectangle B implying that a change in price from Tshs 4 to Tshs2 has caused a larger proportionate change in quantity demanded from 2units to 8 units.

Note: Elastic demand has a gentle slope because a smaller change in price brings a larger proportionate change in quantity demanded.
Elasticity of demand from the demand curve can be calculated as follows:

Given old price = Tshs.4, New price = Tshs.2, New quantity = 8kg, old quantity 2kg
Solution:

$$Pe = -\left(\frac{\Delta QD}{\Delta P} \times \frac{PO}{QO}\right)$$

Where Δ QD = Change in quantity demanded, ΔP = Change in price, *PO* = Old price, *PN* = New price.

Δ QD = QN – QO

Δ P = PN – PO

$$\therefore Pe = \frac{QN-QO}{PN-PO} \times \frac{PO}{QO}$$

$$Pe = \frac{8-2}{2-4} \times \frac{4}{2}$$

$$= \frac{24}{4}$$

Pe = 6

The measure is greater than one so it is elastic demand.

- *Inelastic demand:* Price elasticity of demand is said to be inelastic when a change in price brings a smaller proportionate change in quantity demanded. It means demand is less sensitive to the change in price. Goods which have inelastic demand include all necessities like, food as a whole, salt, clothes etc.

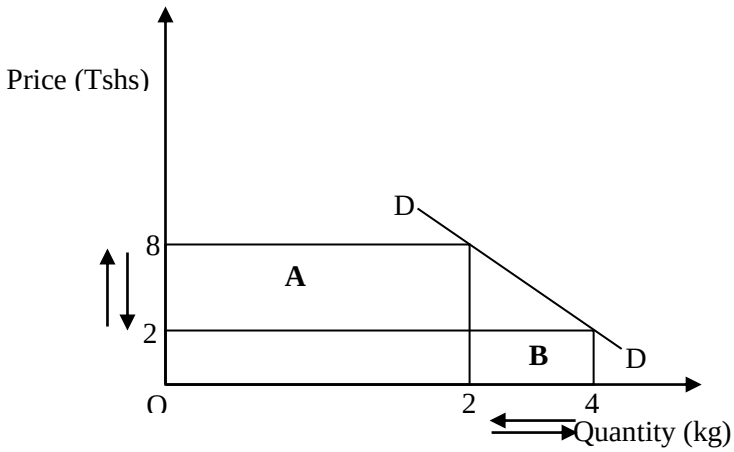


Figure: 3.15 inelastic demand

In figure 3.15, above, a large change in price from Tshs. 8 to Tshs.2 has caused a smaller increase in quantity demanded from 2kg to 4kg also a change in price from Tshs.2 to Tshs.8 has caused a smaller decrease in demand from 4kg to 2kg and the area of rectangle A is greater than the area of rectangle B showing that a proportionate change in price is greater than the proportionate change in quantity demanded.

☞**Note:** Numerically the measure of inelastic demand is less than one but greater than zero.
0 < Pe < 1

- *Unitary elastic:* Price elasticity of demand is said to be equal to unit if a proportionate change in price brings an equal proportionate change in quantity demanded. Numerically the size of elasticity is equal to one.

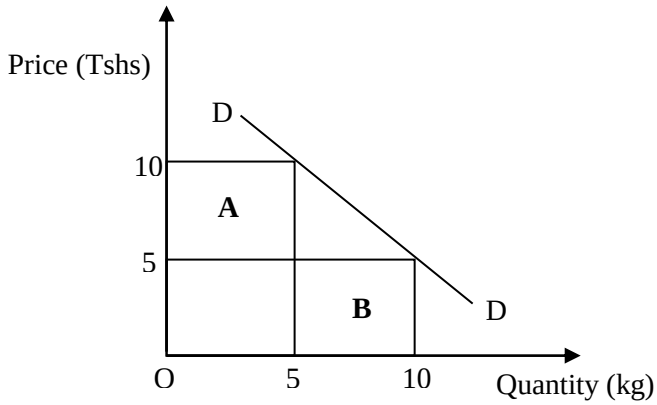


Figure: 3.16 Unitary elastic

In figure 3.16, the area of rectangle A is equal to the area of rectangle B showing that a proportionate change in price is equal to a proportionate change in quantity demanded.

- *Perfectly elastic demand:* Price elasticity is said to be perfectly elastic if demand changes while price remains constant. See figure 3.17, numerically the measure is equal to infinity.

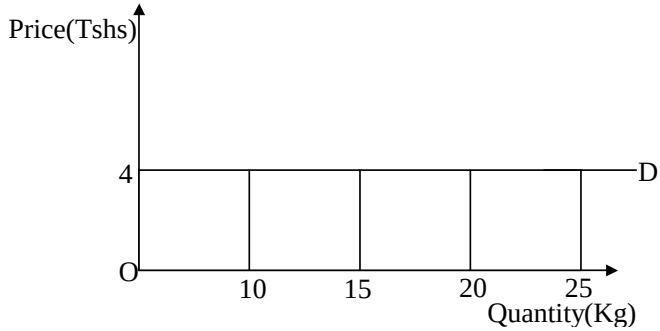


Figure: 3. 17 Perfect elastic demand

In figure 3.17 various quantities are demanded at the same price of Tshs.4.Calculation of the perfect elastic demand by using the above information.

$$Pe = \frac{\Delta QD}{\Delta P} \times \frac{PO}{QO}$$

Price = 4

QN = 15

QO = 10

$$Pe = \frac{15-10}{4-4} \times \frac{4}{10}$$

$$Pe = \frac{5}{0} \times \frac{4}{10} = \frac{20}{0}$$

Pe = Undefined

- *Perfectly inelastic demand:* Price elasticity of demand is said to be perfectly inelastic when quantity demanded remains the same when price changes. It means demand is totally irresponsive to the changes in the price. See figure 3.18, numerically the measure is equal to zero.

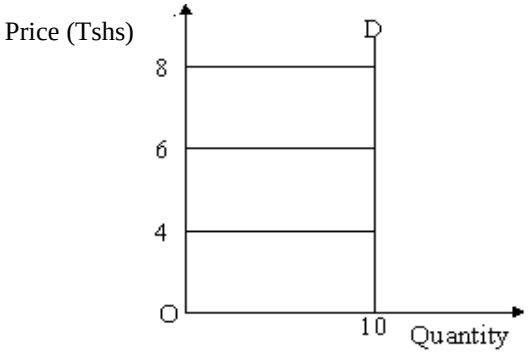


Figure: 3.18 Perfectly inelastic demand

$$Pe = \frac{\Delta QD}{\Delta P} \times \frac{PO}{QO}$$

$$= \frac{10-10}{6-4} \times \frac{4}{10}$$

$$= \frac{0}{2} \times \frac{4}{10}$$

$$= \frac{0}{20}$$

$$Pe = 0$$

Income Elasticity of Demand

This is the degree of responsiveness of change in demand due to change in income. Income elasticity of demand can be calculated either by percentage method or formula method.

Percentage method:

$$Ye = \frac{\%\ change\ in\ quantity\ demanded}{\%\ change\ in\ income}$$

Formula method:

$$\frac{QN-QO}{QO}$$

$$\frac{YN-YO}{YO}$$

$$= \frac{\Delta QD}{\Delta Y} \times \frac{YO}{QO}$$

Where;

Δ QD = QN – QO

Δ Y = YN – YO

QN = New quantity

QO = Old quantity
YN = New income
YO = Old income

Example

If an increase in the income from Tshs.200 to Tshs.400 made a consumer to buy two bottles of soda instead of one that he used to buy before, the income elasticity of demand will be as follows:

Given;

New quantity = 2
Old quantity = 1
Old income = Tshs200
New income = Tshs400

Solution

$$Ye = \frac{\Delta QD}{\Delta Y} \times \frac{Y_O}{Q_O}$$

Where;

Ye = Income elasticity
Δ QD = change in quantity = Qn - Qo
Δ Y = Change in income
Yo = Old income
Yn = New income
Qo = Old quantity

$$Ye = \frac{2-1}{400-200} \times \frac{200}{1}$$

$$Ye = \frac{1}{200} \times \frac{200}{1}$$

$$Ye = \frac{200}{200}$$

Ye = 1 Unitary elastic demand.

Cross Elasticity of Demand

This is the degree of responsiveness of demand for a commodity due to a change in price of its substitute. For example, if the price of tea increases it will lead to a decrease in demand for tea and an increase in the demand for coffee.

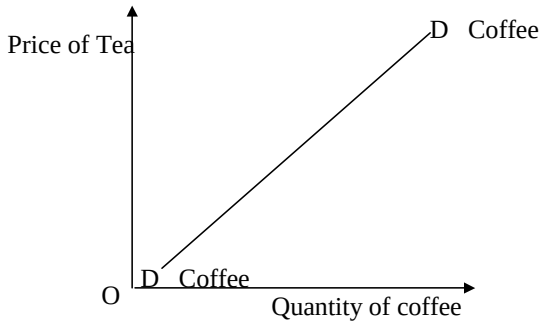


Figure: 3.19 Cross elasticity of substitutes

Figure 3.19, above, shows that as the price of tea increases, consumers tend to substitute coffee with tea. As a result the demand for coffee increases.

Or

The graph above can be presented in two graphs as follows:

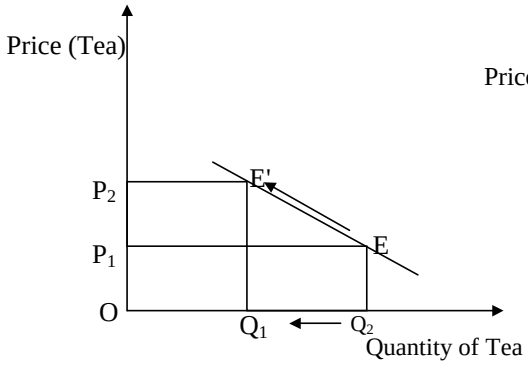


Figure: 3.20a increase in price of tea

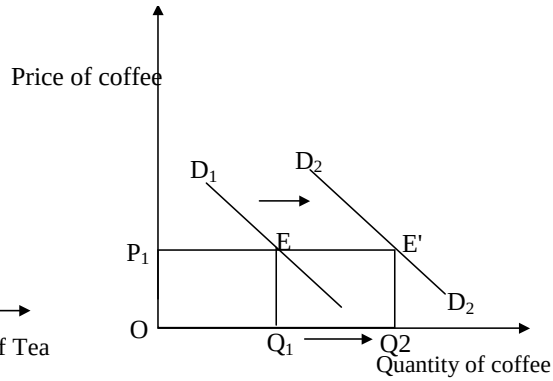


Figure: 3.20b increase in demand for coffee

In figure 3.20a above, an increase in the price of tea from $0P_1$ to $0P_2$ leads to a decrease in the quantity demanded of tea. As a result, demand for coffee change from D_1D_1 to D_2D_2.

Cross elasticity of demand can be expressed by either the percentage method or formula method.

Percentage method:

$$\text{Cross elasticity of demand} = \frac{\%\ change\ in\ quantity\ demanded\ of\ commodity}{\%\ change\ in\ price\ of\ commodity\ x}$$

Formula method:

$$\text{Cross elasticity of demand} = \frac{\Delta QDy}{\Delta Px} \times \frac{Pox}{Qoy}$$

Where;

Δ QDy = Change in quantity demanded for commodity y

Δ Px = Change in price of commodity x

Pox = Original price of commodity x

Qoy = Original quantity of commodity y

For example:

Calculate cross elasticity of demand given the following information. When the price of tea is Tshs.4 the demand is 10 units, when the price of tea increases to Tshs.8 the demand for coffee increases to 20 units.

Given:

(Qn)y = 20

(Qo)y = 10

(Po)x = 4

(Pn)x = 8

Solution

$$\text{Cross elasticity of demand} = \frac{\Delta QD \text{ Coffee}}{\Delta P \text{ Tea}} \times \frac{\text{Po Tea}}{\text{Qo Coffee}}$$

$$\text{Cross elasticity of demand} = \frac{20-10}{8-4} \times \frac{4}{10}$$

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

$$= \frac{40}{40}$$

Cross elasticity of demand = 1 = Unitary elastic demand.

☞**Note:** Cross elasticity of demand for substitutes is always positive because an increase in the price of one commodity, which has a close substitute, leads to an increase in the demand for its substitute.

In our example above an increase in the price of tea led to an increase in the demand for coffee because consumers tend to substitute one commodity with another commodity when the price of one of the substitutes changes. However, cross elasticity of demand for complements like sugar and tea leaf is negative because a change in price of one of the complements results into an opposite change of quantity demanded of its complements.

When the price of sugar increases, consumers will buy less sugar hence the demand for tea leaves will decrease and therefore the cross of elasticity demand will be negative.

Types of cross elasticity of demand

There are three types of cross elasticity of demand:

(i) Positive cross elasticity
(ii) Negative cross elasticity
(iii) Zero cross elasticity

(i) Positive cross elasticity: Positive cross elasticity occurs to goods which are substitutes in nature and which a rise in price of one leads to an increase in demand of another and a decrease in price of one leads to a decrease in demand for the other.

Diagrammatically it is shown in figure 3.21 as follows.

In figure 3.21, below a rise in the price of tea leads to a rise in the quantity demanded for coffee.

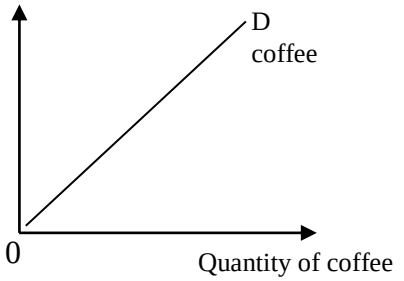


Figure: 3.21 Positive cross elasticity

(ii) Negative cross elasticity: This is a cross elasticity of complementary goods showing that a rise in the price of one good, resulting in less being demanded of that good, then causes less to be demanded of the good in joint demand. Example a rise in the price of cars will cause a fall in the quantity demanded of cars and petrol. Diagrammatically it can be shown as follows.

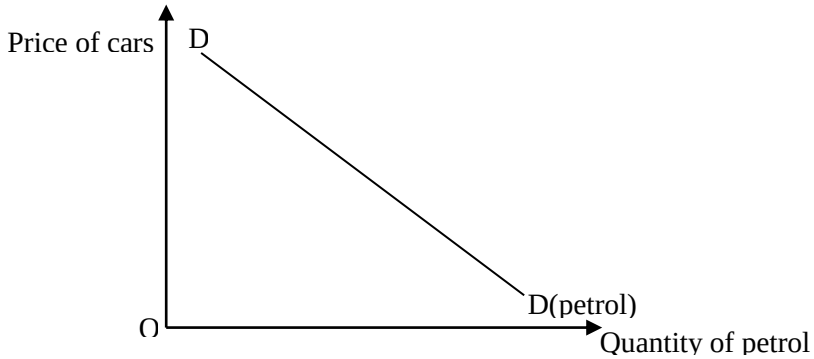


Figure: 3:22 Negative cross elasticity

In figure 3.22, an increase in the price of cars leads to less demand for cars and petrol hence a negative cross elasticity.

(iii) Zero cross elasticity: This is a cross elasticity between two goods which have no relationship at all for example clothes and cars. A change in the price of one of the two commodities will have no measurable effect upon the demand for the other commodity. For example, when the price of cars increases it will not have no effect on the demand for clothes.

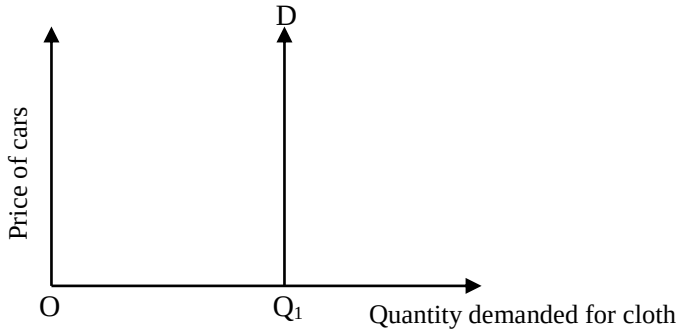


Figure: 3.23 Zero cross elasticity

In figure 3.23 above, an increase in the price of cars has no effect on the demand for clothes.

Point Price Elasticity of Demand

This is the measurement of price elasticity at a particular point on the demand curve. For a straight - line demand curve, point elasticity can be found using the following formula: Point ed $= \frac{\Delta q / q}{\Delta p / p} = - \frac{\Delta q}{\Delta p} \frac{p}{q}$. In this formula, p/q is the price divided by the quantity at the point and $\Delta q / \Delta p$ is the reciprocal of the slope of the line. The minus

sign is conventional; it ensures that the elasticity of demand for a normal good is positive.

Examples

Table 3. 9 Point elasticity of demand

Price of X	Quantity demanded
8	0
7	5
6	10
5	15
4	20
3	25
2	30
1	35
0	40

From Table 3.9 above find the price elasticity of demand when price = 6p. The slope of the line, $\Delta p / \Delta q$ = -8/40 = -1/5. Reciprocal of the slope, $\Delta q / \Delta p$ = -5. Point elasticity, ed = - (-5) × 6/10 = 3.

Arc Elasticity of Demand. This is an estimate of the elasticity along a range of a demand curve. It can be calculated for both linear and non-linear demand curves using the formula:

$$\text{Arc ed} = -\frac{\Delta q(p1+p2)/2}{\Delta p(q1+q2)/2}$$

In this formula, p1 and q1 represent the initial price and quantity, and p2 and q2 represent the new price and quantity, This means that (p1 + p2)/2 is a measure of the average price in the range along the demand curve and (q1 + q2)/2 is the average quantity in that range.

Example

Table 3.10 Arc elasticity of demand

Price of commodity X	Quantity demanded
8	0
7	5
6	10
5	15
4	20
3	25
2	30
1	35
0	40

Arc elasticity between two points 5 and 6 can be calculated as follows:

$$\text{Arc ed} = -[(-5)/1] \times \frac{11/2}{25/2} = 11/5$$

Example: given the table above, estimate the elasticity in the price range from 1p to 2p

Arc ed = - (-5) × $\frac{3/2}{65/2}$ = 3/13.

Factors Influencing Elasticity of Demand for a Commodity

Elasticity of demand is influenced by the following factors:

- *Degree of the necessity of a commodity:* The elasticity of demand for necessary goods like clothes, salt, and food as a whole is inelastic because consumers are ready to purchase a necessary commodity at any price, even when the price increases consumers will purchase almost the same quantity.
- *Luxury commodities:* The demand for luxury commodities like jewels, luxury cars etc, is more elastic consumers tend to buy less of these commodities when price increases but more of these commodities are bought when their prices fall.
- *Degree of substitutability of a commodity:* The demand for commodities which have close substitute for example coffee and tea is more elastic because when price of one increases consumers tend to substitute the commodity with its substitute causing a large decrease in quantity demanded. While a commodity which has no close substitute like salt, its elasticity of demand is less elastic (inelastic) because consumers do not have any other commodity to use instead of salt, so they are ready to purchase salt at any price. In this case when the price of salt increases the quantity demanded of salt will remain almost the same.
- *Price level:* Price elasticity of demand is also affected by the level of price. When price is either too high or too low the demand for a commodity will be less elastic (inelastic).
- *Time:* In a short period of time a change in price may have little influence in demand therefore the demand will be less elastic (inelastic) since it may be sometimes before all consumers become aware of the changes in price or it may be thought that price will continue to fall. In the long run consumers will be aware of the changes in price in case the change is of a fall in price more quantity will be demanded and the elasticity of demand will be elastic.
- *Habit:* People's demands for some commodities are to a large extent determined by the habit of consumers. Examples of such commodities are cigarettes and beer. Consumers of these commodities consume the commodities by habit. Their quantity demanded is less affected by the changes in price. Even when the price rises they consume almost the same quantity or the quantity demanded decreases by a small proportion. Hence the elasticity of demand for commodities consumed by habit is inelastic.
- *Proportion of a person's income spent on a commodity:* If a person spends a small part of income on a certain commodity the demand for such a commodity will be inelastic for example a razor blades and a match box while if a person spends a larger part of income on a commodity its demand will be elastic.
- *Number of uses of a commodity:* If a commodity has several uses its demand will be elastic for example electricity has so many uses therefore its demand is very elastic.
- *Durability of a commodity:* Durable goods like furniture stay for a long period of time after being bought, their demand is therefore inelastic, when the price fall consumers may not buy other furniture immediately until in the long run when the furniture they have undergone wear and tear.

- *Income of a consumer:* If the income of a person is very low his/her demand will be elastic, When price increase the quantity demanded of the poor person will decline by a larger amount but when a person is rich, his/her demand will be inelastic even when the price increase the demand for the rich person will decline by a very small amount.

Importance of Elasticity of Demand

Elasticity of demand has the following importance:

To the Government

The concept of elasticity of demand is important to the government in two issues.

- *Taxation:* Normally, most of the governments in the world impose high taxes on goods which have inelastic demand such as beer and cigarettes, the reason for this is that, the demand for such commodities is influenced by habit and therefore it is not affected by the increase in price due to increase in tax. In this case the government is able to collect more revenue from these commodities. On the other hand the governments impose low tax on goods with elastic demand because consumers of these commodities consume less when prices of such goods with elastic demand increase. Therefore, the government loses revenue by imposing high tax high tax on goods with elastic demand.
- *Devaluation policy:* Devaluation is the reduction in the value of the domestic currency in terms of the foreign currency. When a currency is devalued exports become cheaper while imports become more expensive. A country is therefore able to export more goods abroad and to import less from abroad. Hence the country's balance of payments improves. Nevertheless, for devaluation to be successful it depends on the elasticity of demand for exports and imports.
- Devaluation is effective if and only if elasticity of demand for exports is elastic as well as the elasticity of demand for imports.
- Devaluation will be less effective when elasticity of demand for export and import is less elastic.
- When elasticity of demand is elastic a decrease in price due to devaluation will cause a large increase in quantity demanded of a country's export, a country will therefore get more revenue.
- At the same time the country's import will decrease by a large amount therefore a country will spend less revenue on imports.
- But when elasticity of demand is inelastic devaluation will not be helpful because a decrease in price due to devaluation will cause a smaller increase in the demand for exports of a country therefore a country will get less foreign currency.
- At the same time a country will spend more foreign currency on imports when the imports have inelastic demand. The reason is that when a country devalues its currency imports become more expensive but demand for imports do not decrease by a large proportion due to the fact that they have inelastic demand, hence the country will continue to import almost the same quantity and spend more revenue.

To Businessmen

Most businesspeople sell goods which have inelastic demand, the reason is that consumers buy almost the same quantity when prices of such goods increase. Goods which have inelastic demand include all necessities of life example foodstuffs, clothes

and goods without close substitutes. Businesspeople will gain more profit by raising the prices of goods with inelastic demand. On the other hand businessmen will avoid selling goods with elastic demand because consumers decrease quantity demanded by a large amount when the prices of these commodities increase.

To a Monopolist

A monopolist who practices price discrimination he normally fixes different prices in different markets depending on the elasticity of demand in those two markets. He fixes higher prices in a market where consumers have inelastic demand and a low price in a market in which consumers have elastic demand. Because in a market in which consumers have inelastic demand quantity demanded by the consumers will decrease by a small amount when price is raised unlike in a market in which consumers have elastic demand where consumers will decrease quantity demanded by a large amount when the price is raised.

A case of inelastic demand in Market 1

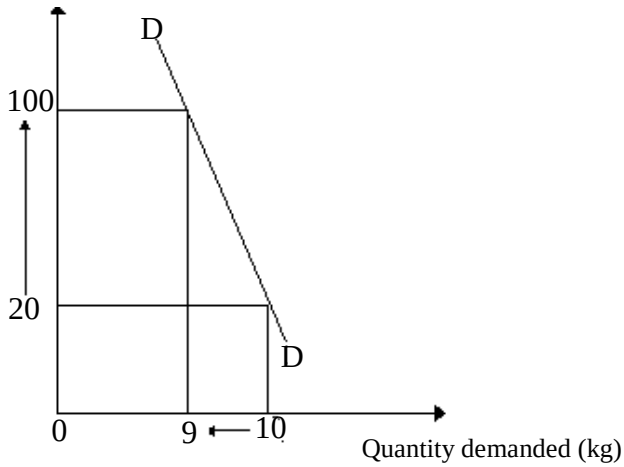


Figure: 3.24 A case of inelastic demand

By using figure 3.24 above, for illustration the demand for the commodity is inelastic implying that a change in price from Tshs. 20 to Tshs. 100 has caused a small decrease in quantity demanded from 10kg to 9kg. A monopolist by charging Tshs 100 on the commodity sells 9 units and earns revenue of Tshs. 900. But by charging Tshs. 20 he earns revenue of only Tshs. 200. Therefore it is profitable for a monopolist to charge a higher price on a commodity with inelastic demand than a lower price. Case of elastic demand. Market 2

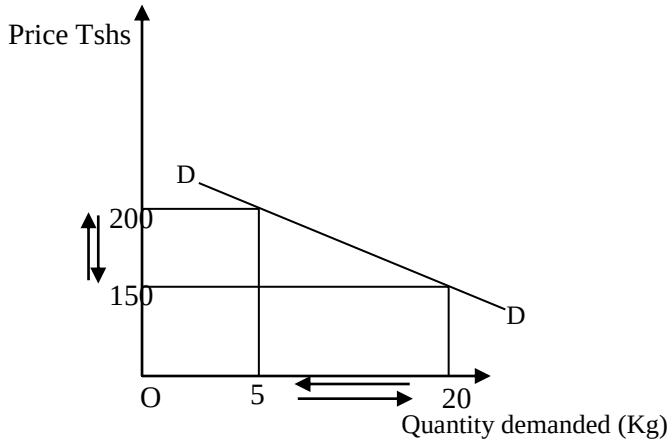


Figure: 3.25 A case of elastic demand

In figure 3.25 demand is elastic. A monopolist will charge a price of Tshs. 150 on the commodity because this price will enable him to get more revenue of (150 × 20) = 3000 than if he charges a higher price of Tshs. 200 which will generate a revenue of only (200 × 5) = Tshs 1000. The reason is that when the monopolist increases price from Tshs. 150 to Tshs. 200 quantity demanded decreases by a larger proportion from 20kg to 5kg and when he reduces the price from Tshs. 200 to Tshs. 150 quantity demanded increases by a larger proportion from 5kg to 20kg.

Wage Determination

The level of wages is largely influenced and determined by elasticity of demand for labour. When the demand for labour is inelastic labour or trade unions will have a big power to negotiate for higher wages unlike when the demand for a particular labour is elastic, the reason is that when the demand for a particular labour is inelastic employers who are the ones who demand labour will not decrease by a large proportion the quantity demanded for labour even when a trade union succeeds in raising the level of wages. On the other hand when the demand for a particular labour is elastic employers will demand less labour when wages are raised. Therefore, in this case of elastic demand for labour many workers will lose their jobs when they demand for large increase in wages.

Price and Revenue Determination

The price that a firm charges and the resulting revenue depends much on the elasticity of demand for a commodity. A firm will charge a higher price when a commodity has inelastic demand and a lower price when a commodity has elastic demand. The reason is that consumers will not decrease large quantity demanded on a commodity with inelastic demand when price is increased therefore a firm will get more revenue but less revenue by charging a lower price. On the other hand consumers will decrease large quantity demanded on a commodity with elastic demand when the price is increased. In this case of elastic demand a firm will get less revenue by charging higher price but more revenue by charging a lower price.

Case of inelastic demand

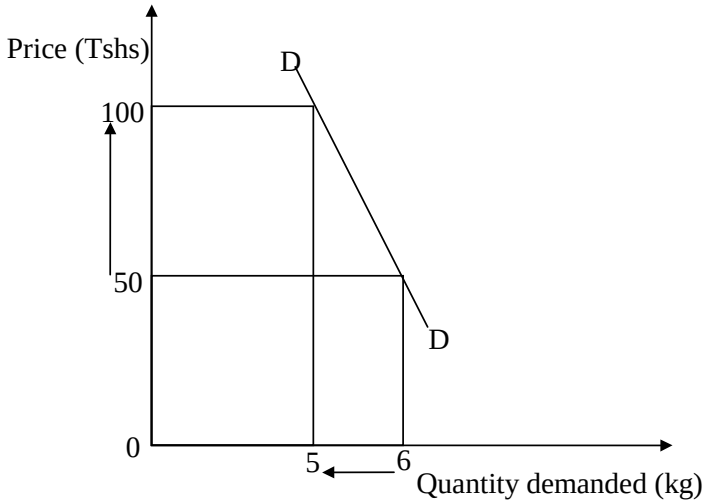


Figure: 3. 26 Revenue of a firm when price is less elastic

In figure 3.26 above, a firm under imperfect market will fix price at Tshs. 100 and not at Tshs. 50 because this price will enable the firm to earn a larger revenue of (100 × 5) = Ths 500 than a revenue of (50 × 6) = Tshs. 300 if the firm charges a price of Tshs. 50. The reason is that a commodity has inelastic demand even when price is increased from Tshs. 50 to Tshs. 100 consumers will reduce quantity demanded by a smaller proportion from 6kg to 5kg which is only a 16.6% decrease in quantity demanded as compared to a 100% increase in price.

Case of elastic demand

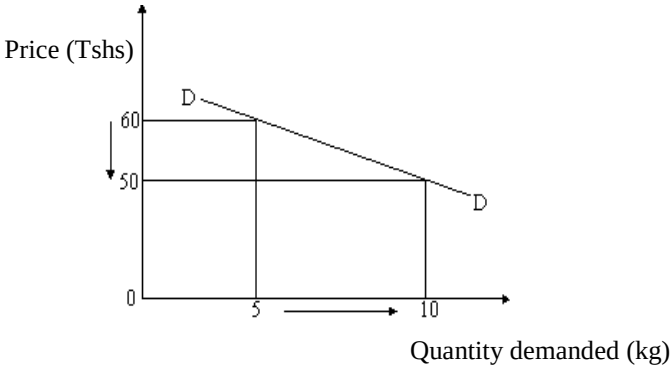


Figure: 3. 27 Demand is elastic

In the figure 3.27,shows that if demand is elastic a firm will get more revenue by fixing price at price Tshs. 50 than at price Tshs. 60 because the former will earn the firm a higher revenue of (50 × 10) = 500 while the latter will earn the firm revenue of (60 × 5) = Tshs. 300.

Supply

Supply is the amount of goods sold in the market at various levels of prices at a specific period of time or is the amount of the commodity that firms are willing and able to sell in the market at a specific level of price and period of time.

The law of supply

The law of supply states that, assuming other factors remain constant the higher the price of the commodity the greater the quantity that will be supplied and vice versa.

Factors Influencing Supply

- *Cost of production:* When the cost of production of any commodity rises, the supply of the commodity decreases and when the cost of production declines the supply of the commodity increases.
- *Climatic condition:* If the climate is favourable for the production of a certain commodity its supply will be high while if the climate is unfavourable production is lowered. A good example is of agricultural production which increases as a result of favourable weather, and decreases during poor rains.
- *Technology:* When a firm applies advanced technology in production, production increases unlike when a firm applies poor technology.
- *Peace and security:* When there is peace and security suppliers are able to engage in production resulting into an increase in supply while insecurity causes difficulties in production of goods due to fear of loss of properties leading to the decline in supply.
- *Infrastructures:* Infrastructures such as roads and communication network make it possible to move commodities or materials from where they are available to where they are needed for consumption and production respectively leading to the increase in supply. Conversely a poor infrastructure is a deterrent to production and supply of goods and services.
- *Taxation:* Taxation is the compulsory payment to the government by individuals and firms. Whenever they consume and produce goods respectively. When the government imposes heavy tax on inputs it results into an increase in the cost of production leading to a decline in supply.
- *Availability of factors of production:* In case in a certain area factors of production such as labour, land, capital and entrepreneurship are available in large quantity supply will be high unlike in areas where factors of production are scarce.
- *Number of firms in the market:* If there is a large number of firms in the market competition will be high leading to increase in supply unlike when there are few firms in the market, i.e. monopoly market.
- *Political factors:* When there is political stability in a country, producers will be able to engage in production activities hence supply will be high but during times of political instabilities producers will be discouraged to continue with production and supply will be low.
- *Size of demand:* When demand is high it causes an increase in price and an increase in supply. But a lower demand leads to a decrease in price hence a fall in supply.
- *Gestation period:* This refers to the production period or the period of maturity of a commodity for example since a crop is planted to a harvesting period .if the gestation period is very long supply will be low and if the gestation period is short

supply will be high. For example, in the short run supply of cash crops like coffee is low due to the fact that coffee plants have a long gestation period while the supply of vegetables is high due to short gestation period.

- *Price of substitute:* Supply of a commodity can be affected by the price of a substitute for example the price of coffee can affect the supply of tea when the price of coffee increase producers will produce more coffee but less tea.
- *Degree of freedom existing in the market:* If there is free entry in the market supply will be higher than if there are barriers to entry as it is the case in the monopoly market where supply is lower because of a single supplier of a commodity.
- *Expectation of future change in price:* When suppliers expect that price will rise in future they will supply more quantity of a commodity unlike when they expect a price fall.

Supply Schedule

This is a list showing various quantities of a commodity or services supplied in the market at various levels of price at a specific period of time.

Table 3.11 Example of a supply schedule

PRICE	QUANTITY SUPPLIED
10	100
20	90
30	80
40	70
50	60
60	50
70	40
80	30
90	20
100	10

Supply Curve

This is a mathematical/graphical representation of a supply schedule.

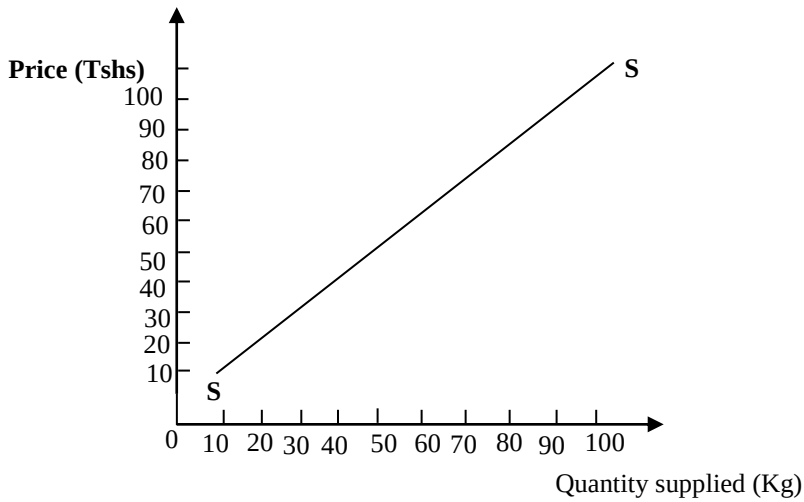


Figure: 3.28 Relationship between price and quantity supplied

Figure 3.28 above, represents the relationship between price and quantity. The prices are plotted on the y-axis while the quantity supplied is plotted on the x-axis.

Given the supply schedule in table 3.13 below, its supply curve will be as shown in figure 3.29.

Table 3.13

Price	**Quantity Supply**
P1	Q1
P2	Q2
P3	Q3

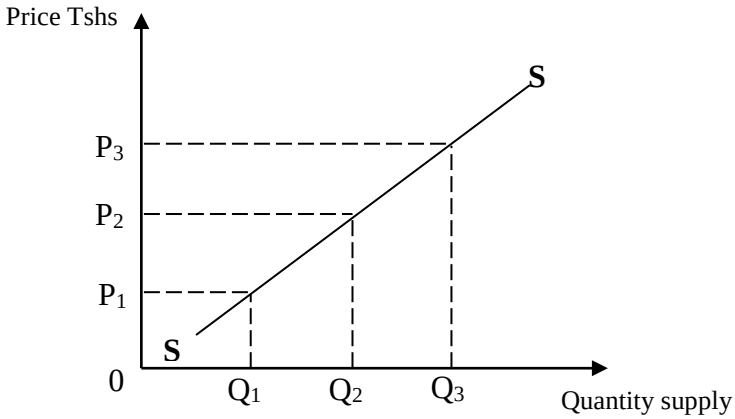


Figure: 3. 29 Supply curve

Features of a Supply Curve

A supply curve has the following features:

- It slopes downwards from right to left implying that at a higher price of a commodity a large quantity is supplied and at lower prices a small quantity is supplied.
- It has a positive slope because of a positive relationship between quantity demanded and price.

Individual Supply Schedule

This is a list showing various quantity of a commodity that will be supplied in the market at different levels of prices at specific period of time by a single firm in the market. An example of a supply schedule of a firm is as given in table 3.14 below.

Price (Tshs)	**Quantity supplied (kg)**
10	20
8	16
6	12
4	8
2	4

An individual supply schedule can be used to draw an individual supply curve as shown below:

Individual Supply Curve

This is a graphical representation of supply schedule of a single firm in the market. For example from the above supply schedule of a firm the supply curve can be drawn as follows:

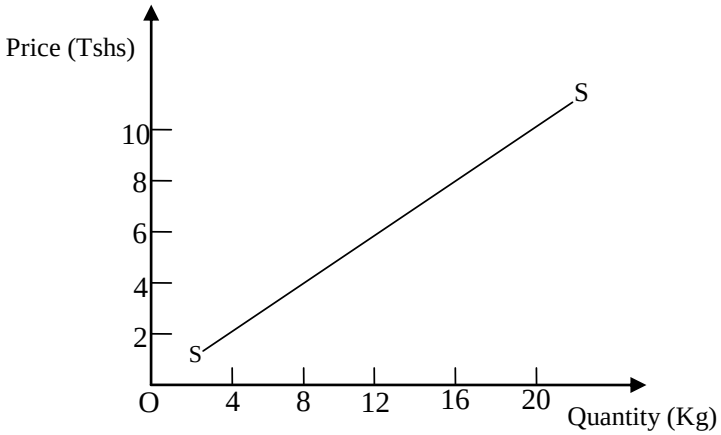


Figure: 3. 30 Individual supply curve

Market Supply Schedule

This is a list showing various quantities of a commodity supplied at different levels of prices at specific period of time by more than one firm in the market. For example, given below is the supply schedule of firm A and firm B.

Table 3.15a and 3. 15b show Individual supply schedules.

Price (Tshs)	**Quantity (kg)**
8	15
7	12
6	9
5	6
4	3

Price (Tshs)	**Quantity supplied (kg)**
8	20
7	16
6	12
5	8
4	4

A Market Supply Schedule

This is a combination of supply schedules of more than one firm in the market. From the above example of supply schedules of firms A and B, a market schedule can be presented as follows;-

Table 3.16 Market supply curve

Price (Tshs)	**Quantity (kg)**
8	35
7	28
6	21
5	14
4	7

By using the above supply schedule the market supply curve can be drawn as shown below

Market Supply Curve

This is a graphical representation of the market supply schedule. It is a horizontal summation of various quantities supplied in the market at different levels of price. From the above schedules of firm A and B a market supply curve is as shown in figure 5.32c

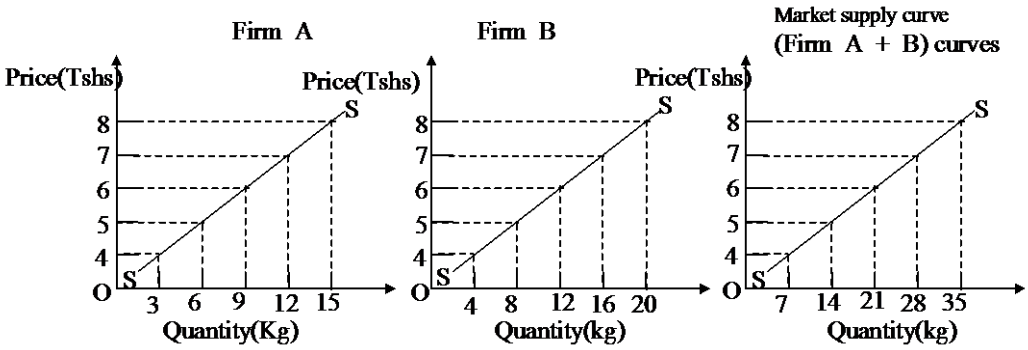


Figure: 3.31a *Figure: 3. 31b* *Figure: 3.31c*

Change in Quantity Supplied and Change in Supply

Change in Quantity Supplied

This is a decrease or an increase in the quantity supplied due to a change in the price of a commodity only. Other factors such as state of technology, cost of production and climate remain constant.

Change in quantity supplied involves movement along the same supply curve, for example, at a price 0P1 quantity supplied is 0Q1, at price 0P2 quantity supplied is 0Q4.

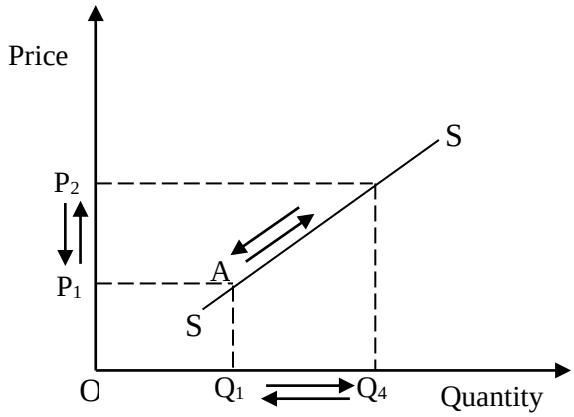


Figure: 3.32 Change in quantity supply

In figure 3.32 above a change in price from $0P_1$ to $0P_2$ results into an increase in the quantity supplied from $0Q_1$ to $0Q_4$ and a change in price from $0P_2$ to $0P_1$ results into a decrease in the quantity supplied from $0Q_4$ to $0Q_1$. An increase and decrease in price

from P_1 to P_2 and $0P_2$ to P_1 respectively results into a movement along the same supply curve from A to B and B to A accordingly.

Change in Supply

This is the increase or decrease in quantity supplied due to change of any factor other than the price of a commodity. Factors which cause change in supply are such as climatic conditions, taxation, peace and security, technology etc.

☞**Note:** Change in supply involves a shift to a new supply curve

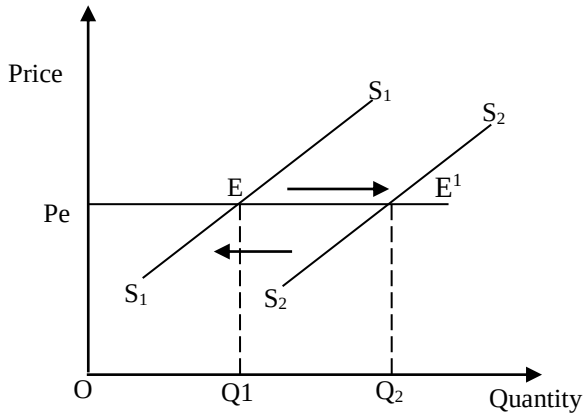


Figure: 3.33 Change in supply

In figure 3.33, a change in any supply factor like improvement in technology can cause a shift in the supply curve from S_1S_1 to S_2S_2 at the same level of price 0P1. Also a change in another supply factor like increase in cost of production can cause a shift in the supply curve from S_2S_2 to S_1S_1.

Regressive Supply (Exceptional Supply)

Regressive supply is an exceptional supply where quantity supplied decreases over a certain period when price is higher; a specific example is a supply of labour whereby a rise in wages may result into increase in absenteeism from work because workers at a certain point in time prefer leisure after long hours of working.

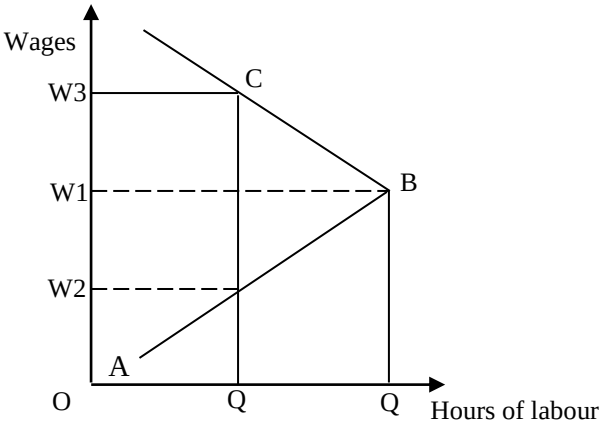


Figure: 3.34 Regressive supply of labour

In figure 3.34 above, from point A to B, quantity of labour supplied increases as wages increase. From point B to C labour supply starts to decrease because workers are not willing to work long hours even at a higher level of wage W3. Therefore regressive supply curve is the part of the supply curve from point B to C.

Supply Function

This is a mathematical relationship between quantity supplied and price.

Qs = f (p)

Where

Qs = Quantity supplied

f = function of

p = price

By using a mathematic equation of y = mx + c, we can express a supply function as Qs = M (p) + c, where Qs = Quantity supplied

m = slope of a supply function

p = price, c = constant.

Example given Qs = 2p + 10, Assuming price ranges from 0-10, various quantities supplied can be calculated and expressed in terms of supply schedule as shown in table 3.17. below

Price (Tshs)	**Quantity (kg)**
0	10
1	12
2	14
3	16
4	18
5	20
6	22
7	24
8	26
9	28
10	30

By using the supply schedule above the supply curve can be drawn as shown in figure 3.35

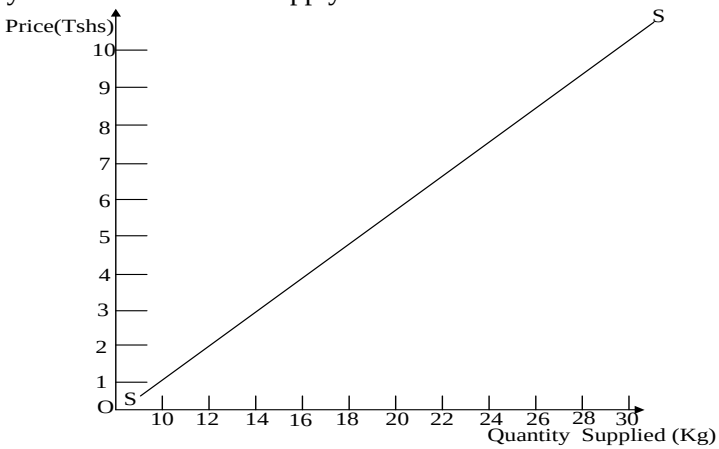


Figure: 3.35 Supply curve

☞**Note:** A supply function has a positive slope because of the positive relationship between price and quantity supplied.

Inter-Related Supply

This shows the relationship between supply of commodities as a result of change in price and supply of one of their related commodity.

Types of Inter-Related Supply

- *Competitive supply:* This happens when different commodities compete in the use of certain resources in the process of production. In this case, if production of one commodity is increased it would mean fewer resources remain for the production of other commodities. For example, if more land is used for production of cash crops it would mean that a smaller land area remains for the production of other crops especially food crops. Competitive supply also applies to substitute goods like coffee and tea. When the price of one of the commodities, say, coffee increases it will result into a decrease in the supply of tea. Likewise a decrease in the price of coffee will result into a decrease in the supply of coffee but to an increase in the supply of tea. This can be expressed in a form of a schedule and a curve as follows:-

Table 3.18

Price of coffee (Tshs)	**Quantity of tea (Kg)**
2	14
4	12
6	10
8	8
10	6
12	4
14	2

Table 3.18 above, shows that as the price of coffee increases the quantity of tea supplied decreases, the reason is that the two commodities are in competitive supply hence an increase in the supply of one of the commodities, due to increase in its price will lead to a decrease in the supply of the other.

The above schedule can be presented in a form of a curve as shown in figure 3:36 below.

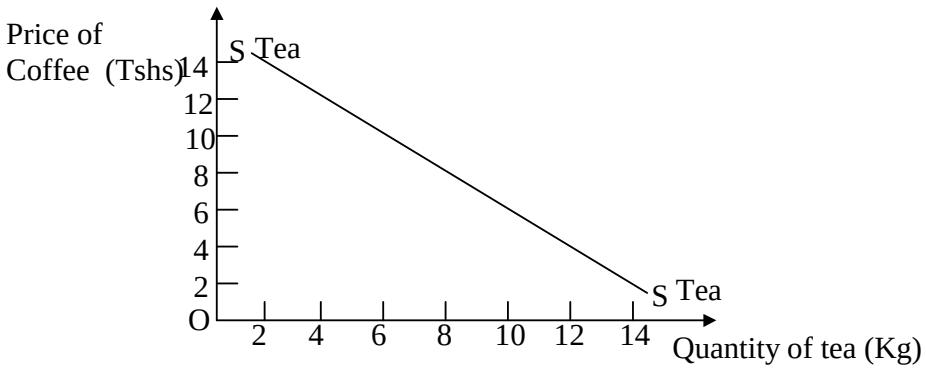


Figure: 3.36 Competitive supply

Figure 3.36 above, shows that as the price of coffee increases less quantity of tea is supplied.

- *Composite supply:* This is the total supply of two goods, which are substitutes to one another. For example, the total supply of coffee and tea, total supply of blue band and tan bond etc.
- *Joint supply:* This is when some goods are produced together or they have a common process of production. These goods are said to have joint supply. The supply of such goods is increased or decreased simultaneously. For example, when the supply of milk is increased the supply of butter, cheese and cream increases, when the supply of cassava is increased the supply of kisamvu is also increased. When the supply of crude oil increases the supply of diesel, engine oil and petrol increase, when the supply of meat increase the supply of hides increases etc.
  This can be expressed by the use of supply schedule as follows:-

Table 3.19

Price of meat (Tshs)	**Quantity of hides (kg)**
10	5
20	10
30	15
40	20
50	25
60	30
70	35

The above schedule can be presented in a form of a curve as follows:

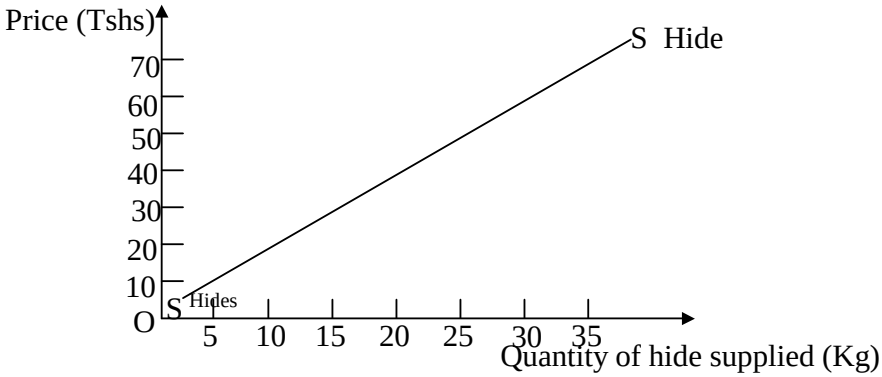


Figure: 3.37 Joint supply

In figure 3.37, when the price of meat increases more quantities of meat are supplied leading to an increase in the supply of hides because the two commodities are supplied together. An increase in the supply of one due to the increase in its price leads to the increase in the supply of another.

Elasticity of Supply

This is the degree of responsiveness of supply of a commodity due to change in the price. Elasticity of supply can be expressed by percentage or formula method.

Percentage method:

$$\textit{Elasticity of Supply} = \frac{\%\ \textit{change in quantity sup ply}}{\%\ \textit{change in price}}$$

Formula method:

$$\textit{Elasticity of Supply} = \frac{\Delta QDs}{\Delta P} \times \frac{Po}{Qo}$$

Where;
$\Delta\ Qs = Qn - Qo$
$\Delta\ P = Pn - Po$Pn - Po
Po = Original price
Pn = New price
Qn = New quantity supplied
Qo = Original quantity supplied

For example;
When the price of an orange is Tshs 4, the quantity supplied in the market is 20 oranges but when the price rises to Tshs.5, the quantity supplied increases to 30 oranges. Calculate elasticity of supply
Given Pn = Tshs.5, Po = Tshs.4, Qo = 20 oranges, Qn = 30 Oranges.

Solution

$$E\ s = \frac{\Delta Qs}{\Delta P} \times \frac{Po}{Qo}$$

Where;
$\Delta\ Qs = Qn - Qo$
$\Delta\ P = Pn - Po$
ES = Elasticity of supply
Po = Original price
Qo = Original Quantity

$$Es = \frac{\Delta Qs}{\Delta P} \times \frac{Po}{Qo}$$

$$Es = \frac{30-20}{5-4} \times \frac{4}{20}$$

$$Es = \frac{10}{1} \times \frac{4}{20}$$

$$Es = \frac{40}{20}$$

Es = 2 (Elastic supply)

Types of Elasticity of Supply

- *Elastic supply:* Supply is said to be elastic when a percentage change in price brings a larger proportionate change in the quantity supplied. Numerically, the size of the elasticity is greater than one (Pe > 1).

Table 3.20

Price (Tsh)	Quantity (kg)
3	10
4	15

Find elasticity of supply

$$Es = \frac{\Delta Qs}{\Delta P} \times \frac{Po}{Qo}$$

$$= \frac{15-10}{4-3} \times \frac{3}{10}$$

$$= \frac{5}{1} \times \frac{3}{10}$$

$$= \frac{15}{10}$$

$$= \frac{3}{2}$$

ES = 1.5

- *Inelastic supply:* Supply is said to be inelastic when a percentage change in price brings a smaller percentage change in quantity supplied. Numerically the measure is less than one but greater than zero 0<Es<1

Table 3. 21 Supply schedule

Price (Tshs)	Quantity supplied (kg)
8	6
20	10

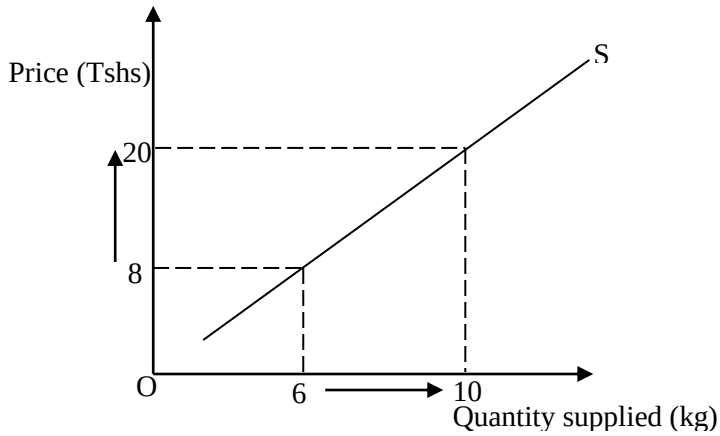


Figure: 3.38 inelastic supply

Examples of goods which have inelastic supply are agricultural products and other goods which take a very long time to produce.

Elasticity of supply of the above curve

$$Es = \frac{\Delta Qs}{\Delta P} \times \frac{Po}{Qo}$$

$$= \frac{10-6}{20-8} \times \frac{8}{6}$$

$$= \frac{4}{12} \times \frac{8}{6}$$

$$= \frac{32}{72}$$

$$= \frac{8}{18}$$

$$= \frac{4}{9}$$

$\therefore$ *Elasticity of Supply is* $\frac{4}{9}$

- *Unitary elastic supply:* Elasticity of supply is said to be unitary if a proportional change in price brings an equal proportionate change in the quantity supplied. Numerically the measure is equal to one.

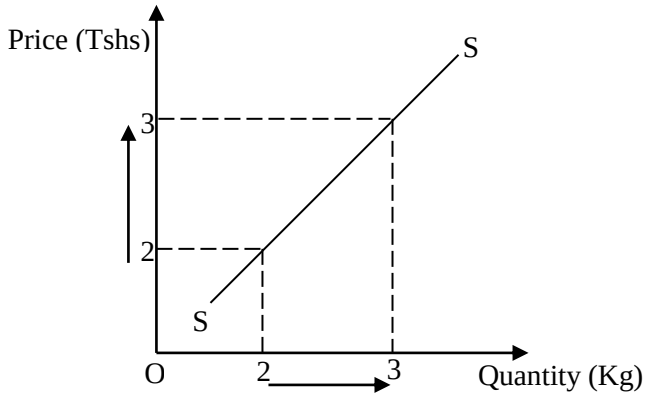


Figure: 3.39 Unitary elastic

Elasticity of supply

$$Es = \frac{\Delta Qs}{\Delta P} \times \frac{Po}{Qo}$$

Where;

ΔQs = *Change in Supply*

ΔP = *Change in price*

Qo = Old quantity

$$Es = \frac{3-2}{3-2} \times \frac{2}{2}$$

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

= 1 *(Unitary elastic)*

☞ **Note:** Unitary elasticity of supply is equal to one.

- *Perfectly elastic supply:* Elasticity of supply is said to be perfectly elastic if at the same level of price the quantity supplied changes. Numerically, the measure is undefined.

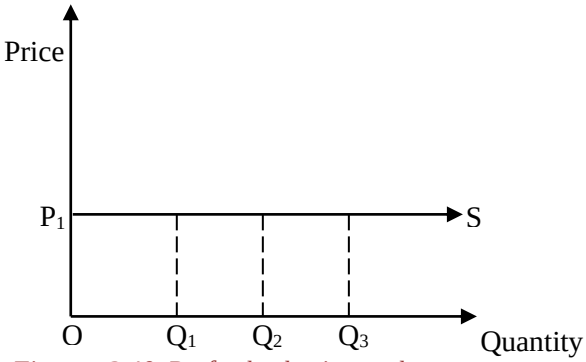


Figure: 3.40 Perfectly elastic supply

Example

Given the following supply schedule

Table 3.22

Price(Tshs)	**Quantity supplied (Kg)**
4	8
4	18

$$Es = \frac{18-8}{4-4} \times \frac{4}{8} = \frac{10}{0} \times \frac{4}{8} = \frac{40}{0} = \infty \text{ (Undefined)}$$

- *Perfectly inelastic supply:* Elasticity of supply is said to be perfectly inelastic when a change in price brings no change in the quantity supplied. Numerically the measure is equal to zero.

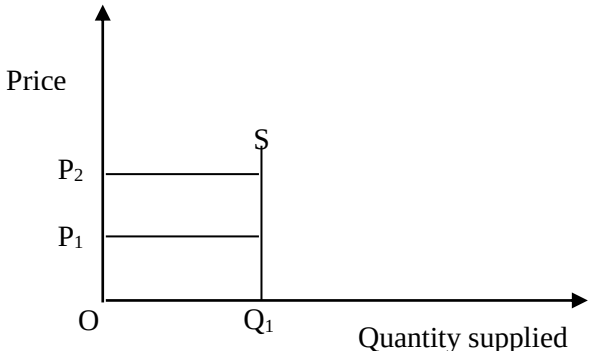


Figure: 3. 41 Perfectly inelastic supply

Table 3.23 A supply schedule

Price (Tshs)	**Quantity supplied (kg)**
8	12
10	1

$$\textit{Elastic of Supply} = \frac{12-12}{10-8} \times \frac{8}{12}$$

$$= \frac{0}{2} \times \frac{2}{3}$$
$$= \frac{0}{6}$$
$$= 0$$

Factors Influencing Elasticity of Supply

- *Cost of production:* The commodities which have too high cost of production have inelastic supply, even when their prices increase suppliers cannot increase quantity supplied because of the high cost of production. On the other hand, when the cost of production is low, the supply will be more elastic such, in case of price increase, suppliers will manage to increase the quantity supplied by a large amount.
- *Time:* Those commodities, which take short period to be produced, for example, consumers goods which are manufactured, like soft drinks, have inelastic supply, producers can quickly adjust to changes in price. On the other hand commodities which take a very long time to be produced. For example, cash crops like coffee, sisal, cocoa etc have inelastic supply because their production takes a very long time. Therefore, producers cannot change quickly quantity supplied in case of price changes.
- *State of technology:* If production process uses advanced technology then supply of a commodity will be elastic. In case of a price fall producers can produce larger quantity of output in a short period of time. But poor technology limits the increase in production hence the supply of a commodity could be inelastic even when the price increases producers cannot increase the quantity supplied by a large amount in a short period of time.
- *Number of firms in the market:* If the number of firms in the market is small supply elasticity will be inelastic and if the number of firms in the market is small supply elasticity will be elastic.
- *The length of the production period:* When firms are able to convert input such as raw materials into finished goods for sale in just few hours or days, supply will usually be more elastic than when several months or years are involved as in many types of agricultural production.
- *The existence of spare capacity:* If a firm possesses spare capacity and if labour and capital are readily available, it is usually possible to increase production quickly in the short run hence supply become elastic but if a firm has limited capacity in terms of spare capacity it cannot adjust quickly its supply hence the supply elasticity will be less elastic.
- *The ease of factor substitution:* Supply will tend to be relatively elastic if firms can use different combinations of labour and capital to produce a particular level of output but supply will be less elastic when technical combinations require that factors of production are employed in a fixed ratio. If firms produce a range of products and are able to switch labour or machines from one type of production to another then the elasticity of demand will be elastic.

Importance of the Concept of Elasticity of Supply

- *Elasticity of supply determines the effect of change in demand on price.*

- If supply is elastic an increase in demand will bring about a big increase in the quantity supplied but only a small increase in price
- If supply is fairly inelastic an increase in demand will bring about a small increase in the quantity supplied hence a big rise in price.

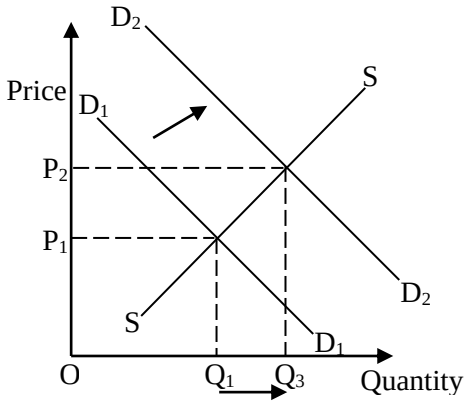


Figure: 3.42a (i) Case A

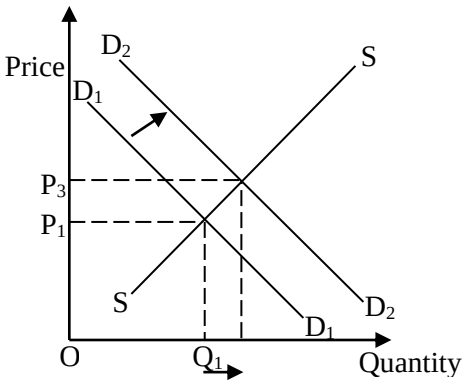


Figure: 3.42b (ii) Case B 3.42b

In case A- supply is elastic. An increase in demand from D_1D_1 to D_2D_2 causes a large increase in quantity supplied from OQ_1 to OQ_3 hence a small increase in price from OP_1 to OP_2.

In case B supply is inelastic. An increase in demand from D_1D_1 to D_2D_2 brings about a small increase in quantity supplied from OQ_1 to OQ_2 hence a large increase in price from OP_1 to OP_3.

- *Correcting deficit balance of payments:* Elasticity of supply is important in policies concerning correction of deficit balance of payments. When elasticity of supply and demand for export is elastic a country may devalue its currency in order to increase the demand for exports and earn more foreign currency.

Run periods in the supply of the commodity

Time element is very important for supply to adjust itself fit into the changes in price.

The time periods under which supply adjust itself due to changes in price are as follows:-

(i) *Very short run or the market period:* This is the period in production where firms are completely unable to increase output in the production process such that firms can only bring to the market only what is in stores in such a short period of time. For example, a street trader might arrive one morning at his stall with a truck load of soft drinks which may not last until the following day. Once at his stall, the trader is unable either to increase his available supply within the market period or very short run to meet any unexpected surge in demand, or to take the soft drink off the market for sale at a later date.

(ii) *Short run:* Is the period in production over which the input of at least one factor of production cannot be increased. In this period, a firm may increase output by increasing only units of a variable factor. For example a manufacturing firm wishing to increase its output is unable to have a bigger factory, built overnight and

so in the short run can only produce more by employing more of its variable factor such as labour, raw materials and fuel.

- A factor of production which can be increased is called a variable factor while a factor of production which cannot be increased is called a fixed factor. In the short run the supply of a commodity may be fixed since it takes time for supply to adjust itself to changes in demand, thus in the short run an increase in demand may result into a steep rise in price.
- The actual length of a short-run period does not correspond precisely to any particular time period, it varies from industry to industry and from one firm to another firm, some firms complete the period faster than other firms.

(iii) *Long run:* A long run is the period of time over which the input of all factors of production can be increased and a firm can adjust its supply of output due to the changes in demand.

(iv) *Very long period of time:* Is a period of time when the firm can expand in size and also change technology to produce new or high quality products, the very longtime also enables a firm to carry out research and development**.**

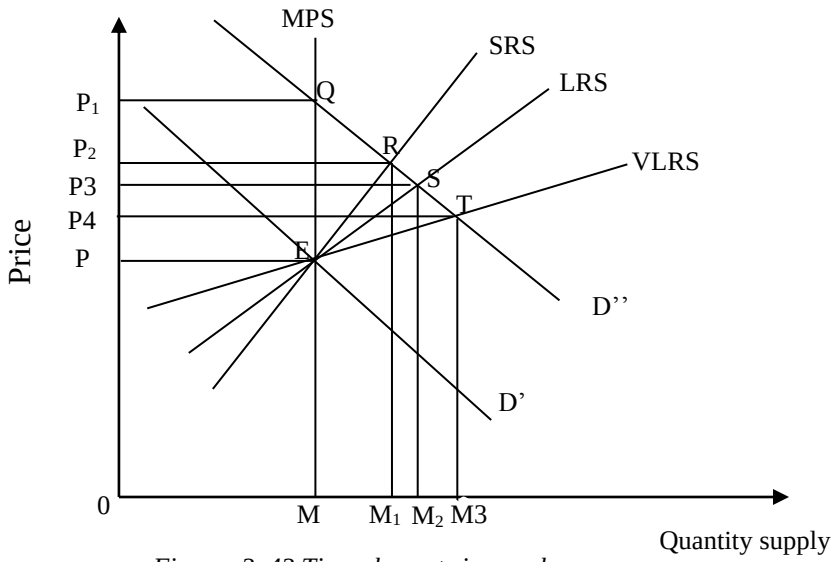


Figure: 3. 43 Time elements in supply

MPS = Market period/very shortrun
SRS = Short run
LRS = Long run
VLRS = Very long run.

In figure 3.44 above originally demand curve DD' and market period supply curve intersect at point E and price OP is determined. Suppose that there is a once for all increase in demand from DD to D''D''. Supply cannot increase in the market period hence remains the same at OM. Market period supply curve MPS intersects the new demand curve D''D'' at point Q, the same output OM .

Thus, the market price sharply rises to OP_1. Short run supply curve SRS intersects the new demand curve D''D'' at point R, output OM1, The shortrun price will therefore be OP_2 which is lower than the new market price OP_1. As a result of the

longrun adjustment the price will fall to $0P_3$, at output OM2 at which the longrun supply curve LRS intersects the demand curve D''D'' at point S. Price will further fall to $0P_4$ at output OM3 at which the longrun supply curve VLRS intersect demand curve at point T. The new longrun price $0P_4$ is lower than the new market price OP_1,OP_2, OP_3 but will be higher than the original price OP which prevailed before the increase in demand took place. This is so because we are assuming a increasing cost industry.

If the industry is subject to decreasing constant costs, the longrun price will be equal to the original price. Further, if the industry is subject to decreasing costs, the longrun price will be lower than the original price. It follows from above that the price which prevails in the market depends upon the period under consideration. It is clear that time plays an important role in the determination of price

Equilibrium Price

This is the level of price at which the quantity supplied is equal to the quantity demanded. Quantity sold at equilibrium price is known as equilibrium quantity. The price of any commodity in a free market system is determined by the forces of demand and supply. If the equality between demand and supply does not exist then due to competition either between buyers and sellers price will change. As a result of this, demand and supply will be equal to each other. This can be explained by the help of the following schedule.

Table 3.24 A combined demand and supply

Price	**Demand (units)**	**Supply (Unit)**
50	10	70
45	20	60
40	30	50
35	40	40
30	50	30
25	60	20
20	70	10

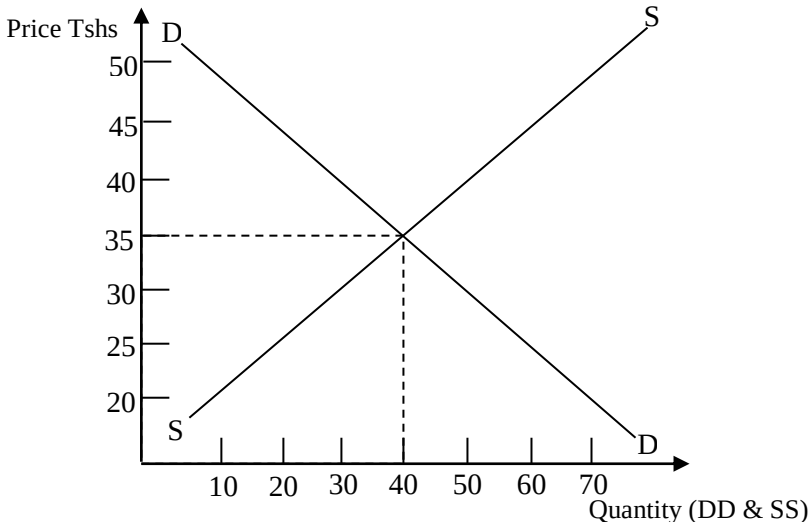


Figure 3.44 Equilibrium price

In figure 3.44 above, equilibrium price is Tshs.35 and equilibrium quantity is 40kg.

Effects of Increase or Decrease in Price from the Equilibrium.

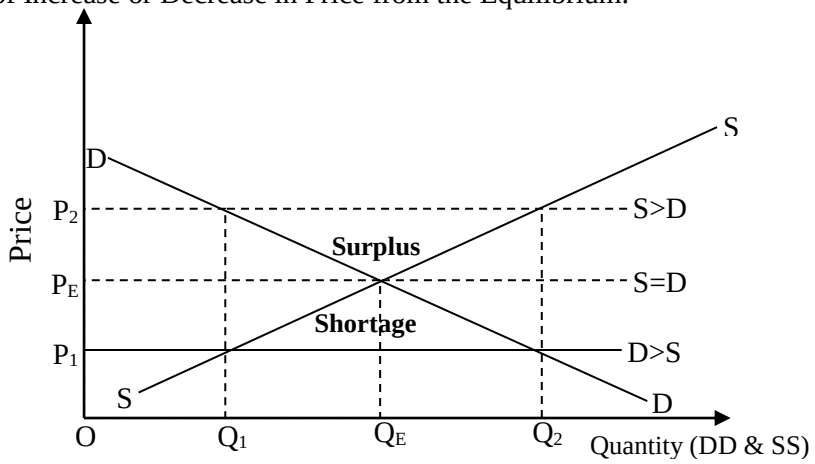


Figure 3.45 Effects of Increase or Decrease in Price from the Equilibrium

In figure 3.45 above

- If the price increases above $0P_E$ to, let say $0P_2$, the quantity demanded will decrease from $0Q_E$ to $0Q_1$ while the quantity supplied will increase from $0Q_E$ to $0Q_2$ and quantity supplied will be greater than quantity demanded. There will be a surplus. Therefore suppliers will have to decrease supply from 0Q2 to 0QE so as to bring price back to $0P_E$. And also quantity demanded to 0QE.
- If the price decreases below $0P_E$ to, let say, $0P_1$ quantity demanded will increase from $0Q_E$ to $0Q_2$ while quantity supplied will decrease from $0Q_E$ to $0Q_1$; hence there will be a shortage.
  Therefore consumers will have to decrease the quantity demanded from $0Q_2$ to $0Q_E$ which will bring back the price to the equilibrium 0PE and supply to the equilibrium quantity 0QE.

Change in Conditions of Demand

When any condition of demand changes example an increase in income, it will result to an increase in demand and an increase in demand will cause a rise in price assuming supply remain constant. On other hand when income decreases demand also decreases resulting into a fall in price assuming supply is constant. Change in demand is shown in figure 3.46.below.

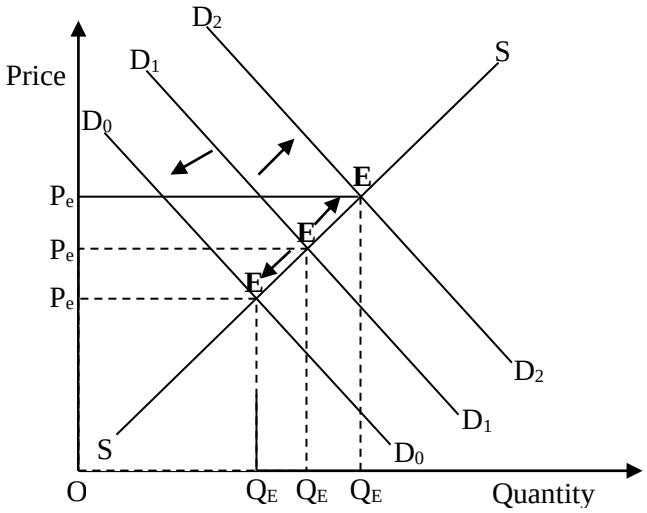


Figure: 3. 46 Change in conditions of demand

In figure 3.46 above, D_1D_1 shows a demand curve before change in income where demand is equal to supply at equilibrium price Pe and equilibrium quantity Q_E. After an increase in income demand increased from D_1D_1 to D_2D_2 leading to a new equilibrium point E". On other hand a decrease in income has led to a decrease in demand from D_1D_1 to D_0D_0. and a new equilibrium point E^1.

Change in Conditions of Supply

The equilibrium price will persist until there is a change in the conditions of supply if any supply conditions change example technological innovations supply will increase and if demand is constant then price will fall but if supply decrease due to increase in cost of production price will increase if demand has remained constant. This is shown in figure 3.47 below.

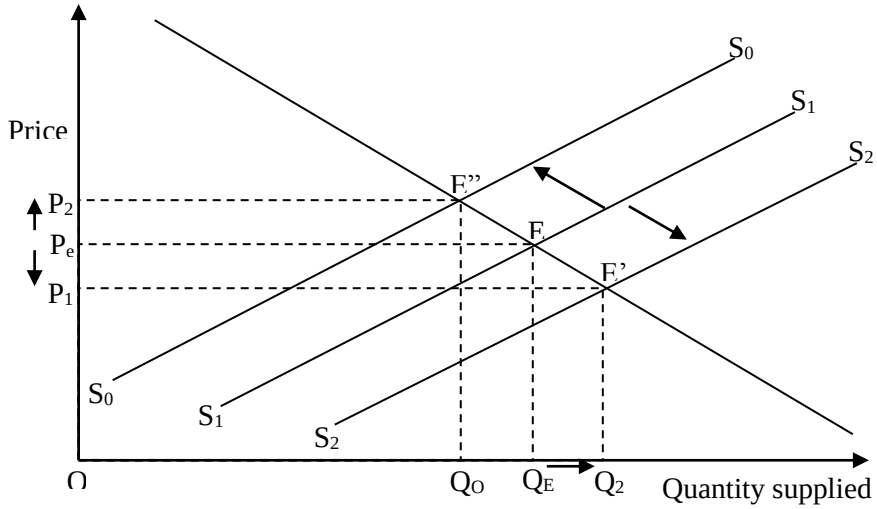


Figure: 3.47 Change in conditions of supply

In figure 3.47 above, demand and supply curves intersect at point E where the equilibrium price is 0Pe, when supply increase from S_1S_1 to S_2S_2 it lead to a movement to a new equilibrium point E^1 also on the other hand when supply decrease from S_1S_1 to S_0S_0 price will increase from $0P_E$ to $0P_2$ and a new equilibrium price will be established at point E^{11}.

Laws of Demand and Supply

There are seven laws of demand and supply.

The First Law

This law states that under *ceteris paribus* conditions the lower the price of a commodity the greater the quantity demanded.

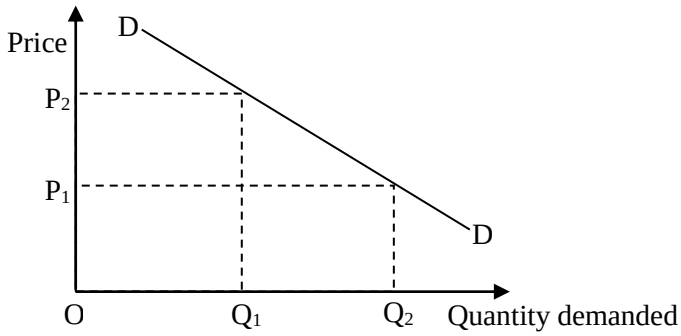


Figure: 3.48 Law of demand

In figure 3.48 above, at lower price $0P_1$ more quantity of a commodity is demanded at $0Q_2$ while at higher price $0P_2$ less quantity is demanded at $0Q_1$.

Second Law

This law states that, under ceteris paribus conditions, the higher the price of a commodity the greater the quantity supplied and the lower the price the lower the quantity that will be supplied.

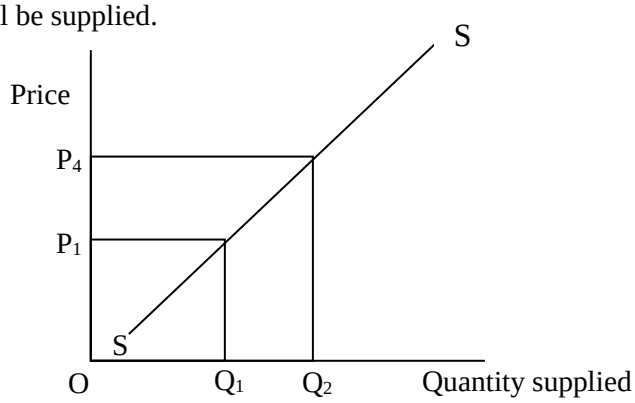


Figure: 3.49 Third law

In figure 3.49 above, at a higher price $0P_4$ more quantity of a commodity is supplied at $0Q_2$ while at a lower price $0P_1$ less quantity is supplied at $0Q_1$.

Third Law

State that, at the equilibrium price the quantity demanded is equal to the quantity supplied.

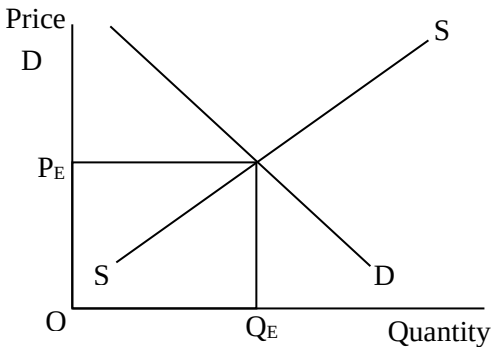


Figure: 3.50 Equilibrium price-third law of demand and supply

In figure 3.50 above, at price P_E, quantity supplied is equal to quantity demanded.

The Fourth Law

States that, an increase in demand will lead to an increase in price that will result into increase in quantity supplied assuming that supply remains constant.

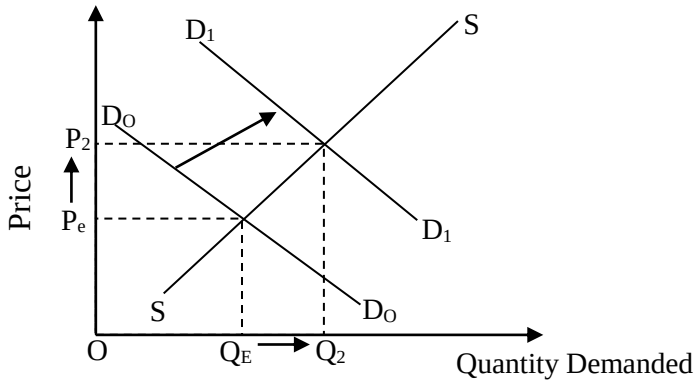


Figure: 3.51 Fourth law – increase in demand

In figure 3.51 above, an increase in demand from DoDo to D_1D_1 has led to an increase in price from p_e to p_2.

The Fifth Law

States that, a decrease in demand will lead to a decrease in price that will result into a decrease in quantity supplied, assuming that supply remains constant.

In figure 5.52 below, a fall in demand from D_1D_1 to D_0D_0 has led to a fall in price from P_E to Po hence decrease in the quantity supplied from 0QE to 0Q1.

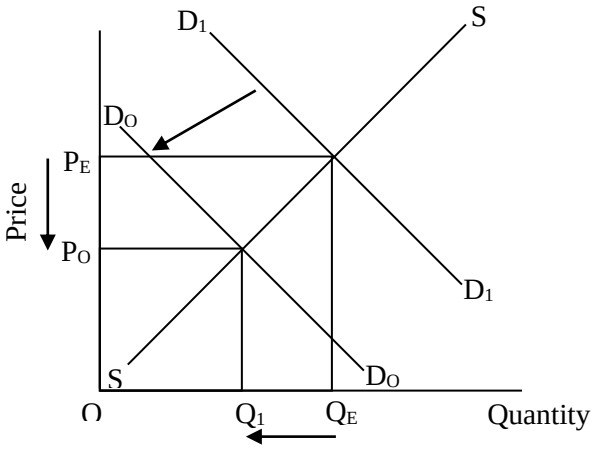


Figure: 3.52 Decrease in demand

Sixth Law

States that, an increase in supply will lead to a decrease in price that will result into an increase in the quantity demanded.

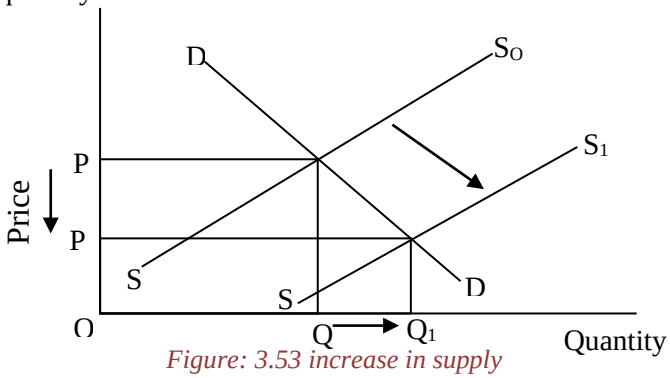


Figure: 3.53 increase in supply

In figure 3.53 above, an increase in supply from S_OS_O to S_1S_1 has caused a decrease in price from $0P_E$ to $0P_1$ hence increase in quantity demanded from 0QE to 0Q1.

The Seventh Law

States that, a decrease in supply will lead to an increase in price that will result into a decrease in the quantity demanded.

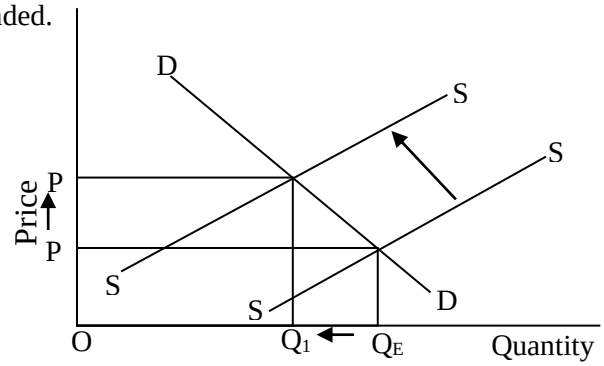


Figure: 3. 54 Decrease in supply

In figure 3.54 above, a fall in supply from S0S0 to S1S1 leads to a rise in price from 0Pe to 0P1 thus to a fall in the quantity demanded from 0QE to 0Q1.

Equilibrium Price and Quantity given Demand and Supply Functions

Demand function

QD = -M (P) + C
Where QD = Quantity demanded
M = slope
P = price
C = constant

Supply Function

Of the form
QS = M (P) + C
Where
QS = Quantity supplied
M = Slope
P = Price
C = Constant
From these two functions, an equilibrium price can be calculated by equating the two equations.

Example 1

From the following demand and supply functions find an Equilibrium price and quantity.

Demand function
QD = 13 – 3P

Supply Function
QS = 8 + 2P

Equilibrium Price
Solution

Equilibrium Price
QS = QD
13 – 3P = 8 + 2P
13 – 8 = 2P + 3P
5 = 5P

Equilibrium Price
= 1

Equilibrium Quantity
Is found by substituting equilibrium price in either a supply or demand function
Qd = 13 – 3(1) = 10
Qs = 8 + 2(1) = 10
Equilibrium quantity = 10

Equilibrium price and quantity can also be calculated by using a table as shown below:

Table 3.25

PRICE(TSHS)	QUANTITY DEMANDED	QUANTITY SUPPLIED
0	13	8
1	10	10
2	7	12
3	4	14
4	1	16

In the above schedule, equilibrium price is Tshs.1 in which quantity supplied is equal to quantity demanded

Example 2

Suppose a market consists of three consumers A, B, and C whose individual demand functions are given below.

A. P = 35-0.5Q
B. P = 50-0.25Q
C. P = 40-2.00Q

(i) Find the market demand function for the commodity
(ii) If the market supply function is given by Q=40+3.5P. Determine the equilibrium price and quantity.

Solution

Since the individual demand function express price as the function of quantity that is if are given inverse demand function we have first to transform them into quantity demanded as function of price, transforming them yields the following demand functions.

A = 70 – 2P

B = 200 – 4P

C = 20 – 0.5P

Market demand function

QD = (70 –2P) + (200 – 4P) + (20 – 0.5)

QD = 70 +200 + 20- (2 + 4 + 0.5)P

QD = 290-6.5P = Market demand function

Given a market supply function

QS = 40 + 3.5P

Equilibrium price is obtained where QS = QD

Therefore, equilibrium price

290 – 6.5P = 40 + 3.5P

Collecting like terms gives

290 – 40 = 6.5P+3.5P

250 = 10P

P = 25 = Equilibrium price.

In order to get equilibrium quantity, we substitute the value of equilibrium price to demand function equation

QD = 290-6.5P

Equilibrium quantity = 290 – 6.5(25) = 127.5
Thus, the equilibrium price is 25 and the equilibrium quantity is 127.5

PRICE MECHANISM

Price Mechanism is defined as.

The system under which economics decisions such as what, how and for whom to produce are made in view of prices of commodities and price of factors of production. It is related to free enterprises economy where resources are privately owned price mechanism functions through prices of commodities which are determined by the forces of demand and supply.

Advantages of Price Mechanism

- *Ideal allocation of resources:* Resources such as land, labour and capital are allocated to the production of commodities which fetch high prices. Price mechanism allocates resources to productions of goods which are profitable, hence efficiency in allocation of resources.
- *Competition:* Price mechanism encourages competition which leads to efficiency in production i.e. resources go to those who can utilize them better and inefficient firms are eliminated hence this competition also encourages improvement in quality.
- *Price mechanism provides incentives to growth:* High prices and high profit encourage innovation and research. Price expectations also encourage investment.
- *Price mechanism helps to answer economic questions:* In a free enterprise it helps to determine what to produce and in what quantity therefore with price mechanism there is no wastage of resources.
- *In a free market economy price mechanism tend to balance supply and demand:* When demand increases price will rise and supply will also rise and when supply rise price will fall causing. a rise in demand hence a balance between supply and demand.
- *Price acts as a criterion of distributing output:* The output produced go to those with the willingness and ability to buy at the going market price.
- *Price mechanism does not require much administrative machinery since it is automatic:* It is also an automatic adjustment of resource allocation in the country.
- *It offers freedom of choice to consumers:* Consumers by expressing their product taste and preferences through market forces. They determine what should be produced by producers.

Disadvantages of Price Mechanism

- *Income inequality:* Because resources and commodities go to those who are able to afford them, the poor are likely to go without commodities, therefore, price mechanism favours especially the rich people.
- *Consumers and sellers are always ignorant:* In a market economy consumers are ignorant about the whole **part** of the market **as** regards to quantity and prices of products due to imperfection of the market.
- *Unemployment:* Because of the free entry and exit in the market and competition may cause collapse of some firms.
- *Price mechanism may lead to high social cost and production of harmful products:* This is due to the fact that the government does not interfere with production hence

producers become less concerned with the side effects of the production process such as pollution.

- *Market mechanism cannot efficiently produce public goods:* Price mechanism doesnot efficiently provide public goods such as defense and security roads because it is difficult to charge price on these goods for example it is impossible to charge citizens a certain price for the service of using public roads or the defense and security they get from defense and security forces of a country.
- *Welfare goods are ignored:* For profit motives producers tend to produce luxurious expensive goods and ignore welfare goods because such goods are less profitable.
- *Social cost or negative externalities are dominant:* When resources are allocated by price mechanism producers for the motive of increasing output and maximizing profit they cause negative externalities or social cost like environmental pollution due to the application of poor technology and over exploitation of the resources.

How to Check the Side Effects of Price Mechanism

The government can minimize the side effects of price mechanism by the following methods:

- Imposing heavy tax and penalties to industries that cause negative externalities such as pollution.
- Taxing the rich and subsidizing the poor.
- Nationalizing industries.
- Anti-monopoly legislation.
- Establishing consumer associations to protect consumer's rights.
- Provision of welfare goods.
- Government planning.
- Control of unemployment problem by encouraging labour intensive technique.

Price Floor (Support Price or Minimum Price)

This is the minimum price fixed by the government above the equilibrium price to protect the suppliers or the producers when the government feels or think that the market price is too low to generate enough profit to the producers or encourage production of a certain commodity.

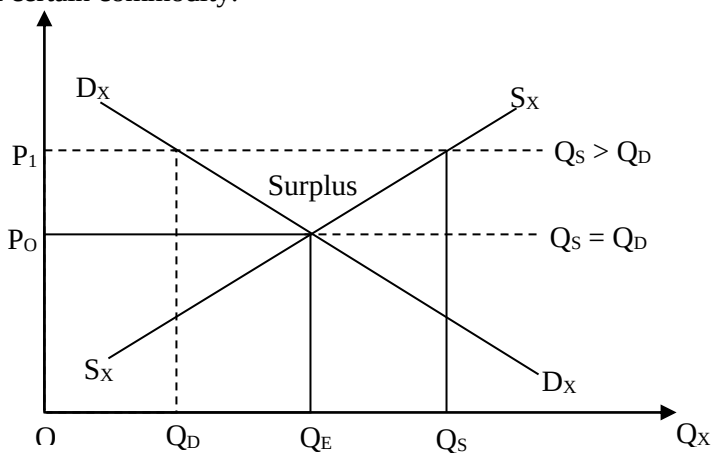


Figure 3.55: Price floor (Minimum price)
In figure 3.55
P_x = Price of commodity x
Q_x = Quantity of commodity x
D_xD_x = demand curve for commodity x
S_xS_x = supply curve for commodity x
P_O = equilibrium price (minimum price)
Q_D = Quantity demanded
Q_S = Quantity supplied
P_1 = Minimum Price

Effects

If the government fix price above the equilibrium (price floor) suppliers will be encouraged to supply more but quantity demanded will decline due to the increase in price. As a result, supply will exceed demand and there will be surplus. This will force suppliers to decrease price towards the equilibrium price.

Maximum Price (Price Ceilings)

This is the maximum price set by the government, below the equilibrium price to protect consumers when the government thinks that the market price is too high to be for the consumers to afford.

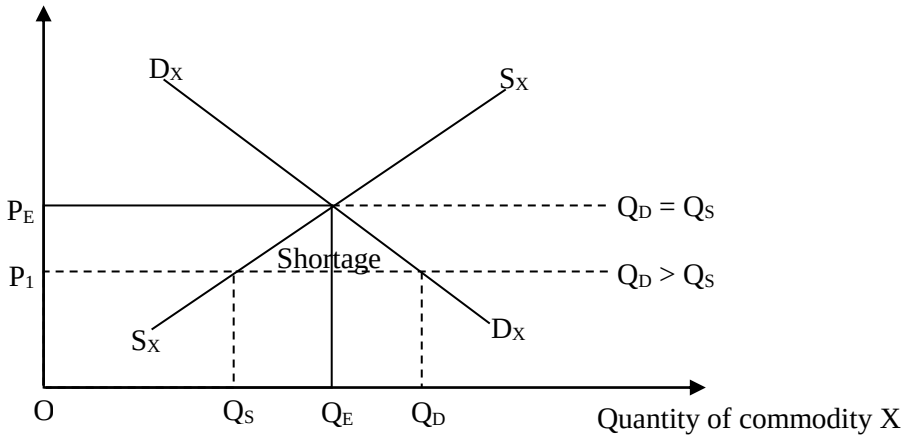


Figure: 3.56 Maximum price

In figure 3.56 above,
Where S_X = Supply curve for the commodity x.
D_X = Demand curve for the commodity x.
P_E = Equilibrium price.
Q_E = equilibrium quantity.
Q_S = quantity supplied of commodity x.
Q_D = quantity demanded of commodity x.
P_I = Price set by the government i.e. maximum price.

Effects

- Consumers will be encouraged to buy more because of the low price.
- Suppliers will be discouraged to sell more because of the low price.

- There will be shortage of commodity because of the decrease in supply and an increase in demand.
- The government will be forced to ration the commodity.
- Social unrest may occur.
- The government will be forced to raise the price back to the equilibrium.

Consumer Surplus

This is the difference in the amount a consumer is willing and able to pay for the commodity and the actual market price. For example, suppose a consumer is willing and able to pay TShs. 3000/= for commodity X but the actual price is 2000/= therefore, the consumer surplus is 3000/= - 2000/= 1000/=

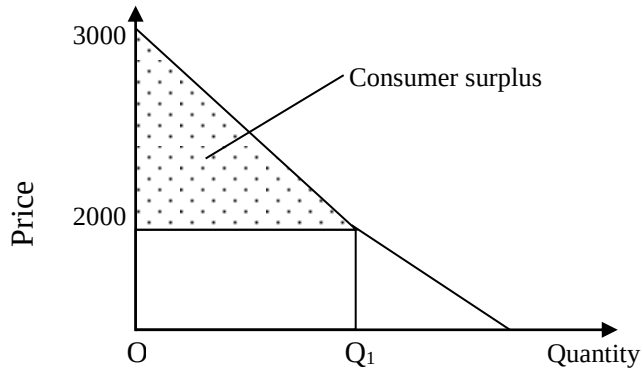


Figure: 3.57 Consumer surplus

In figure 3.57 above, a consumer is able and willing to pay 3000/= but the commodity is sold at 2000/=, therefore the consumer surplus is equal to 1000/=.

TOPIC FOUR

CONCEPT OF THE MARKET

Definition of a market

A market can be defined as follows:

- An area or place where buyers and sellers meet to transact, that is, to exchange goods and services. Examples of market in East Africa are the Kariakoo market in Dar es Salaam Tanzania, and Gikombaa market in Nairobi Kenya.
- A situation or condition in which buyers and sellers transact or exchange goods and services. For example, trade through e-commerce where by people can exchange goods through the Internet.
- A market can mean demand for a commodity. For example, an increase or decrease in the demand for a commodity can mean the fall or rise in the market of that commodity.
- Market can mean a situation in which price is determined or where prices of different commodities are determined through forces of demand and supply.

Essentials or necessary conditions for the existence of a market

The conditions for the existence of a market are as follows:

- *Existence of commodities:* For a market to exist there must be commodities to be exchanged. Examples of commodities are consumer goods like foodstuffs, clothes, radio, TV, stationery, etc.
- *Existence of buyers and sellers:* For a market to exist there must be buyers to buy the goods and sellers to sell the goods. Without buyers and sellers exchange cannot take place consequently there will be no market.
- *An area or region:* For a market to exist there must be a place or specific area where trading activities take place.
- *Contact between buyers and sellers:* Buyers and sellers must be in contact in order for exchange to take place in a market. Contact can be physical or by means of communication such as telephone.
- *One price for every commodity in a specific period of time:* In a market, one price for every commodity must prevail at a specific period of time. As a result, interaction of market forces of demand and supply.

Functions of a Market

The main functions of a market are as follows:

- *To facilitate transactions*: A market facilitates the process of buying and selling goods and services by providing a place or situation in which buyers and sellers meet or contact in order to exchange goods and services.
- *Source of supply*: The market is a source for the supply of goods and inputs to consumers and producers respectively. It is only in the market where people obtain much of the goods and services they need. Likewise producers can easily obtain input like raw materials, spare parts, fuel etc.

- *Contact between buyers and sellers*: A market provides a ground for buyers and sellers to have contact with one another in the process of exchanging goods and services.
- *Price stability*: Prices are determined in the market by forces of demand and supply, which help to stabilize the price. For example when the demand for the commodity rises suppliers in the market will be motivated to supply more so as to get more profit due to increase in demand. This will bring back price towards the equilibrium.
- *Increasing production*: Existence of a market helps to increase the demand for a commodity. A great demand for a commodity induces suppliers to supply more quantity of the commodity in that way the availability of that market helps to increases production.

Extent of the Market

The extent of the market means the size of the market. The market can be small or large depending on the following factors:

- *Extent of demand and supply*: Commodities, which have a greater demand their market, is wider unlike commodities whose demand is low. In urban areas where the demand for most commodities is high the size of most of the market is large, for example, the Kariakoo market in Tanzania is the largest market in the country due to large demand in the city as a result of large size of population in the city.
- *Means of transport and communication*: The process of buying and selling depends much on the available means of transport and communication means in a particular place. In places where there are efficient means of transport and communication exchange processes are carried out so smoothly leading to expansion of the market. Conversely in areas where the means of transport and communication are poor exchange becomes very difficult and the market size becomes narrow. A good example is in major cities where major means of transport and communication are so advanced leading to expansion in the size of the market unlike in rural areas where infrastructure is very poor hence exchange is very difficult and the sizes of the rural markets are very small or narrow.
- *Peace and security*: In areas where there is peace and security, economic activities are carried out confidently without any problem leading to flourishment in exchange process and widening in the size of the market, unlike in areas where looting and plundering are predominant due to insecurity. For example, in Dar es salaam region, due to fear of muggers or robbers rich people cannot go to places like Tandale and Manzese with very large amount of money, instead opt for supermarket shopping centres like Imalaseko and shoppers' plaza where security services are provided.
- *Banking and monetary services*: Many trading transactions depend on banking facilities such as depositing of money, means of payments such as cheque, advances and loans, transfer of funds, exchange of currencies, etc. In this case advanced banking facilities help to increase trading facilities hence the size of the market. For example in Dar es salaam there are many banks and other financial institutions which provide the wide range of services to businesspeople who are engaged in the process of buying and selling leading to growth of many markets around the center as opposed to rural areas or small urban areas where there are no banks or small

financial institutions. This make making it very difficult for traders to obtain financial assistance or to engage in modern business which needs advanced modes of payments like payment by cheque, letter of credit, bill of landing, traveler's cheque, etc. This hinders growth of size of the market.

- *Government policy*: In some instances for example during food shortage or for the purpose of protecting domestic industries the government may restrict movement of goods from one area to another area, this may lead into the decline in the level of trading activities and the size of the market. On the other hand, the government may decide to relax trading policies in order to stimulate trade and production of certain commodities for specific economic and social objective leading to growth of the market. For example in Tanzania in the late 1970's and early 1980's the government put much restrictions on movement of goods especially foodstuffs causing scarcity of goods in the markets and falling in the size of market for the foodstuffs. But in the late 1980's due to trade liberalization the government permitted free movement of goods from one place to another place including to and from outside the country as result of this policy markets especially in towns have been flourishing with so many consumer goods consequently expansion in the size of most of the markets.
- *Grading*: Consumers prefer commodities, which are sorted in different grades and sold at different prices according to grades. In this case consumers with high purchasing power tend to buy commodities of higher grades while consumers with low incomes tend to buy commodities of lower grades. The demand for higher grades is usually higher than the demand for lower grades, therefore, consumers especially those with high income prefer to do their shopping in markets where goods of higher grades are sold while consumers with low purchasing power prefer shopping in markets where goods of lower grades are sold. For example in Dar es salaam people with higher income prefer going to Kisutu market and along the Samora Avenue where goods of higher grade are sold while people of low income prefer going to Manzese and Tandale where goods of lower grades are usually sold.
- *Packaging*: Goods which are well packed are more preferred by most consumers for hygienic reasons and assurance of the weight of the commodity. Therefore packaging can be a factor for increase in the demand for a commodity hence size of the market.
- *Sanitary condition of the marketing place:* Most of the consumers prefer to shop in areas or markets where sanitary condition of the place is good than in areas where the surrounding is filthy. For example, in Dar es Salaam, markets such as Tandale, Temeke and Tandika have dirty environment which discourage consumers to from going there to buy goods. While in super markets and relatively cleaner markets like Kisutu and Kariakoo the number of consumers has been increasing due to cleaner environment.
- *Location of the market:* A market situated at the center of a city or town attracts more customers than a market located at the periphery of the city. That is why the Kariakoo market in Dar es salaam has more customers than other markets, which are in the outskirts of the city.

Classification of Markets

Markets can be classified depending on the following ways:

1. Market types.
2. Market structure.

Market types

Markets are classified into market types according to what is bought and sold in the market. Under market types there are three types of markets.

(i) *Commodity market:* This is a type of market involving selling and buying of final goods and services, that is, goods that are ready for consumption. For example, a market which sells commodities like shoes, clothes and foodstuffs.

(ii) *Factor market (input market):* This is a type of a market involving selling of factors of production such as machines and raw materials. Examples of input markets are;

- Labour market: This is a type of a market which involves buying and selling of labour at a given wage rate.
- Capital market: This involves the buying and selling of capital goods like machines
- Land market: This is the buying and selling of land at a given price or particular level of rent.

(iii) *Financial market or money market:* This involves selling and buying of financial assets such as security, bonds and treasury bills. Financial markets can be divided into two:

- Foreign exchange market: this involves the selling and buying of foreign currencies for example bureau de change which sells and buys foreign currencies such as US dollar and British pounds.
- Security market: This involves selling and buying of government securities and shares of companies. For example, the Nairobi stock exchange and the Dar es Salaam stock exchange (DSE).

Market structure

Markets are classified into market structures according to the condition, characteristics or behaviour of the market, also according to the degree of competition, which exists in the market. Market structure can be divided into the following:

- Perfect competition.
- Imperfect competition (oligopoly, duopoly, monopolistic competition, monopsony, duopsony and oligopsony).
- Monopoly.

Perfect competitive market

This is an imaginary market characterized by the highest degree of competition. It is imaginary because it does not exist in the real world.

Characteristics of the Perfect Competitive Market

Perfect competitive markets have the following characteristics:

- *There must be a large number of buyers and sellers:* To prevent a single buyer or seller from influencing the price of a commodity. If there are so many buyers then one individual buyer cannot influence the price. Because if the consumer wants to

buy at a low price then the seller can refuse to sell goods to him or her. Similarly when there are so many sellers then one seller cannot charge high price because consumers may buy from other sellers. Therefore, sellers charge a market price that is determined by the forces of demand and supply. It means they are price takers.

- *Homogeneity:* The products sold by different sellers in a perfect competitive market must be uniform or identical in terms of colour, size, weight and taste. If the products are different then sellers may charge different prices hence the market will not exist.
- *Free entry and exit:* There must be no restrictions on the entry or exit of firms in and out of the industry respectively. Also, all firms in the industry should earn just a normal profit.
- *Absence of transport cost:* Under a perfect competitive market, firms do not incur transport cost.
- *Perfect knowledge:* Buyers and sellers in a perfect competitive have a perfect knowledge about market conditions, like the market price.
- *Perfect mobility of factors:* Factors of production such as labour and capital are free to move from one firm to another depending on the transfer earnings. In this case the goods can be moved to those areas where there is greater demand for them. Similarly labour and capital can be moved to those places where they are more productive.
- *There are no government restrictions or interventions* in form of tariffs, subsidies etc.
- *Consumers (buyers) aim at utility maximization while sellers aim at profit maximization.*
- *Price is constant at all levels of output* - because a firm under perfect market is a price taker. Therefore, a perfect competitive market faces perfectly elastic demand thus a firm can sell any quantity at any given price.

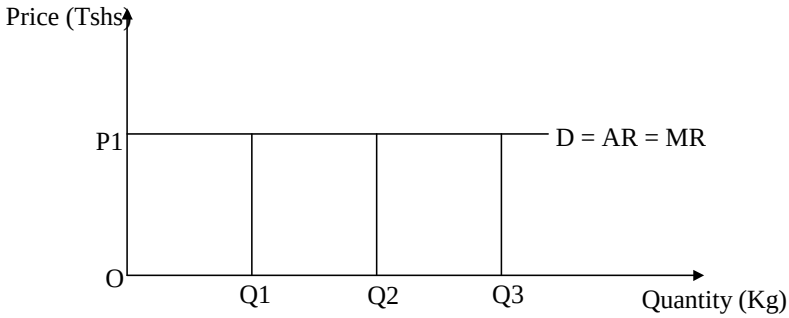


Figure: 4. 1 Demand curve of a perfect competitive firm

In figure 4.1 above, price is constant, therefore, equals to average revenue and marginal revenue. To prove if price is equal to average revenue and marginal revenue under a perfect competitive market, P = AR = MR

Since Total revenue (TR) = Price (P) × Quantity (Q)

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

$\therefore$ Average revenue = Price

MR Vs P

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

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

Since Price is constant under perfect market the change in total revenue is caused by the change in output only

$$\therefore MR = \bar{P} = \frac{\Delta Q}{\Delta Q}$$

Since AR = P and MR = P therefore,

MR = P = AR

Profit Maximizing Behaviour of a firm under a perfect Competitive Market

The concept of profit maximizing behaviour of a perfect competitive market can be analyzed by using two approaches:-

(i) Total cost approach

(ii)Marginal revenue and marginal cost approach

Total cost and total revenue approach

Under this approach, a firm maximizes profit at a level of output and price where the difference between total revenue and total cost is at maximum.

Total revenue - total cost is at maximum

Profit = Total revenue - total cost

Total revenue = Price × Quantity.

Example

Given the following schedule of revenue and cost of a firm

Table 4.1 Revenue and cost of a firm

Output (kg)	Price (Tshs)	Total revenue	Total cost	Profit
1	50	50	60	-10
2	50	100	80	20
3	50	150	120	30
4	50	200	130	70
5	50	250	145	105
6	50	300	170	30
7	50	350	322	28
8	50	400	380	20
9	50	450	435	15
10	50	500	442	8

In table 4.1 above at five units of output, a firm maximizes profit because at this level a firm obtains a maximum profit of Tshs.105 in comparison to other levels of output.

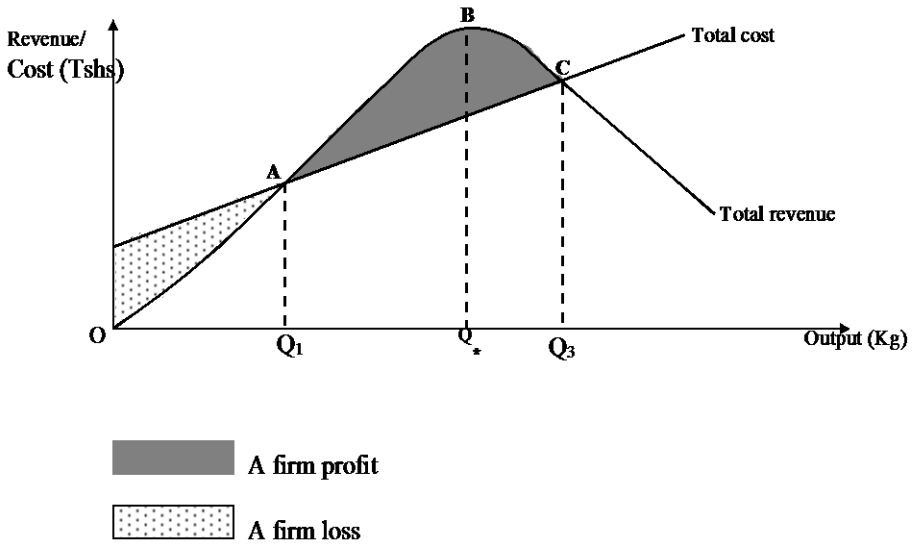


Figure: 4. 2 Profit maximizing of a firm by total revenue and total cost approach.

In figure 4.2 above**,** Output OQ1 (at point A) a firm incurs loss because total cost is larger than total revenue.
Output 0Q∗ (at point B) a firm makes maximum profit because total revenue - total cost is at maximum.
Output 0Q3: (At Point C) a firm's profit = 0 because total revenue = total cost.

***Marginal revenue and marginal cost approach*:**
Under this approach, a firm's profit maximizing behaviour can be explained in the short - run and long run periods.

Short-Run Equilibrium
In the short-run, firms under perfect competitive market maximize profit given the following conditions:
- Marginal cost = marginal revenue
- Price ≥ Average total cost
- Marginal cost curve must cut marginal revenue curve from below.

A firm in the short earns a super normal profit.

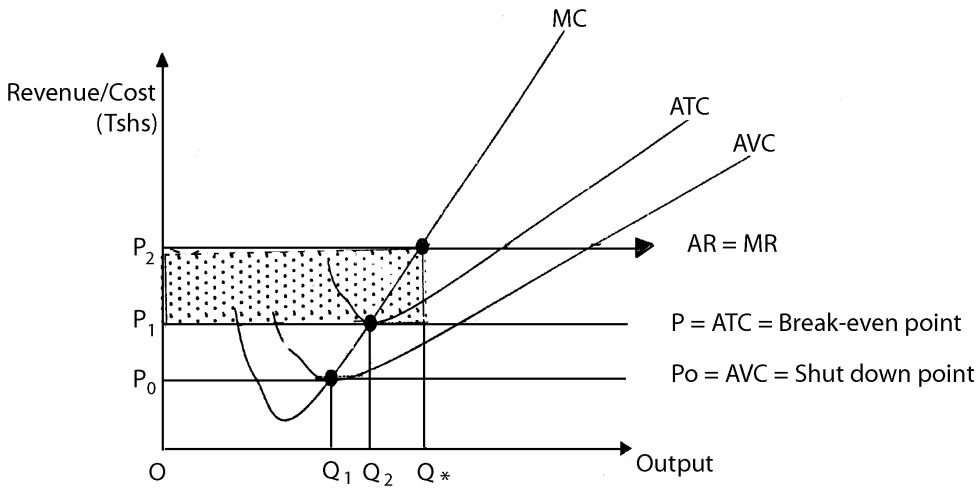


Figure: 4.3 Short run equilibrium of a firm

In figure 4.3 above, profit is maximized at output Q*, because at this level of output MC = MR and therefore:

- Output below Q*, let say 0Q2, MR > MC it means a firm may increase revenue by increasing output towards 0Q*.
- Output above 0Q*, MR < MC it means a firm's additional revenue is less than the firm's additional cost. The firm will have to reduce output towards 0Q* in order to maximize profit. In this case, the equilibrium output at which the firm maximizes profit is at 0Q* where MR =MC

Long run Equilibrium

In the longrun, profit maximizing conditions are as follows:

- Long run marginal revenue = longrun marginal cost.
- Long run marginal cost must cut longrun marginal revenue curve from below.
- Price is equal to longrun average cost curve.

In the long-run a firm may earn just a normal profit because of the entry of many firms in the market which want to enjoy super normal profit.

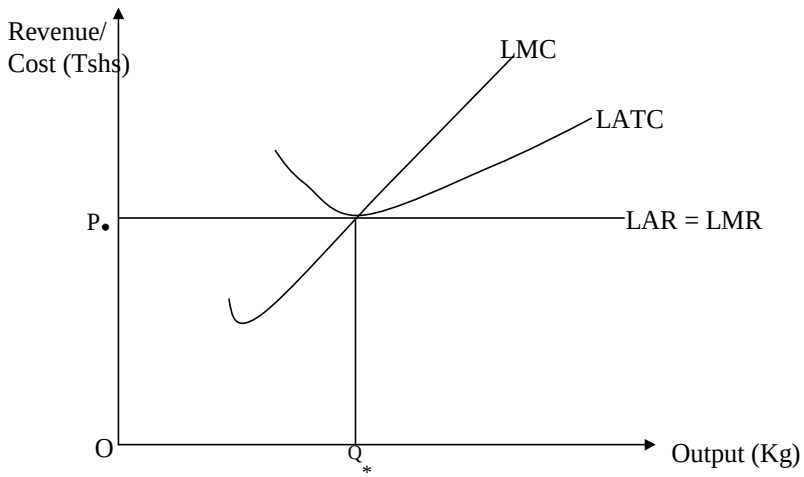


Figure: 4.4. Long run equilibrium of a perfect competitive firm

In figure 4.4 above,
LMC = Longrun Marginal Cost
LATC = Longrun Average Total Cost
LAR = Long-run Average Revenue
LMR = Long-run Marginal Revenue
Q_* = A firm maximizes profit because at this level LMC = LMR

Why perfect competition is unrealistic

Perfect competition is said to be unrealistic, that is, it cannot be achieved because of the following reasons:

- *Free entry is impossible*: Free entry into the industry is sometimes impossible due to some barriers. For example, where large initial capital is needed many firms will fail to join the industry.
- *Lack of perfect knowledge*: Some markets are very large in size, that is, they consist of so many buyers and sellers such that it becomes very difficult for every participant in the market to have full information by all that is going on in the market.
- *Perfect mobility of factors is impossible*: Labour in some senses is mobile though is not perfectly mobile due to various factors including social ties, age, lack of training etc.
- *Homogeneous products*: As competition grows firms would like to identify their products in brands in order to differentiate their products from those of the rivals.
- *No transport cost*: Transport cost is an important cost that any business firm must incur in the process of production and distribution of output. Any firm must transport either as raw materials or finished products from one place to another.
- *Uniform cost of production is unrealistic*: Firms may incur different costs of production due to differences in the type of labour they employ, differences in the sources of raw-materials, difference in length of time of loanable fund and differences in production techniques.

- *Many buyers and sellers*: Due to the existence of monopoly conditions/barriers it may be difficult to have many sellers in the market. Also, due to low income of people just few buyers may exist in the market.
- *Deliberate price fluctuations made by the government*: Constant price is also sometimes unrealistic due to the existence of government intervention, in which the government may decide to raise or lower the price in order to favor producers or consumers.
- *Preferential treatment may happen*: Sometimes sellers treat buyers differently due to the following reasons:-
- Difference in bargaining power among the buyers.
- Personal affections between the sellers and buyers, for example friendship
- Time of buying, for example in the morning the prices can be very high like at Kariakoo or Manzese market but by the evening the prices goes low. Most people in Dar es Salaam when in need of buying commodities from the market have a tendency of going in the evening expecting that the prices will be low. With commuter bus services in Dar es Salaam, the charges tend to be very low in the afternoon when there are very few passengers while in the evening and morning the transport fare tends to be high due to high demand.

Advantages and Disadvantages of Perfect Competition

Advantages of Perfect Competition

- Due to competitions among firms efficiency of production is possible under perfect competition.
- There is no need for advertisements due to perfect knowledge.
- High levels of output is produced due to the existence of many firms in the market.
- Consumers are not exploited since the price charged is low.
- More resources are utilized as compared to the monopoly market.
- In efficient firms are automatically eliminated in the industry.

Disadvantages of Perfect Competition

- All firms produce homogeneous products hence consumers lack varieties of products.
- Firms may fail to expand due to earning of only normal profits.
- When some firms are eliminated it may result to unemployment.
- Since in the long run firms earn just normal profits, firms may fail to employ new resources in the production process.
- The assumptions of perfect market are unrealistic in the real world.

Why Advertising is not so Important under Perfect Market

Advertising is not so important under perfect market because:

- *Firms are price takers:* Price will not increase because of advertising the product.
- *Products are homogeneous*: Since products are homogeneous consumers will not be able to differentiate between products of the firm advertised from those not advertised.
- *Perfect knowledge of consumers*: In perfect competition market consumers have perfect knowledge of supply, demand and prices of commodities in the market so advertising will be wastage of resources.

Why do we Study Perfect Market while it is Unrealistic

We study it because it gives "standards" of ideal market situation of how other markets can behave perfectly.

Monopoly Market: This is a situation in the market when one firm controls the whole supply of commodity and there is no close substitute of that commodity.

For example the Kenya Power and Lighting Company (KPLC) that has a monopoly in the supply of electricity in Kenya and the Tanzania electricity supply company (TANESCO).

Features /characteristics/conditions of monopoly market

- *There is only one producer or supplier or seller called monopolist*. The single producer may be an individual or a group of persons or the government
- *The commodity produced by the monopolist has no close substitute*. Pure monopoly exists if a producer controls the quantity of output for a product, which has no close substitute. In this case the monopolist produces a low amount of output in order to keep prices higher than those which exist under conditions of pure and perfect competition.
- *The distinction between the firm and the industry disappears* because there is only one firm which constitutes the whole industry.
- *A firm is a price maker*, which means it has the capability to decide a price that maximizes its profit.
- *A monopolist earns a super normal profit*. Because of the barriers of entry for firms in the market a monopolist charges a higher price and thus earn a super normal profit.
- *The monopolist can raise or reduce the price* depending on the amount of profit and volume of sales he wants to make

How does monopoly arise?

Factors for the arise are:

- *Legal restrictions by the government*: The government may give autonomy to a firm to supply in whole the market a certain commodity. Hence may restrict other firms from supplying the same commodity. For example, Tanzania electricity supply company (TANESCO).
- *Patent rights*: Are rights that arise when a certain firm owns a technology, which enables the firm to be the sole controller of production of a certain commodity, by using that particular technology. For example, the *Coca cola* Company is the owner of the formula of producing the product. The company therefore, has the monopoly power of producing *coca cola* products throughout the world.
- *Natural monopoly of resources*: Some monopolies may arise naturally due to reasons such as availability of sources of raw materials that are not found in other places/areas. For example Tanzania is a monopoly producer of Tanzanite because the mineral is found only in Tanzania.
- *Advertisement*: When a firm uses a lot of resources to advertise its products while other firms cannot afford due to weak financial positions, that particular firm will win the whole market and become monopolistic producer of a commodity.
- *Protectionism*: This is where foreign trade barriers are imposed on the product to exclude foreign competition. In such cases the domestic producers become

monopolists. Thus, a particular firm wins the whole market and becomes a monopoly producer of that commodity.

- *Cost of production*: If production of a certain commodity requires huge initial capital many firms may fail to enter into the market, therefore, this will cause a monopoly for a firm, hence charged according to the uses to which the commodity is put. For example electricity is usually sold cheaper for industrial uses than for domestic purposes. Price discrimination is possible because of the variations in the intensities of demand for the same commodity.

Necessary conditions for price discrimination

The necessary conditions for price discrimination are:

- The elasticity of demand in different markets must be different. The monopolist will find it profitable to charge more in the market, where price elasticity is low and low price where price elasticity is high.

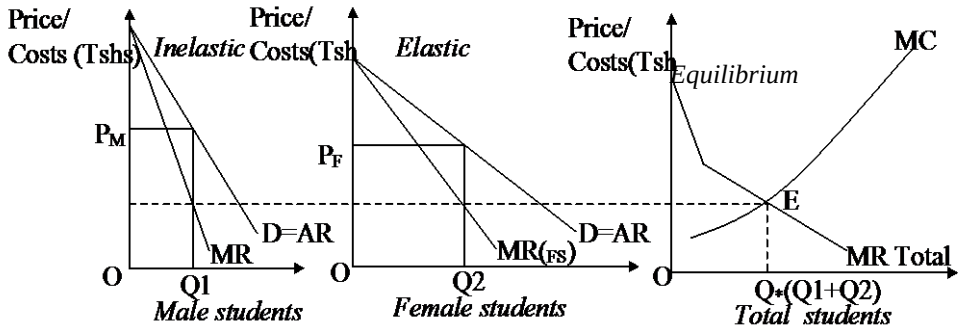


Figure: 4.5(a) *Figure: 4.5b* *Figure: 4.5c*

Figure 4.5a, 4.5b and 4.5c above, show demand curves for male and female students joining private schools owned by the monopoly who practices price discrimination. The demand curve of male students is relatively inelastic while female students demand curve is more elastic, indicating perhaps that women are less interested in school education or in particular their parents hesitate to educate female children. The horizontal addition of the individual marginal revenue curves for male and female students gives the marginal revenue curve for all students which together with marginal cost curve determine the most profitable number of both sexes to be admitted to the school. This is shown by the output $Q*$ (Q1+Q2) in the right hand panel of the diagram.

The school maximizes profit by setting separate prices (fees) for male and female students in such a way that the marginal revenue from the last student admitted in each school is equalized and also equals marginal cost in the market as a whole. If marginal revenue were not the same in both markets the firm would increase profit by reallocating output between the two markets. The different fees charged to male and female students result from the differences between the elasticity of demand in the two schools and female students paying less.

- The cost incurred in dividing the market into sub markets and keeping them separate should not be so large as to neutralize the differences in demand elasticity.

- There should be a complete agreement among the sellers; otherwise, independent competitors will gain by selling in the nearby market.
- Discrimination is possible when goods are sold on special orders because then the purchaser cannot know what is charged by others.
- It should not be possible to transfer a unit of demand from one market to another market
- It should not be possible to transfer from one market to another any unit of the commodity sold in one market. This is the case when services are rendered directly to consumers, for example, by teachers, doctors, lawyers etc.
- The markets must be geographically separated to prevent seepage. Seepage takes place when customers who buy at a lower price in one market and resell in the neighboring market at a higher price.
- Customers in the two markets must be completely unaware of the differences in price between the two markets.

Questions

- Define price discrimination
- Describe necessary conditions for price discrimination
- The monopoly is faced by the following demand function
  P1 = 5 + Q1 for market I
  P2 = 6 + Q2 for market II and the cost of producing units of out-put for both markets is TC = 10Q.

By using the concept of price discrimination

- Calculate the price and quantity in both markets.
- Total revenue and marginal revenue of both the markets.

Solution: For market I

Given P1 = 5 + Q

TR = P × Q

P1 = 5 + Q

TR = (5Q + Q) Q

TR=5Q + Q^2 -for market. 1

MR = $\frac{\Delta TR}{\Delta Q}$ = Slope of total revenue function

Mb x $^{m-1}$ = slope

MR = ?

TR = 5Q + Q2

MR = 1.5 (Q^{1-1}) + 2. (Q^{2-1})

MR = 5 + 2Q

= 5 + 2Q for market 1

From cost function

TC = 10Q

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

MC = 10

Profit maximizing rule MC = MR
MC = 10, MR = 5 + 2Q
10 = 5 + 2Q
5 = 2Q
2.5 = Q = Profit maximizing level of output

MR = 5 + 2(2.5)
MR = 5 + 5
MC = 10
TR = (5 + Q) Q
TR = (5 + 2.5) 2.5
TR = (7.5 × 2.5)
TR = 18.75
Price = 5 + 2.5

For market II price and quantity can be obtained as follows
MR = MC = Profit maximizing level
TC =10Q

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

MC = 10
TR = P × Q
(6 + Q) Q
$TR = 6Q + Q^2$

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

6 + 2Q
MC = MR = Profit maximizing rule
10 = 6 + 2Q
10 – 6 = 2Q
4 = 2Q
Q = 2 = Maximizing level of output.
TR = Q × P
Given, Q = 2 and P = 6 + Q
$TR = 6Q + Q^2$
$TR = 12 + (2)^2$
TR = 16
$6\ x^m + C$ = Slope = MR
$MR = M.b^{m-1}$
MR = 6 + 2Q
MR = 6 + (2X2)
P2 = 6 + 2
P2 = 8
MR = 6 + 2Q
= 6 + 2(2)
= 6 + 4

= 10
P2 = 8
TR = 16
MR = 10

Advantages of Monopoly

Monopoly market has the following advantages:

- It avoids wasteful competition in the production of certain goods. For example, public goods like roads, railways etc.
- It spends little resources in advertising for its products and this may reduce cost and price.
- It can use the supernormal profit that it obtains for financial research and invest in technologies, which would lead to a greater output and an increase in the quantity of the output.
- It is useful in the production and distribution of goods or services which affect the interest of consumers or are consumed by the majority. For example, electricity and water hence the government prefers to use such services because they affect the interest of the majority and for security reasons. Therefore, they have to be under one firm which can easily be controlled by the government.

Disadvantages of Monopoly

Monopoly market has the following disadvantages:

- It discourages competition that results into low output and poor quality of goods and services.
- Causes hardship to the consumers by raising the price of the commodity when it try to maximize profit.
- Can cause unnecessary shortages of goods by under producing a commodity in order to get high profit
- Consumers lack freedom of choice, since they are forced to buy the commodity produced by a single producer.
- Monopoly firms are productively inefficient because they have no motive to reduce the cost of production.
- Resources are underutilized because the monopolists have no motive to improve technologies and increase output. This may cause underutilization of resources such as labour, land and capital
- Lack of competition and an assurance of market makes a monopoly lose motive to invest on new technology as a result it causes several problems to the society such as air pollution and noise pollution.

Demand Curve of a Monopoly

The demand curve of a monopoly slopes negatively from left to right.

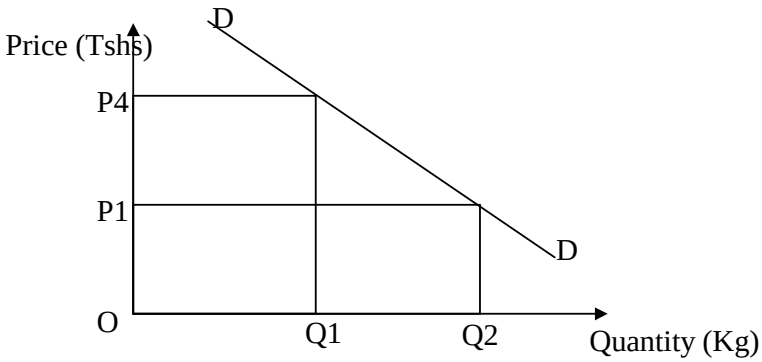


Figure: 4. 6 Demand of a monopoly

In figure 4.6 above, the demand curve of a monopoly slopes negatively from left to right. This implies that a monopolist is a sole supplier of a commodity in the market and therefore the one who controls the price in the market. A monopolist sets the price depending on the demand for a commodity. And also under a monopoly market the marginal revenue slopes downwards from left to right and is less than the price because of the changes of the prices.

Example of revenue of a monopoly

Table 4.2. An example of revenue schedule of a monopoly

Q	P	TR	AR	MR
1	8	8	8	-
2	7	14	7	7
3	6.5	19.5	6.5	5.5
4	6	24	6	4.5
5	5	25	5	1

The demand curve for the monopolist firm is fairly elastic because the seller can either determine price or quantity but not both, that is, if he fixes a higher price then quantity demanded would be low. If he/she supplies much of the commodity, the price would be low. In such a situation the seller is a price maker because he can influence the price in the market.

The marginal revenue (MR) can slope downwards from left to right because when more commodities are bought to the market the price falls. Therefore extra revenue received from additional output decreases as the seller sells more units.

The marginal revenue is below the average revenue (demand curve. So when the average revenue is falls then it means that marginal revenue is below the average revenue. See figure 4.7 below.

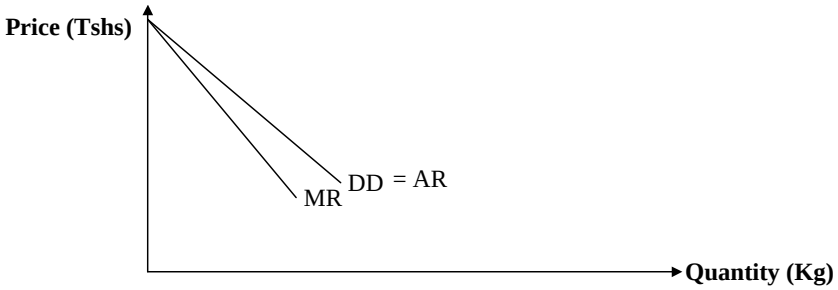


Figure: 4. 7 Marginal and revenue curves

A Super Normal Profit of a Monopoly

A monopoly obtains a super normal profit by charging a level of price, which is above the average total cost.

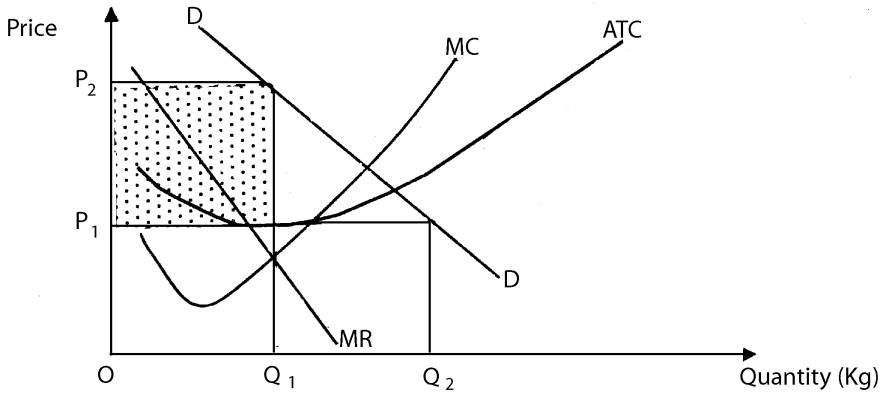


Figure: 4. 8 Super normal profit of a monopoly

The shaded region in figure 4.8 above shows a super normal profit of a monopoly. Price is greater than the average total cost.

Profit Maximization Behaviour of a Monopoly

Profit maximization behaviour of a monopoly can be explained by two approaches.

1. Total revenue *Vs* total cost approach.
2. Marginal revenue *Vs* marginal cost approach.

Total Revenue Vs Total Cost Approach

Under this approach, a monopoly firm maximizes profit at a level of output and price where the difference between the total revenue and total cost is at its maximum.

Total revenue = price × quantity

Profit = total revenue - total cost.

For example, given the schedule given below.

Table 4.3.Revenue and cost of a monopoly

Output	Price	Total revenue	Total cost	Total profit
5	20	100	120	-20
14	11	154	160	-6
24	9	216	216	0
35	7.1	250	238	12
45	6	270	255	15
50	5. 5	275	257	18
55	5	275	260	15
60	4	240	240	0
65	3	195	200	-5
70	2	140	210	-70

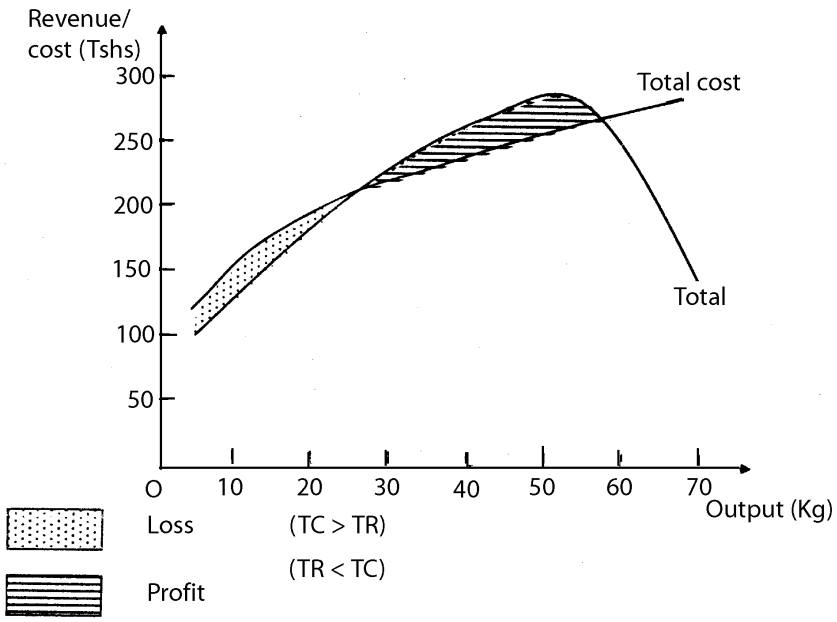


Figure: 4.9 Profit maximizing of a firm, total cost total revenue approach.

In figure 4.9 above, the maximum profit is at 50 units of output because at this level of output the difference between the total revenue and the total cost is at its maximum.

Marginal Revenue Vs Marginal Cost Approach

Under this approach, a monopoly maximizes profit given the following conditions:-

- Marginal cost must be equal to the marginal revenue.
- Marginal cost curve must cut marginal revenue curve from below.
- Price is greater than or equal to the average total cost.
- The monopoly earns a super normal profit.

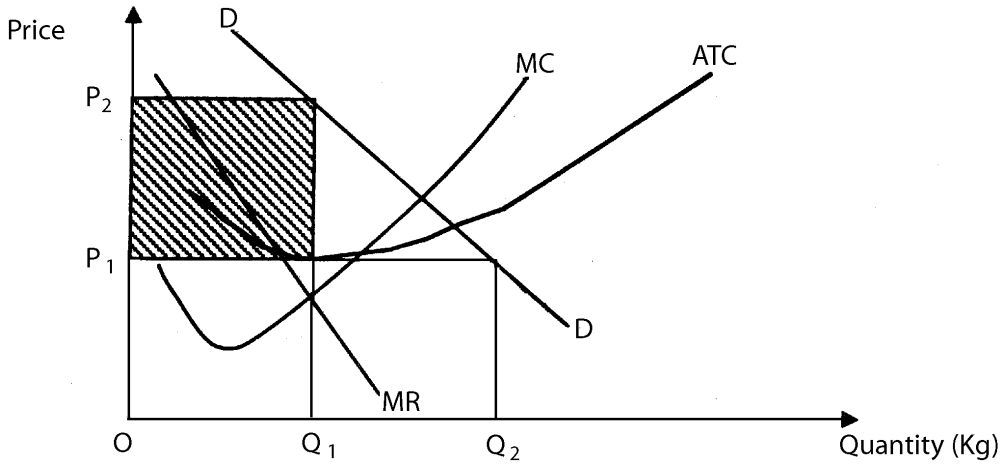


Figure: 4.10 Profit maximizing of a monopoly

In figure 4.10 above, a monopoly maximizes profit at output Q_1 where MC = MR

Reasons as to Why Monopoly Maximizes Profit at $0Q_1$

- Any output less than $0Q_1$ the addition to total revenue that is marginal revenue is greater than the addition to total cost. A firm can get more profit by increasing output towards $0Q_1$.
- Any output above $0Q_1$, let say $0Q_2$ the addition to total cost is greater than the addition to total revenue (MC > MR). A monopoly will incur loss by producing at this level of output. Therefore, it will have to reduce output towards $0Q_1$.
- At output 0Q1 the addition to total revenue is equal to the addition to total cost (MC = MR). Therefore, a firm maximizes profit at this level of output.

However in the long run a monopoly may obtain just a normal profit when price = long run average total cost.

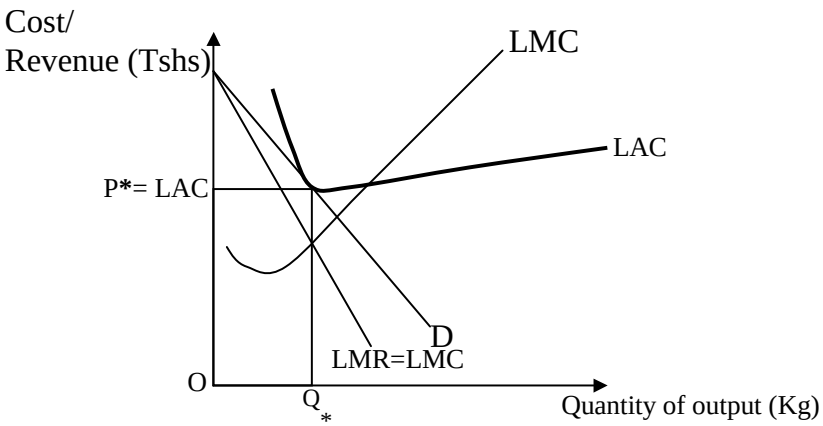


Figure: 4.11 Long run profit maximizing of a monopoly

In figure 4.11 below, a monopoly maximizes profit at output $0Q_*$ but makes just a normal profit because price = long run average cost.

Monopoly Loss

Very rare situations does a monopoly incur loss due to inefficiency

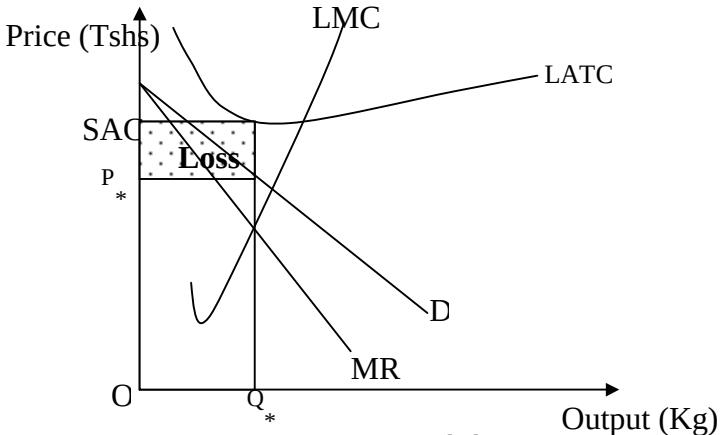


Figure: 4.12 Monopoly loss

Figure 4.12. Monopoly loss

The shaded region indicates a monopoly loss because long run average total cost is greater than price P_*.

Measures of Controlling a Monopoly

Measures that can be adopted to control monopoly are as follows:

- *Liberation of the market*
- If the monopoly emerged through legal restrictions the government may liberate market in order to allow firms to enter the market.
- The government can eliminate monopoly by providing credit and subsidies to other firms in case a commodity requires high initial capital outlay.
- A government can either reduce production tax or input tax to enable other firms to join the market or impose heavy taxes on monopolist in order to discourage the monopolist from continuing with the production.
- *Price control:* The government can control the monopolist firm by forcing it to reduce the price to a level, which is equal to average total cost so that it does not earn a supernormal profit. For instance the diagram below shows the case of normal profit of a monopolist.

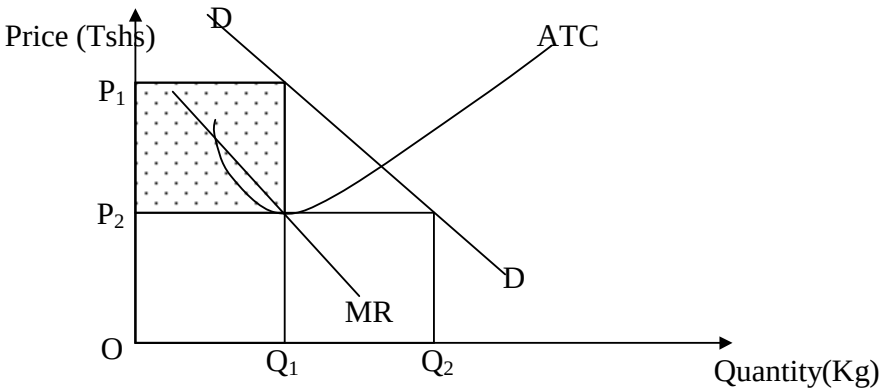


Figure: 4.13 Control of monopoly profit

For instance in figure 4.13 above the monopoly has been forced to reduce the price from $0P_1$ to P_2 . In this case, the monopolist earns a normal profit.

- *Taxing monopoly profit:* As well as controlling prices directly the government can tax monopoly profits so as to create an incentive for monopolies to reduce prices and profits.
- *Anti-trust policy:* These are the policies imposed by the government to prevent large firms from dominating the entire market by ordering a break up of an established monopoly into several firms.
- *Rate of return regulation:* This is the restriction on utility companies to a maximum rate of return on the capital they employ so as to reduce their rates of return and comply with the regulation.
- *Public ownership of the monopolies:* In order to eliminate the problems caused by the private monopolies, the government may decide to nationalize the private monopolies in order to defend public interest.
- *Control of mergers (mergers policy):* These are policies that control mergers or takeovers of big firms that might lead to the emergence of monopolies or distortions in the operation of the market forces.

Is advertising important under Monopoly Market?

Advertising is not so important because a monopoly as a single producer is assured of the market. Therefore, the monopolist do not bother to advertise their products.

Imperfect Market

Monopolistic Competition

A monopolistic competition is a market situation, which is more competitive than monopoly by having many firms in the market.

Features of Monopolistic Competition

A monopolistic competitive market has the following features:

- There are many firms in the market which compete against each other in a cutthroat competition. This type of competition may make other firms to collapse because they fail to compete.

- Firms produce and sell slightly different products. Which may be similar, for example, soft drinks like *coca cola* and *Pepsi*.
- Barriers to market entry are relatively small or non-existent.
- There is free movement of resources such as raw materials from one firm to another firm such as raw materials.
- Firms in a monopolistic competitive market produce goods of much higher quality than in a monopoly market
- Under the monopolistic competitive market, consumers have a wider range of choices because products are different in terms of quality, taste, shape, colour and package
- There is a possibility of a fall in the level of price because of competition among firms.
- A demand curve for the monopolistic competitive firms is generally much less steeply sloped (more elastic) than a demand curve for the products of the monopoly because of the larger number of firms that operate in the market. Therefore, those firms are ready to lower the price of their products because of competition. In this case, the demand increases.

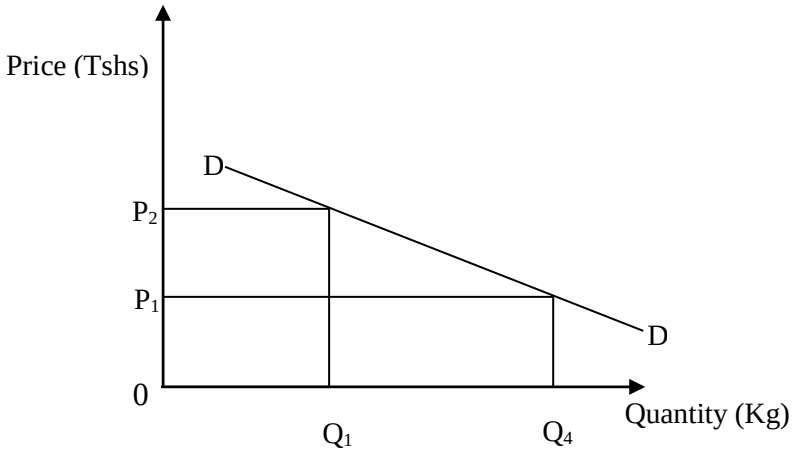


Figure: 4. 14 Demand curve of monopolistic competitive firm

In figure 4.14 above, a decrease in price from $0P_2$ to $0P_1$ may result in a large increase in quantity demanded of a product of a monopolistic competitive firm from $0Q_1$ to $0Q_4$.Also, an increase in price from $0P_1$ to $0P_2$ may result in a large drop in the quantity demanded of a product of a monopolistic competitive firm from $0Q_4$ to $0Q_1$.

Equilibrium of a Firm under Monopolistic Competition

Short-run equilibrium

In the short run, a firm under monopolistic competitive market maximizes profit at the level of output where the marginal cost is equal to the marginal revenue and marginal cost curve cuts marginal revenue curve from below. Price is greater or equal to average total cost.

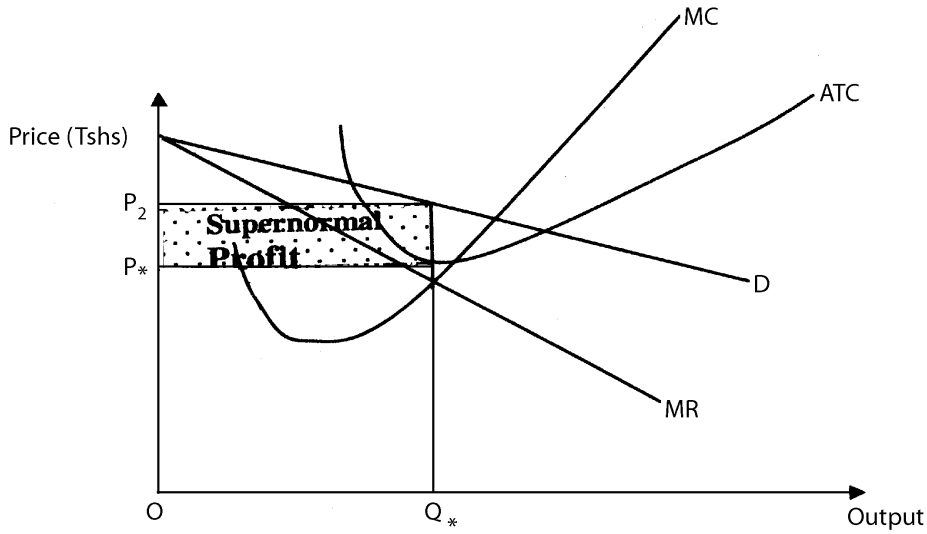


Figure: 4.15 Equilibrium of a firm under monopolistic competitive market

In figure 4.15, above, the shaded region shows a supernormal profit, a firm maximizes profit at output 0Q∗ where marginal revenue is equal to the marginal cost.

Long-Run Equilibrium

In the long run, a monopolistic competitive firm maximizes profit at the level of output where the marginal cost is equal to the marginal revenue and the long run marginal cost curve cuts long run marginal revenue curve from below. In the long run. a firm ends up earning just a normal profit because of the entry of many firms in the market.

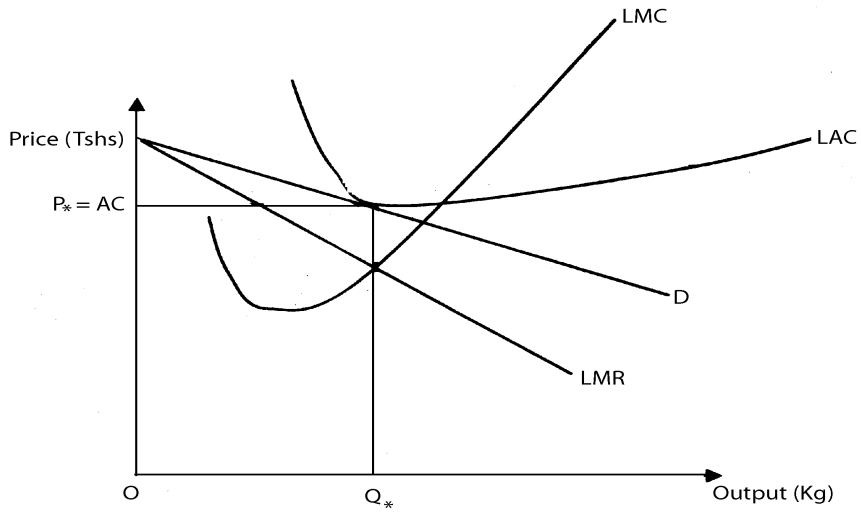


Figure: 4.16 Long run equilibrium of monopolistic competitive firm

In figure 4.16 above, a firm maximizes profit at output Q∗ where MC = MR. Any output below or above Q∗, a firm will make either less profit or loss.

Advantages of Monopolistic Competition

A monopolistic competition market has the following advantages:

- Under monopolistic competition consumers have a wider range of choices for goods which are produced by different producers unlike in monopoly market where consumers have limited choices.
- Under monopolistic competition, prices may fall because producers are forced to reduce price in order to win the market.
- Because of competition, firms under monopolistic competition become more efficient by innovating new technologies which can produce quality goods hence win the market.
- Efficient utilization of resources due to competition.

Disadvantages of Monopolistic Competition

A monopolistic competition market has the following disadvantages:

- Monopolistic competition can sometimes lead to wasteful competition. It means when production of a certain commodity, which is supposed to be produced by a single, or few producers is produced by many firms, it might lead to over-production, decline in price and misuse of resources through duplication of services.
- Monopolistic competitive firms use a lot of resources to advertise for their products hence raise price in order to cover advertising costs.
- Consumers can be misled to make wrong choices for commodities because of advertisement. Advertisement may influence people to buy goods, which sometimes are below standard or harmful to the consumers.
- Because of the cutthroat competition some firms can collapse leading to emergence of monopolies which may be inefficient. So monopolistic competition is sometimes unfair to small firms, which cannot compete against big firms especially in advertising, the products.

Oligopoly Market

This is a market structure in which there are few firms in the market. Examples of firms in oligopoly market are the Petrol companies such as B.P, CALTEX, TOTAL, OIL COM, etc,and automobile companies such as general motors, Toyota, Ford, Benz or Computer manufacturers such as IBM.

Types of Oligopoly Market

There are two types of oligopoly market

- *Perfect oligopoly:* This a type of oligopoly in which oligopolistic firms produce identical products, for example oil producing companies, like B.P, CALTEX, TOTAL, OILCOM, AGIP, GAPCO etc.
- *Imperfect oligopoly:* This is a type of oligopoly in which oligopolistic firms produce a variety of similar products. For example, Automobile companies like BMW, Toyota, Ford, Benz, Mitsubishi, TATA etc.

Features of Oligopoly Market

Oligopoly market has the following features:

- There are few sellers of the product in the market. For example the oil selling and automobile companies.

- There are few barriers of entry to the market. Examples of barriers in the oligopoly market include technological rights (patent rights), massive production or economies of scale, lowest cost combination of factors of production and high initial capital.
- Firms in oligopoly market may produce either identical or differentiated products such as oil products and automobile products respectively.
- Firms under oligopoly market recognize for mutual interdependence in terms of market shares, that is, each firm recognizes that the demand for its products is affected by the demand and price of other firms. For example, if one oligopolistic firm lowers the price of its product, the demand for other firms' products will be affected. It means demand will decline.
- Sometimes oligopolistic firms form joint ventures or amalgamations in order to jointly control and regulate the demand for their products such joint ventures are known as cartel an example of a cartel is of OPEC (Organization of Petrol Producing Countries). The aim of such a cartel is to maximize profit for the group as a whole by controlling supply.
- Due to interdependence among oligopolistic firms, it is impossible for one firm to determine the demand curve for its products without making assumptions on the behaviour of its rivals. For example, a firm needs to know how the rivals will respond to price increases or decreases whether they will follow suit or not.
- Despite the great interdependence among the oligopolistic firms competitions do exist among the imperfect oligopolistic firms. For example, automobile industries compete to win the market

The Kinked Demand Curve Theory

This theory was developed by an economist called Paul Sweezy. The theory states that *over time a common market price tends to be established in an oligopolistic industry*. If one firm in the market raises its price above the going market price the other firms will not follow with similar price increase, therefore the demand for the firm's product will drop by a large amount (elastic demand). On the other hand if a firm lowers its price below the market price all the other firms in the market will also reduce their price, consequently the demand for the firm's product will be inelastic unlike in the previous case in which demand is elastic.

The kinked demand curve

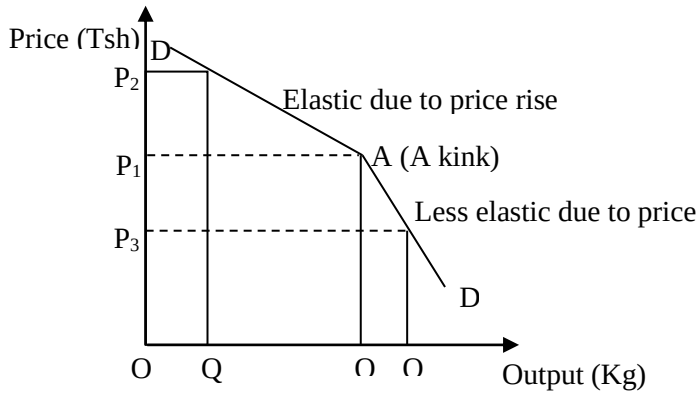


Figure: 4. 17 Kinked demand curve

In figure 4.17 above, at the market price $0P_1$ output $0Q_1$ is demanded at point A. If a firm raises its price from $0P_1$ to $0P_2$ other firms will not follow similar price rise and therefore, the firm's demand will drop elastically from $0Q_1$ to $0Q_2$. On the other hand, if a firm lowers its price from $0P_1$ to $0P_3$ other firms will also lower their prices leading to a small increase in quantity demanded (inelastic change). Therefore, neither a rise nor fall in price will benefit an oligopolistic firm. An appropriate action would be for a firm to continue charging the market price.

Other Types of Imperfect Market

Monopoly

This is type of market, which exists when there is a single buyer of a commodity in the market.

Duopoly

This is a type of market, which exists when there are only two suppliers of a commodity in the market.

Types of Duopoly

There are two types of duopoly

- *Pure duopoly:* This exists when the commodity supplied by the two firms is homogeneous.
- *Differentiated duopoly:* This occurs when there are some differences in the commodity supplied by the two firms.

Features of Duopoly Market

A duopoly market has the following features:

1. Duopoly market usually leads to cutthroat competition between the two producers.
2. Firms in this market either agree not to compete by dividing areas of operation.
3. The commodities supplied may be identical or differentiated
4. There are some barriers of entry to the industry, hence domination by the two firms.

Duopoly

This is a type of the market, which exists, where there are only two buyers of a commodity or service in the market.

Duopsony

This is a condition in a market where there are only two buyers.

Monopsony

This is a condition of the market in where there is only one buyer in the market.

Oligopsony

An industry where there are only a few buyers for the product.

Various Concepts of a Market

- *Market theory /behaviour:* Is a theory of determination of price by the market forces of demand and supply. The higher the price the greater the quantity supplied while the lower the price the greater the quantity demanded. According to this theory, price is determined by the interaction of the market forces of demand and supply.

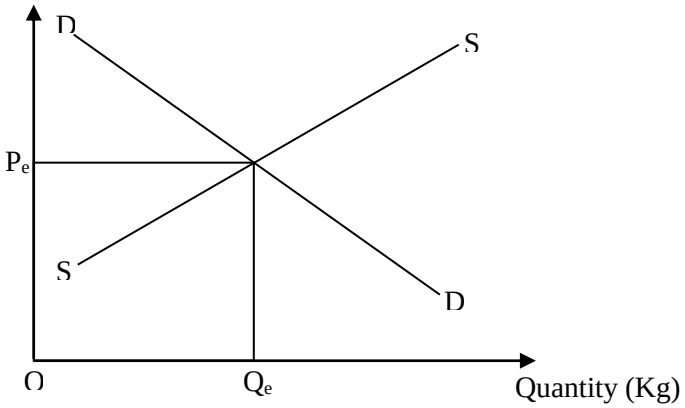


Figure 4.18 Equilibrium price

In figure 4.18 above, P_e = is the equilibrium price
Q_e = is the equilibrium quantity

- *Market price/equilibrium price:* Is the short run equilibrium price determined in the market at a particular time by the forces of demand and supply which rule in the market. Market price tends to persist until demand and supply conditions change, for example, when the demand increases price rises assuming that supply remains constant.

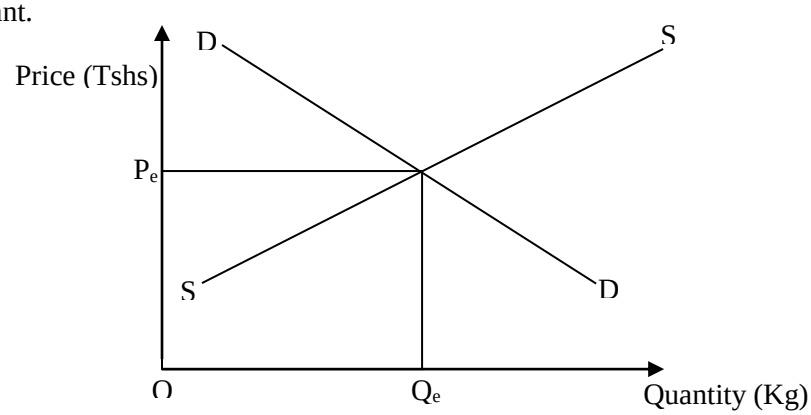


Figure: 4.19 Market price

In figure 4.19 above, P_e is the market price
Q_e is the equilibrium quantity

- *Open market:* This is a market in which there are no restrictions on buyers or sellers and prices are determined by market forces of demand and supply. A perfect competitive market is an example on an open market.
- *Free market:* This concept means an economic situation in which prices and allocation of resources are determined by the market forces of demand and supply. The government does not intervene in the determination of price and allocation of resources.
- *Local Market:* This is an internal market where commodities are bought and sold within the place of production.

- *Foreign market:* This is a market based outside the country in which buyers and sellers from different countries meet to exchange goods and services.
- *Market forces:* These are the forces in the market that determine the price of goods or services namely demand and supply. An increase in demand for a commodity leads to an increase in the price of the commodity while an increase in supply causes a fall in price.
- *Market schedule:* This is the total demand for all possible buyers in the market over a range of prices based on
  combined demand schedules of individuals concerned.
- *Market town:* This is a town which has the right to hold a market usually in, the open air on one or more days in a week.
- *Market overt:* Goods purchased in good faith in a recognized public market, that is, in open market. A buyer is given a good title to them even though they may be stolen goods.
- *Market research:* Is the study of consumer demand by a firm in order to assist it in expanding its output and marketing of its products.
- *Money market:* Is a market for short-term financial assets, for example, treasury bills and bonds. Treasury bills and bonds are government securities, which bear interest, and are sold to the public as a way of raising the government revenue.
- *Capital market:* Is a market for long term financial assets, for example shares. A share is a portion or unit of capital (equity) of ownership in a company.
  The owners of shares are paid dividends out of the total earnings of the company. Dividend is the portion of earnings of a company available for distribution to share holders. It is paid out of the company's profit after tax.

Price determination in the market

There are various ways through which prices of commodities are determined in the market, these are:

1. Price determination by the market forces of demand and supply.
2. Price determination by treaties.
3. Price determination by haggling.
4. Price determination by auction.
5. Price determination by the government.

1. Price determination by the market forces of demand and supply.

The interaction between demand for and supply of goods determines the prices of goods. The market price is determined by the equality between demand and supply in the market at a particular time. The whole process of price determination by market forces is known as price mechanism. How price is determined by market mechanism, that is through demand and supply is shown in figure 4.20 below.

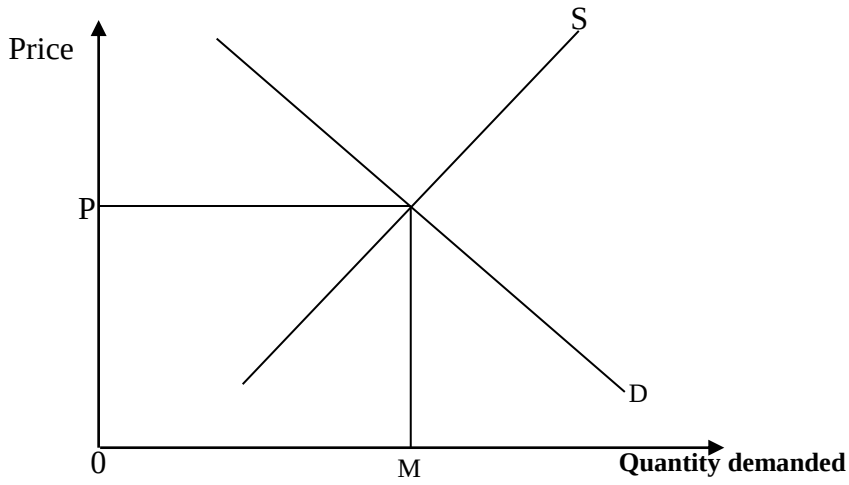


Figure: 4. 20 Determination of price under market economy

In figure 4.20 above at, OP_1, price is determined by OM quantity of the good is demanded and sold. The productive resources will be allocated to the production of the goods to the extent that OM quantity of the good is produced. If the price is above OP, then the quantity supplied by the sellers will be larger than the quantity demanded by the buyers. Thus, at a price higher than OP, the sellers will not be able to sell all the quantity of the goods they want to sell. In order to dispose the unsold stock of the good the sellers will compete with each other to bid down price. As a result of this competition between the sellers, price will fall to the level of OP. On the other hand if price is lower than OP then the quantity demanded by the buyers will be larger than the quantity supplied by the sellers with the result that some buyers will not be able to meet their demand fully at that price .

So the buyers will compete to obtain the quantity they desire and in doing so they will bid up price to OP. It is price OP that the quantity demanded by the buyers is equal to the quantity supplied by the sellers and both the buyers and sellers are satisfied and they will not compete to change price and the price at which the quantity demanded is equal to the quantity supplied is known as equilibrium price.

2. Price determination by treaties.

This is a type of price determination in which buyers and sellers make agreement and sign a treaty to fix a certain for the price for the commodity.

3. Haggling. This is the bargaining over prices as opposed to fixed price for commodities. In haggling, buyers bargain for an affordable price hence make a purchase until an agreement on the price of a commodity is reached.

4. Auction. It is a public occasion when things are sold to the people who offer the highest price. It is a type of transaction in which the buyer of an item and the price that is paid for it are reached after a number of different potential buyers have each made some declaration of their willingness to pay for the item at a price. The commodity goes to the highest bidder, ie the buyer who offers the highest price.

5. Price determination by the government.

This is the situation in which the government fix price of commodities**.** Price fixed by the government can be:

(i) Minimum price (price floor).
(ii) Maximum price (price ceilings).

Price Floor (Support Price or Minimum Price)

This is the minimum price fixed by the government, above the equilibrium price to protect the suppliers or producers when the government feels or think that the market price is too low to generate enough profit to the producers or to encourage the production of a certain commodity.

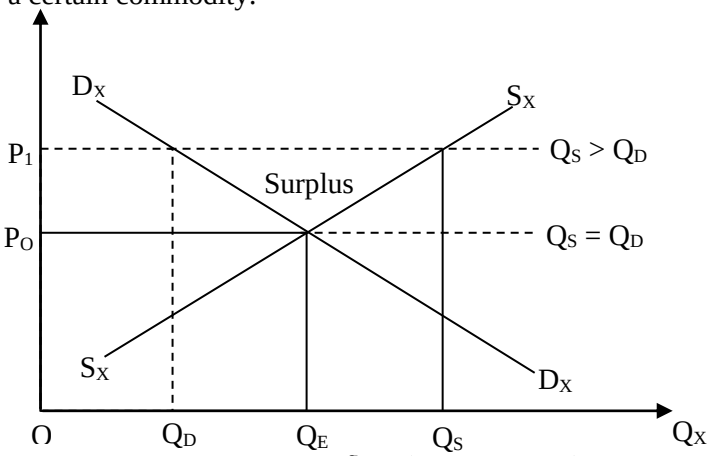


Figure: 4. 21 Price floor (minimum price)

In figure 4.21 above,
P_x = Price of commodity x
Q_x = Quantity of commodity x
D_xD_x = demand curve for commodity x
S_xS_x = supply curve for commodity x
P_O = equilibrium price (minimum price)
Q_D = Quantity demanded
Q_S = Quantity supplied
P_1 = Minimum Price

Effects

If the government fix price above the equilibrium (price floor) the suppliers will be encouraged to supply more but the quantity demanded will decline due to the increase in price as a result supply will exceed demand and there will be a surplus which will force suppliers to decrease the price towards the equilibrium price.

Maximum Price (Price Ceilings)

This is the maximum price set by the government below the equilibrium price to protect consumers when the government thinks that the market price is too high for the consumers to afford.

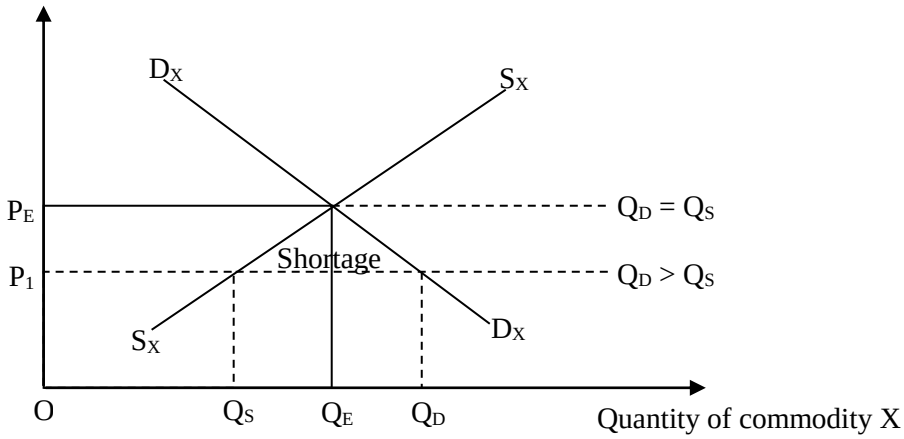


Figure: 4.22 Maximum price

In figure 4.22 above,
S_X = Supply curve for commodity x.
D_X = Demand curve for commodity x.
P_E = Equilibrium price.
Q_E = equilibrium quantity.
Q_S = quantity supplied of commodity x.
Q_D = quantity demanded of commodity x.
P_I = Price set by the government i.e. maximum price.

Effects of a maximum price (price ceilings)

Price ceilings or maximum price has the following effects:

- Consumers will be encouraged to buy more because of the low price.
- Suppliers will be discouraged from selling more because of the low price.
- There will be shortage of the commodity because of the decrease in supply and increase in demand.
- The government will be forced to ration the commodity.
- Social unrest may occur.
- The government will be forced to raise the price back to the equilibrium.

TOPIC FIVE

THEORY OF THE FIRM

A firm is any business organization (unit) which is concerned with the production of any commodity or provision of services or selling and buying of goods and services. Firms can vary in size from a small scale firm such as a shop/kiosk to a very large scale public company. Examples of firms are, Tanzania telecommunications limited (TTCL), Tanzania cigarettes company (TCC) and Tanzania breweries limited *(*TBL*).*

Plant: This is a set of production unit/machinery in a firm which are used to produce goods and services.

Industry: This is a group of firms which produce similar products. Example Textile industry which comprise different firms producing clothes. In Tanzania, examples of firms in a Textile Industry are URAFIKI, MWATEX, SUNGURA TEX, KTM etc. Another example of industry in Tanzania is of the brewing industry which comprises of firms such as TBL, SERENGETI etc.

Objectives of a Firm

The main objective of any firm is to make profit/maximize profit.

How a Firm Maximizes its Profit

1. Reducing the of cost of production example by using cheap labour.
2. Raising the prices of its commodities in order to get more revenue, especially when the commodity has inelastic demand.
3. By lowering price in order to stimulate demand.
4. Mass production in order to sell more so as to get more revenue and also reduce the average cost of production.
5. Division of labour which lead to increase in out put
6. Advertising the products in order to increase the size of the market
7. By employing cost effective technology.
8. By providing incentives to workers so as to make them produce more.

Cost of Production of a Firm

These are the money used to buy factors of production. They are the expenses which are incurred in running a business or producing a commodity. Also, costs of production include *opportunity cost* of producing a commodity. It means foregone benefits which the business could get by using its resources in the production of other commodities.

That is, by engaging in the production of a certain commodity, the entrepreneur sacrifices other benefits which could have been obtained by producing other commodities. For example, if a peasant produces maize in his/her piece of land by doing so he/she sacrifices, the benefits that he could have obtained by producing other crops in his plot of land, or using the land for other economic activities.

Types of Costs

Costs can be categorized into the following types

Implicit Cost (Opportunity Cost)

(Sometimes called INDIRECT COST)

These are the benefits/gains which are sacrificed by a firm by not engaging in the production of other commodities. It means a firm by employing its resources in the production of a particular commodity it sacrifices other benefits, which it could obtain by employing its resources in the production of other commodities.

Explicit (Direct Cost)

This is the money that is actually used in buying factors of production.

Types of Explicit Cost

- Fixed Cost.
- Variable Cost.

Fixed Cost/Prime Cost/Overhead Cost

These are the types of costs, which do not change with the change in the output level. They must be incurred even if production has not taken place. For example, Rent of hiring land and interest for the use of capital must be paid even if there is no production of any output.

Note. When output is zero total cost is equal to total fixed cost.

Table 5.1Example of a total fixed cost schedule

Output (Kg)	**Total cost(Tshs)**
0	20
1	20
2	20
3	20

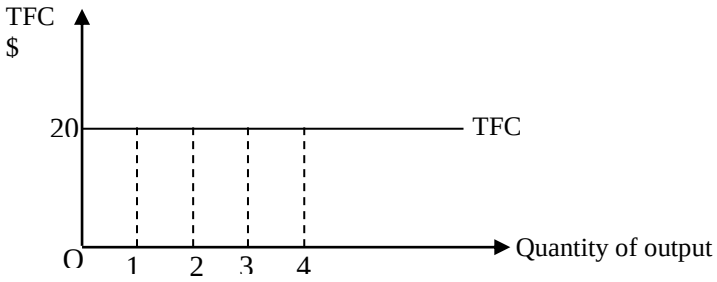


Figure: 5.1 Total fixed cost curve

In figure 5.1, the same cost is incurred to produce various unit levels of output

Total Variable Cost: Total variable cost refers to the types of costs which change with the change in the level of output. It means when production increase a firm incurs more costs such as of buying raw materials, transport charges, wages to unskilled labour, electricity etc.

NB: At zero output no variable cost is incurred. So when output is zero total cost is equal to total fixed cost.

Table 5.2 Example of a total variable cost schedule

OUTPUT (kg)	TOTAL VARIABLE COST (Tshs)
0	0
1	18
2	30
3	40
4	52
5	85
6	106
7	140

The schedule above can be presented in a form of a curve as shown in figure 6: 2 below.

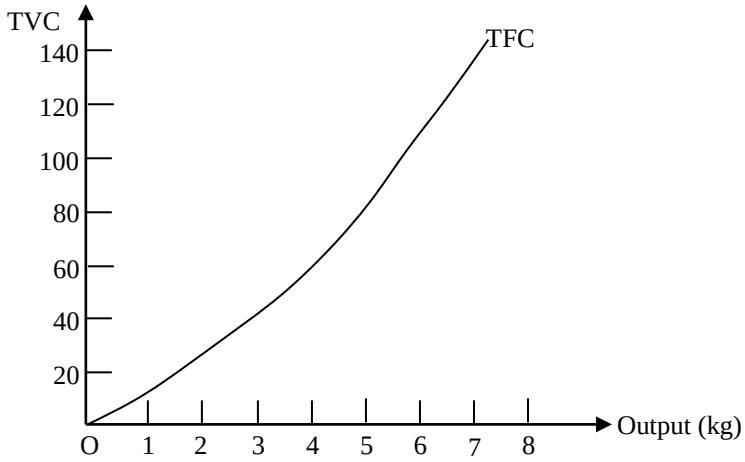


Figure: 5. 2 Total variable cost curve

In figure 5.2 above, total variable costs change as output level change.

Total Costs: This is a sum of all costs of production both implicit cost and explicit cost.

TC = I + E

TC = I + TFC + TVC

TC_E = TFC + TVC

Where I = Implicit cost

TC_E = Total Explicit cost

TC = Total cost

TFC = Total fixed cost

TVC = Total variable cost

If you are not given implicit cost, total cost will be the sum of total fixed cost and total variable cost or the sum of total explicit cost (TC_E = TFC +TVC). For economic analysis the cost of hiring capital is assumed to be a fixed cost and that of labour is assumed to be a variable cost.

TFC = Cost of capital

TFC = Price of capital (interest) x Quantity of capital

TFC = Pc x K

TVC = Cost of labour

TVC = Price of labour (wage) x quantity of labour
TVC = Pl x L
TC = Pk. K + Pl.L
TC = r.K + W.L
Where
Pk = Price of capital
K = Quantity of capital
P_l = Price of labour
L = Quantity of labour
R = Interest
W = Wages

Example

Find total cost if the price of labour is Tshs. 40 per unit, the quantity of labour is 20 units, and price of capital is Tshs 50 per unit, the quantity of capital is 10 units.
Given:
Pl = 40/=
L = 20/=
Pk = 50/=
K = 10/=

Solution

Total cost = (price of labour × quantity of labour) + (price of capital × quantity of capital)
TC = (40 × 20) + (50 × 10)
TC = 800 + 500
TC = TSH. 1300

Table 5.3 Total fixed cost, total variable cost and total cost

Output (Kg)	**Total fixed cost (Tshs)**	**Total variable cost (Tshs)**	**Total cost (Shs)**
0	50	0	50
1	50	15	65
2	50	25	75
3	50	34	84
4	50	42	92
5	50	52	102
6	50	64	114
7	50	78	128

Total Cost, Total Variable Cost and Total Fixed Cost Curves

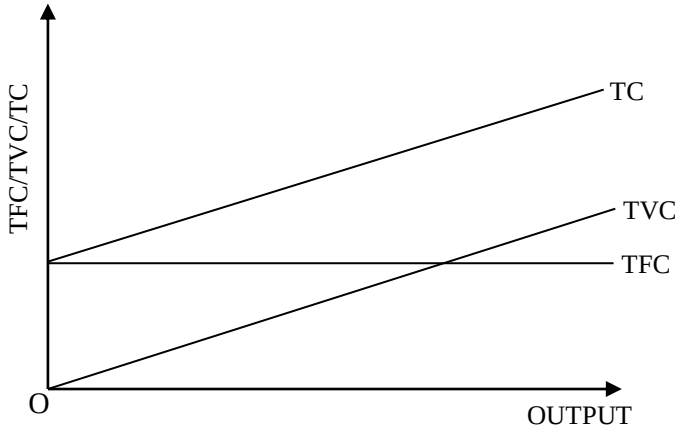


Figure: 5.3 Total Cost, Total Variable Cost and Total Fixed Cost Curves

In figure 5.3 above, total fixed cost TFC curve is constant, total variable cost (TVC) increase as output increases. Since total cost is the sum of fixed cost and variable cost also it rises as total variable cost and output rises.

Average Fixed Cost, Average Total Cost, Average Variable Cost and Marginal Cost.

Average Fixed Cost (AFC): Is the fixed cost per unit of output

Table 5.4 Example of total fixed cost and average fixed cost

Output (Kg)	Total fixed cost (Tshs)	Average fixed cost (Tshs)
0	50	-
1	50	50
2	50	25
3	50	16.6
4	50	12.5
5	50	10

☞**Note:** As output increase Average fixed decreases and become smaller and smaller but it never becomes zero.

Average Fixed Cost Curve: It is a curve which represents, graphically, average cost and the respective output levels .It slopes downward from left to right.

Average fixed cost in table 6.4 can be presented in a curve as shown in figure 6:4 below.

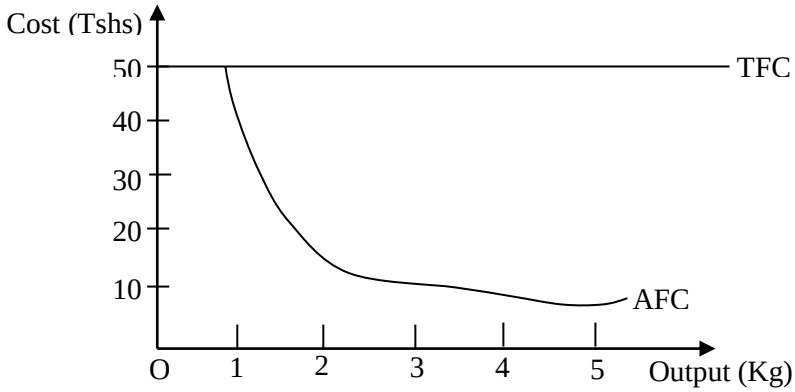


Figure: 5.4 Total fixed cost

In figure 5.4 above, average fixed cost slopes downwards from left to right. It declines as the level of output increases implying that a firm incurs less overheads or fixed cost as output continue to increase.

Average Variable Cost (AVC): Is the ratio between total variable cost and the level of output produced or is the variable cost per unit of output.

From TVC = PL × L

Where

PL = Price of labour = Wages

L = Quantity of labour

Table 5.5 Example of average variable cost

Output (Kg)	**Total variable cost (Tshs)**	**Average variable cost (Tshs)**
0	0	0
1	18	18
2	30	15
3	40	13.3
4	52	13
5	65	13
6	82	13.7
7	106	15.14

Output

Average Variable Cost Curve: It is a curve which represents, graphically average cost. Average costs are plotted on the vertical axis and output is plotted on the horizontal axis. Average cost curve is as shown in figure 5.5

Figure 5.5 below shows a u-shaped average variable cost. It is u-shaped because AVC is an inverse or reciprocal of average product (AP). When AP is rising AVC must be falling and when AP is at maximum AVC must be at minimum and when AP is decreasing AVC is increasing. A u- shaped AVC curve is shown in figure 6.5 above.

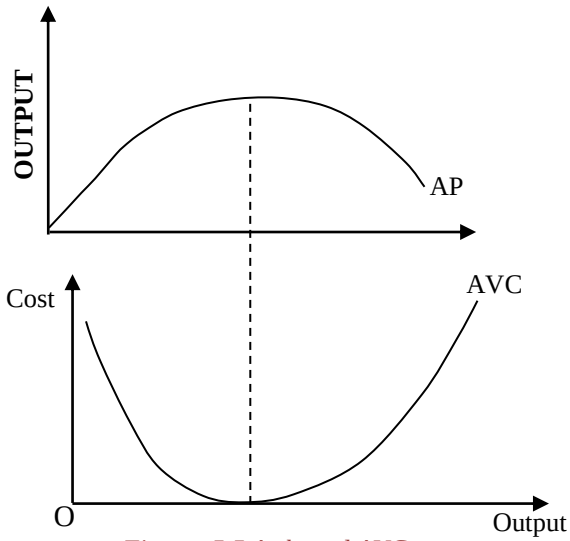


Figure: 5.5 A shaped AVC curve

In figure 5.5 above, as average output increases, AVC must be declining. It will continue to decline up to where output is at maximum, when output start to decline AVC must be rising. This can be proved mathematically as follows:

$$AVC = \frac{TVC}{Q}$$

$$AVC = \frac{PL \times L}{Q}$$

$$AP = \frac{Q}{L}$$

$$AVC = \frac{PL \times L}{Q}$$

Assuming it is a perfect market in which price is constant

$$AVC = \frac{PL \times L}{Q}$$

$$AVC = \frac{L}{Q}$$

$$AP = \frac{Q}{L}$$

$$AVC = \frac{1}{Q/L}$$

$$AVC = \frac{1}{AP}$$

There fore, it is proved that AVC is the reciprocal of AP.

Economic Interpretation of the U-Shape of AVC Curve

- When AVC curve declines a firm's output increases, therefore a firm experiences increasing returns to scale, it means a firm gets a larger proportion of output than input used in production.
- When AVC curve rises AP is falls these shows a decreasing returns to scale showing that the proportion of out put produced is less than the proportion of inputs used in the production process.
- When AVC is at minimum AP is at maximum. This shows constant returns to scale. It means that the proportionate change in input results into a similar proportionate change in the amount of output.

The Marginal Cost (MC): This is the additional cost incurred after producing one more unit of output.

Marginal cost is the inverse of marginal product, this can be proved as follows.

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

TC = total cost

Q = output

If Total cost = TFC + TVC

$$MC = \frac{\Delta TFC}{\Delta Q} + \frac{\Delta TVC}{\Delta Q}$$

Since TFC is constant, we assume that there is no change in TFC.

$$MC = 0 + \frac{\Delta TVC}{\Delta Q}$$

$$MC = \frac{\Delta TVC}{\Delta Q}$$

$$MC = \frac{\Delta(W.L)}{\Delta Q}$$

$$MC = \frac{\Delta W.\Delta L}{\Delta Q}$$

Assuming that the market is a perfect market, where price is constant, then the price of labour will be constant.

Where W is constant

$$MC = \frac{\Delta L}{\Delta Q}$$

Since

$$MP = \frac{\Delta Q}{\Delta L}$$

$$MC = \frac{1}{\Delta Q / \Delta L}$$

$$MC = \frac{\Delta L}{\Delta Q}$$

$$MC = \frac{1}{MP}$$

Therefore MC is an inverse of MP

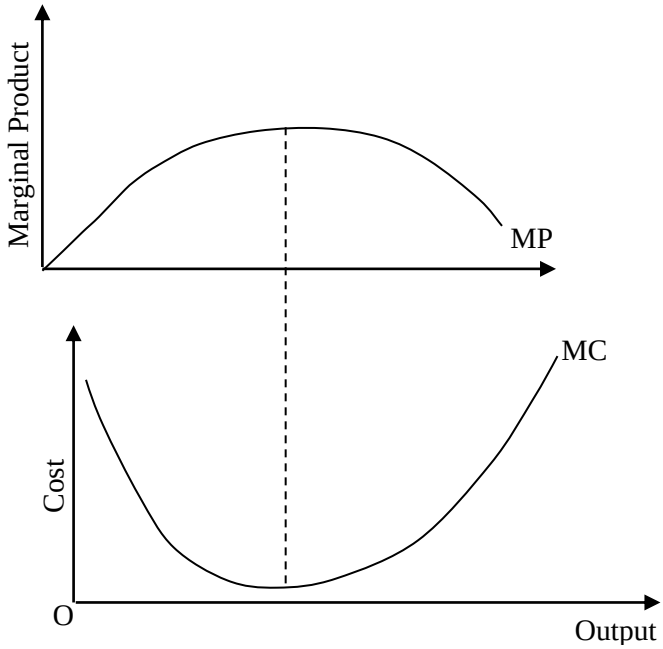


Figure: 5. 6 Marginal cost as an inverse of marginal product

In figure 6.6 above, when MP is increases MC is decreases, when MP is at maximum MC is at minimum also when MP is declines MC is increases.

Table. 5.6 Example of marginal cost schedule

Output	**Total variable cost**	**Marginal cost**
0	0	-
1	18	18
2	30	12
3	40	10
4	52	12
5	65	13
6	82	17
7	100	18

Average Total Cost (ATC): This is the cost per unit of output. It is expressed as follows:-

$$ATC = \frac{TC}{Q}$$

Where
TC = total cost
Q = output
And TC = TFC + TVC

$$ATC = \frac{TFC}{Q} + \frac{TVC}{Q}$$

Or

ATC = AFC + AVC

Average Total Cost Curve: This is a curve which shows the average total cost graphically. Like AVC curve, it is also u-shaped.

Reasons

When output increases and a firm experiences increasing returns to scale, average cost will start to fall, up to a point of constant returns to scale where a firm's output is at maximum .When output starts falling ATC will start to rising.

Summary of the u-shape of ATC curve

- As output increases ATC falls.
- When output is at maximum, ATC is at minimum.
- As out put declines ATC rises.

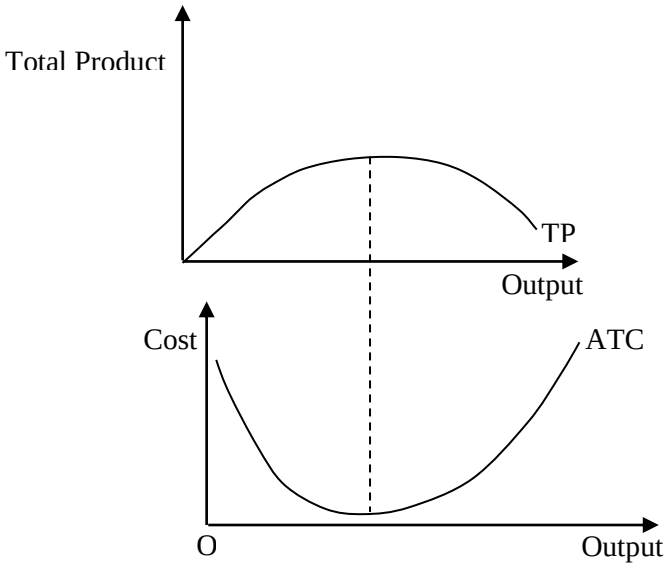


Figure: 5.7 Average total cost curve

Relationship between MC, AVC and ATC Curves

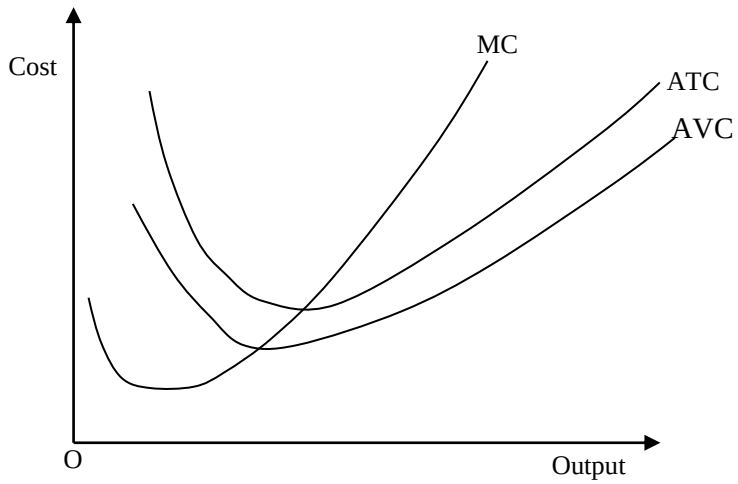


Figure: 5.8 Relationship between MC, ATC and AVC curves

In figure 5.8 above:
- Initially Average Cost (AVC) and Marginal Cost (MC) curves are declining uniformly, as output expands MC curve is below ATC and AVC is below ATC.
- MC curve reaches at minimum point before ATC and AVC curves
- MC curve cuts AVC and ATC curves at their minimum.
- MC starts rising while AVC and ATC still decline
- When AVC and ATC start to rise MC is above them.

Relationship Between, ATC, AVC, MC Curves and TP, AP and MP Curves

1. Average total cost and total product curves.
2. Average variable cost and average product curves.
3. Marginal cost and marginal product curves.

Relationship between average total cost and total product curves
- When total product increases ATC decreases
- When total product is at maximum ATC is at minimum.
- When total product decreases ATC is increases

Relationship between average product and AVC curve
- When average product increases AVC is decreases
- When average product is at maximum AVC is at minimum.
- When average product is decreases AVC is increases

Relationship between marginal product curve and marginal cost curve
- When marginal product increases marginal cost is decreases
- When marginal cost curve is at maximum marginal cost is at minimum.
- When marginal product curve decreases marginal cost curve increases

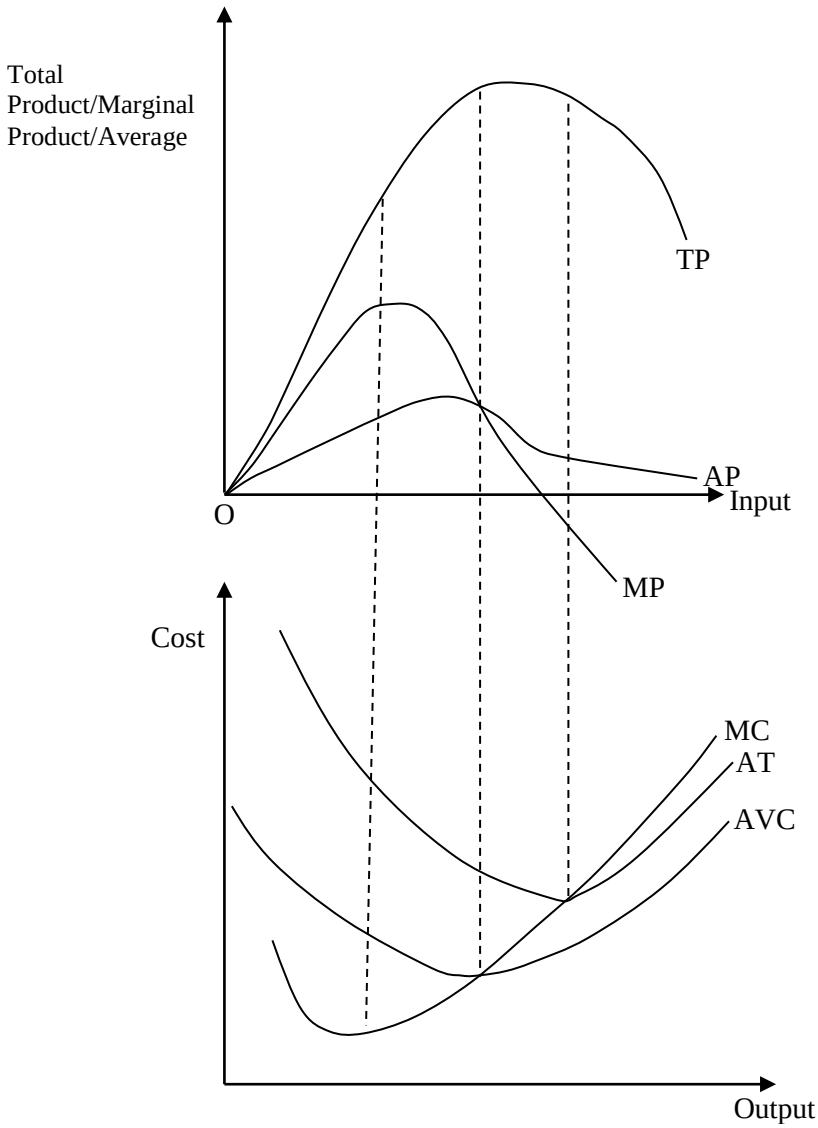


Figure: 5.9 Relationships between product curves and cost curves

Table 5.6 Study the following table and then answer the questions that follow it

Output units	**TC (Tshs)**	**AFC (Tshs)**	**AVC (Tshs)**	**MC (Tshs)**	**Price (Tshs)**	**TR (Tshs)**	**MR (Tshs)**
0	60	-	-	-	-	-	-
1	80	-	-	-	-	100	-
2	90	-	-	-	-	120	20
3	95	-	-	-	-	125	5
4	100	-	-	-	-	125	0
5	130	-	-	-	-	130	5

Where
TC = Total Cost
AFC = Average Fixed Cost
AVC = Average Variable Cost
MC = Marginal Cost
TR = Total Revenue
MR = Marginal Revenue
- Fill in the blanks
- With reasons show the point of output where the firm will maximize profit.

Worked - Example 1
If the total cost function of producing a commodity is given as
$TC = 4q^2 + 2q$
TC = total cost
q = output
Find
- MC

$TC = 4q^2 + 2q$

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

MC = slope of the total cost function
By applying equation of a line
Y = mx + c
M = slope

Given:
$Y = b.x^m + c$
$Slope = m.bx^{m-1}$
$TC = 4q^2 + 2q$

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

$MC = 2.4Q^{(2-1)} + 1.2Q^{1-1}$
$MC = 8Q + 2$

- Find ATC

$ATC = ATC = \frac{TC}{Q}$

Given the above total cost function
$TC = 4Q^2 + 2Q$

$ATC = \frac{4Q^2 + 2Q}{Q}$

$ATC = 4Q + 2$
$\therefore ATC = 4Q + 2$

Example 2

Suppose ATC function is given as

ATC = 2Q + 2

Find TC function

ATC = 2Q + 2

$$ATC = \frac{TC}{Q}$$

TC = ATC × Q

TC = (2Q + 2)Q

$TC = 2Q^2 + 2Q$

Example 3

Suppose TC cost function is given by the following equation

$TC = 4Q^2 + 2Q + 6$

Show:

- $$ATC = \frac{TC}{Q}$$

$$ATC = \frac{4Q^2 + 2Q + 6}{Q}$$

$$ATC = 4Q + 2 + \frac{6}{Q}$$

- *AVC*

Given:

$TC = 4Q^2 + 2Q + 6$

$TVC = 4Q^2 + 2Q$

$$AVC = \frac{TVC}{Q}$$

$$AVC = \frac{4Q^2 + 2Q}{Q}$$

AVC = 4Q + 2

- TFC

TFC = TC - TVC

TFC does not change with a change in output, therefore, when output is zero

TC = TFC and TVC = 0

Given:

$TC = 4Q^2 + 2Q + 6$

When output is equal to zero

$TC = 4(0)^2 + 2.0 + 6$

TC = 6 = TFC

∴ TFC = 6.

Short run Vs Long Run

- Short run - is the period when production starts and only one input is variable while other factors are fixed in supply, the supply of a commodity in this period is inelastic and cannot easily adjust itself to change in the demand. For matter of economic analysis labour is assumed to be a variable factor in the short run while capital is assumed to be a fixed factor. Therefore output function in the short run is given as
  Q = f(*k*,L)
  Where Q = output
  F = function of
  k = fixed units of capital
  L = units of labour
  Tc = (price of labor × quantity of labor) + (price of capital × quantity of capital)
  Tc = total cost

Short run Cost Curves: A short run cost curve is u-shaped, it first declines as output increases, reaches minimum when output is at maximum and starts rising when output declines Short run average cost curve is shown in figure 6.11

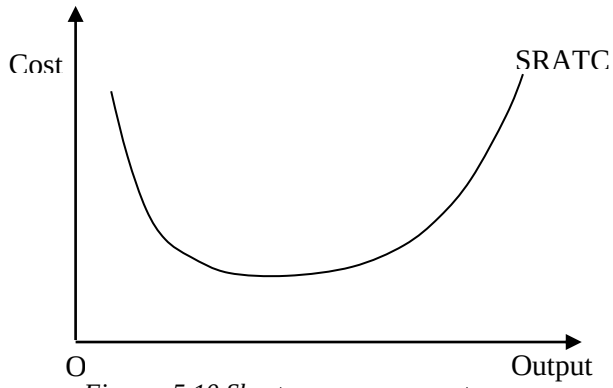


Figure: 5.10 Short run average cost curve

Long run Period: In the long run all input are variable i.e. they change as output change, there is no fixed factor, all input are changing, it is a period when a firm increases the size of the plant, buy other inputs like machinery, buildings etc. so production in this period does not face the problem of diminishing returns as it is for the short run.

Long run Cost Curves: Is the summation of various short run cost curves of different plants of a firm and it is L-shaped i.e. flatter, it is not u-shaped, because in the long run all inputs are variable and output do not diminish as a result long run ATC, AVC or MC do not rise after reaching the minimum instead they remain constant or rise slightly because of a smaller proportionate increase in output.

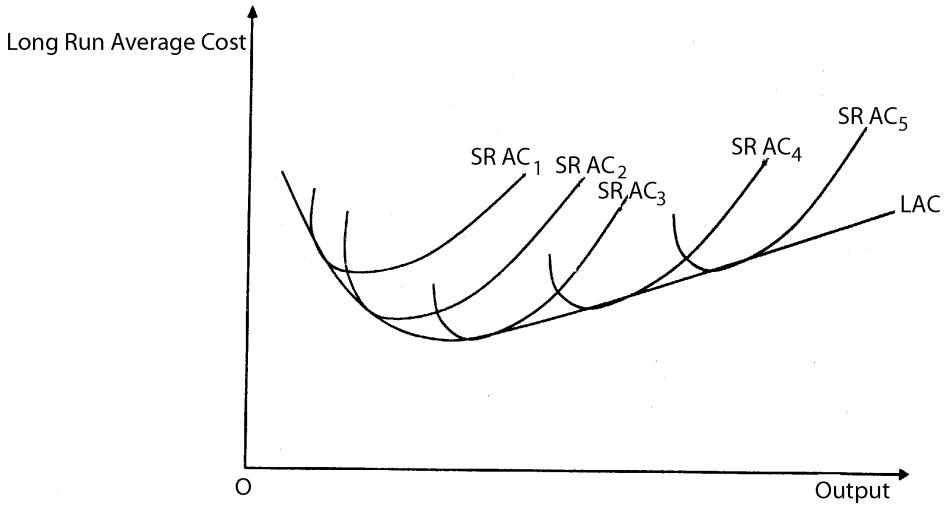


Figure: 5.11 Longrun cost curves

Figure: 5.11LAC = SR AC_1 + SAC_2 + SAC_3 + SAC_4 + SAC_5

Total Revenue, Average Revenue and Marginal Revenue

- Total revenue is the total earning of a firm which is obtained by selling a specific quantity of a commodity. Total revenue can be expressed as:-
  Total revenue = price × quantity
  TR = P.Q

Example

Find total revenue of a firm if the output produced by the firm is 20 units and each unit is sold at Tshs.40.

Total revenue = price × quantity

Total revenue = 20 × 40

TR = Tshs. 800

Table 5.7 Example of a revenue schedule of a firm operating under an imperfect market.

Output	Price	Total revenue
1	10	10
2	20	40
3	30	90
4	40	160
5	50	250
6	60	360
7	70	490
8	80	640
9	90	810

- *Average revenue* - Is the revenue per unit sold of a commodity Average revenue is given by the following formulae

$$AR = \frac{TR}{Q}$$

Where TR = Total revenue = price × quantity
Q = Output

$$\therefore \text{AR} = \frac{TR}{Q}$$

Where TR = Total Revenue, Q = Output

For example if total revenue of selling 20 units of output istshs800. Find Average revenue

$$\text{Average revenue} = \frac{\text{Total Re venue}}{\text{Output}}$$

$$AR = \frac{TR}{Q}$$

$$AR = \frac{800}{20} = \text{Tsh. } 40/=$$

= TSH. 40/=

Table 5.8.Example of average revenue schedule of a firm under imperfect market

Output	**Price**	**Average revenue**	**Total revenue**	**Marginal revenue**
1	2	2	2	-
2	4	4	8	6
3	5	5	15	7
4	6	6	24	9
5	7	7	35	11
6	8	8	48	13
7	9	9	63	15

Marginal Revenue: Is the additional revenue due to selling one more unit of output. Marginal revenue is expressed as follows

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

OR

$$\text{MR} = \frac{TR_2 - TR_1}{Q_2 - Q_1}$$

Total Revenue Curve: Is a curve which represents revenue of firm graphically, revenues is plotted on the vertical axis while output is plotted on the horizontal axis.

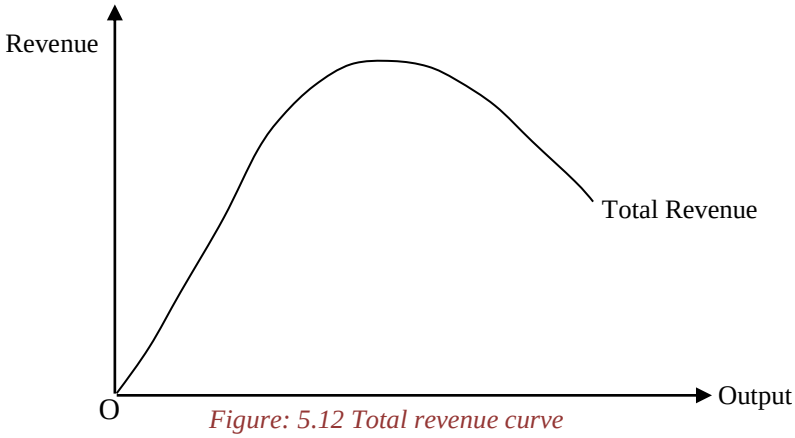


Figure: 5.12 Total revenue curve

In figure 5.12 above, as output increases total revenue also increases and, when output is at maximum total revenue is also at maximum but when output starts diminishing also total revenue to decline.

Relationship between Revenue and Elasticity of Demand

There is a relationship between price elasticity of demand and the revenue of a firm that is obtained by selling certain units of output

1. *When a Commodity has Elastic Demand:* If price elasticity of demand is elastic a decrease in price will cause a bigger increase in quantity demanded and total revenue, while an increase in price will cause a bigger decrease in quantity demanded, hence total revenue will decrease.

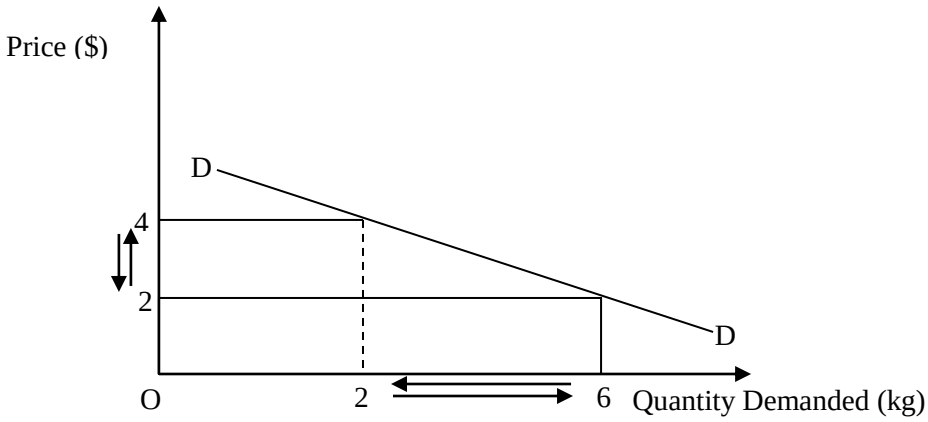


Figure: 5. 13 price increase and price decrease when demand is elastic and its effect on revenue

Case of Price Increase and Price Decrease

(i) ***Price Increase***

In figure 5.13 above, before an increase in price from Tshs 2 to Tshs 4 total revenue = 2 × 6 = Tshs 12. When price increases from Tshs 2 to Tshs 4 total revenue = 2 × 4 = Tshs 8. Therefore, an increase in price from Tshs 2 to Tshs 4 has resulted into a decrease in total revenue from Tshs 12 to Tshs 8.

(ii) ***Price Decrease***

In figure 5: 13 before the decrease in price from Tshs 4 to Ths 2, total revenue is 4 x 2 = Tshs 8. After a decrease in price total revenue is 2 × 6 = Tshs 12. Therefore a decrease in price from Tshs 4 to Tshs 2 has resulted into an increase in total revenue from Tshs 8 to Tshs 12 Therefore when price elasticity is elastic a decrease in price will cause an increase in the total revenue and an increase in price will cause a decrease in total revenue.

2. *When Price Elasticity is inelastic.*
   (i) *Decrease in price:* If price elasticity is inelastic a decrease in the price of a commodity will cause a smaller increase in revenue because the increase in quantity demanded will not be large enough to affect (compensate) the affect of the decrease in price.
   (ii) *Increase in price:* If price increases total revenue will increase since when price increases in a situation of inelastic demand the quantity demanded decreases by a smaller amount

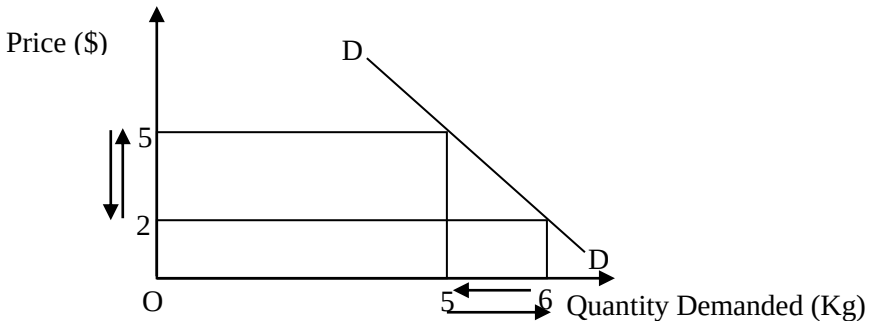


Figure 5.14 Price increase and decrease and their effects on revenue when demand is inelastic

In figure 5.14 above, which shows inelastic demand, before the increase in the price from Tshs 2 to Tshs 5. Total revenue is 2 × 6 = Tshs12. After an increase in price from Tshs 2 to Tshs 5 total revenue is 5 × 5 = Tshs 25. So an increase in price from Tshs 2 to 5tshs has resulted into an increase in total revenue from Tshs 12 to Tshs 25. Also before a decrease in price total revenue is 5 × 5 = Tshs 25 but after the decrease in price from Tshs 5 to Ths 2 total revenue is 2 × 6 = Tshs 12. So a decrease in price from Tshs 5 to Tshs 2 has resulted in a decrease in total revenue from Tshs 25 to Tshs 12. While an increase in price has resulted into an increase in revenue from Tshs 12 to Tshs 25.

3. *When Price Elasticity is Unitary:* If the price elasticity is unitary elastic a change in price of a commodity will cause a proportional change in quantity demanded. So there will be no effect on the total revenue. For instance, if price increase by

twenty percent, quantity demanded will also decrease by twenty percent, so there would be no change in the revenue.

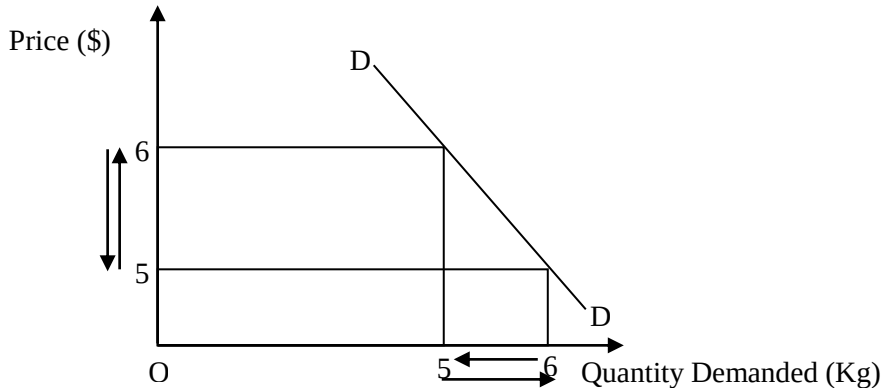


Figure: 5.15 Effect on revenue of price rise and fall when demand is unitary elastic

(i) Case I. Price Increase

In figure 5: 15 above, before the increase in the price from Tshs 5 to Tshs 6. The total revenue is 5 × 6 = Tshs.30 After the increase in price from 5shs to 6shs total revenue is 6 × 5 = Tshs 30 so an increase in price from Tshs 5 to Tshs6 has brought the same amount of revenue of 30Tshs.

(ii) Case II. Price Decrease

Before a decrease in price from 6sh to 5sh. Total revenue is 6 × 5 = Tshs 30. After a decrease in price from Tshs 6 to Tshs 5 total revenue is 5 × 6 = Tshs 30. So the decrease in price from Tshs6 to Tshs5 has brought the same amount of revenue of Tshs30.

4. *When Price Elasticity is perfectly elastic:* When price elasticity of demand is perfectly elastic price is constant therefore total revenue will be determined by the changes in the quantity demanded. When quantity demanded increase total revenue will increase and when quantity demanded decrease, total revenue will also decrease.

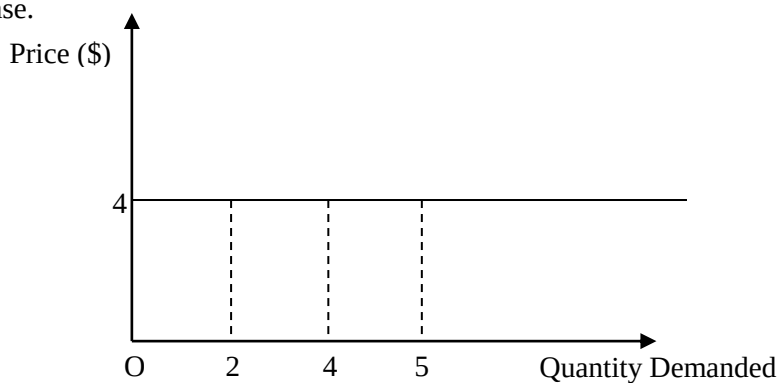


Figure: 5. 16 Effect on revenue of a price change when demand is perfect elastic

In figure 5.16, Total revenue increase when quantity demanded increase that is when quantity demanded is 2units total revenue is 2 × 4 = Tshs 8 when quantity demanded is 4units total revenue is 4 × 4 = Tshs 16 and when quantity demanded is 5 units total revenue is 5 × 4 = Tshs 20.

5. *When Price Elasticity is perfectly inelastic:* When price elasticity of demand is perfectly inelastic the same amount is demanded at any price level. Therefore total revenue will be determined by price only.

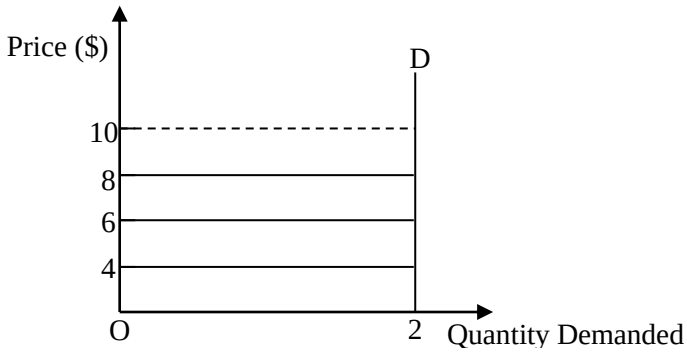


Figure: 5.17 Perfect inelastic demand

In figure 5.17 above. When price increase total revenue increase and when price decrease total revenue also decreases.

For example

Price = 4$, TR = 4 × 2 = 8$

Price = 6$, TR = 6 × 2 = 12$

Price = 8$, TR = 8 × 2 = 16$

Marginal Revenue Test

This a measure of the relationship between marginal revenue, price and elasticity of demand. It can be expressed as follows.

$$\text{Marginal revenue} = P\left(1-\frac{1}{ed}\right)$$

Where, P = Price, ed =point elasticity of demand:

- If elasticity of demand = 1, marginal revenue will be equal to MR = P(1-1/1) = P(1-1) = 0
- If elasticity of demand = 0, marginal revenue = P(1-1/0) = constant.
- If elasticity of demand is less than one let say 0.5 and price = 40, marginal revenue will be negative.

E.g. Given the value of elasticity = 0.5 and price = 40, Marginal revenue = 40(1 - 1/0.5) = -40. Marginal revenue test is very important for decision making by a monopolist. A monopolist will never produce at levels of output in which the elasticity of demand is less than one since it implies negative marginal revenue.

Profit Maximizing Concept

Profit is the amount which remains after substracting all costs of production or the cost of running a business. PROFIT = TR - TC. Profit can be classified into two types.

1. Economic profit
2. Accounting profit

- To an economist, profit is expressed by including even the implicit cost.
  Profit to an economist is equal to:-
  Economic profit = Total Revenue - Total Cost (Explicit Cost + implicit cost).
  Explicit Cost = Total Variable Cost + Total Fixed Cost
  Economic profit = TR - TC (EX + IMP).
- To an accountant

To an accountant profit is expressed as
Profit = TR - Total Explicit cost
Profit = TR - (TFC + TVC)
Marginal Profit: Is the additional profit obtained by selling one more unit of output.
MARGINAL PROFIT = MR - MC

☞**Note:** When marginal profit = 0, a firm maximizes profit.

Table 5.9 Example of a schedule showing TR, MR, MP, TC, ATC, MC, TP, AP and MP

Q	P	TR	MR	AR	TC	ATC	MC	TP	AP	MP
1	100	100	-	100	80	80	-	20	20	-
2	90	180	80	90	120	60	40	60	30	40
3	80	240	60	80	150	50	30	90	30	30
4	70	280	40	70	175	43.7	25	105	26.75	15
5	60	300	20	60	195	39	20	105	21	0
6	50	300	0	50	220	36.6	25	80	13	-25
7	40	280	-20	40	260	37	40	20	2.8	-60
8	30	240	-40	30	310	38.75	50	-30	-3.75	-90
9	20	180	-60	20	370	41	60	-190	-21	-120

Where
TR = Total Revenue
TC = Total Cost
MR = Marginal Revenue
AR = Average Revenue
ATC = Average Total Cost
MC = Marginal Cost
TP = Total Profit
AP = Average Profit
MP = Marginal Profit
P = Price
Q = Output

☞**Note:** A firm maximizes profit at a level of output where MC = MR or marginal profit = 0. In the above schedule, profit is maximized at 5 units of output.

Profit Maximizing Rules of a Firm

Rule 1. Total revenue and Total cost approach
Profit = Total revenue - Total cost

Under this approach a firm maximizes Profit when the difference between total revenue and total cost is at maximum.

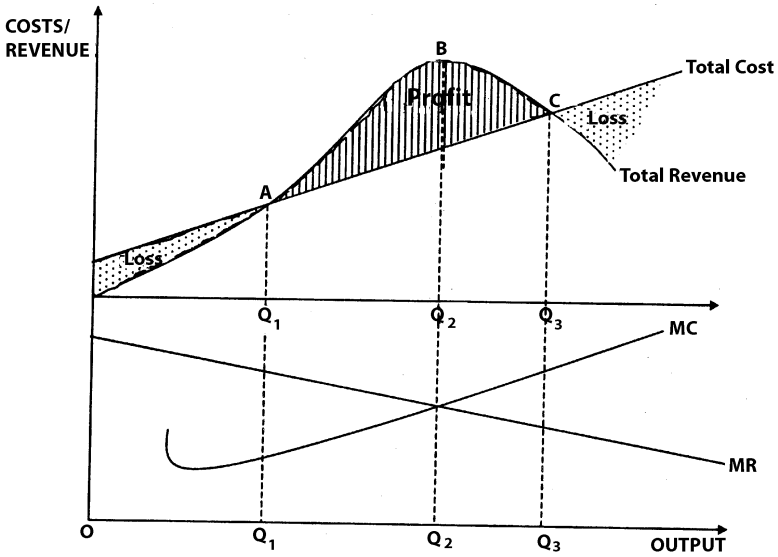


Figure: 5.18 Total revenue and total cost approach

In figure 5.18 above,

- Output OQ1, A firm makes loss because total revenue is less than total cost.
- Output 0Q1 to 0Q3 A firm maximizes profit because total revenue is greater than total cost
- After OQ3 A firm is making loss
- At output 0Q2 at point B a firm maximizes profit because at this level of output the difference between total revenue and total cost is at maximum.
- Output OQ3 (point C) TC = TR, therefore profit = O

Rule 2 Marginal Costs and Marginal Revenue Approach

Under this approach firms maximize profit on the following conditions

- Marginal Cost = Marginal Revenue.
- MC curve must cut MR curve from below
- Price

Profit Maximization of a Firm under Perfect Market

- *Short Run Condition:* In the short run firms under perfect market maximize profit given the following conditions.
  MC = MR
  PRICE
  MC curve must cut MR curve from below.
  Also in the short run firms get supper normal profit because in the short run there are fewer firms in the market than in the long run.

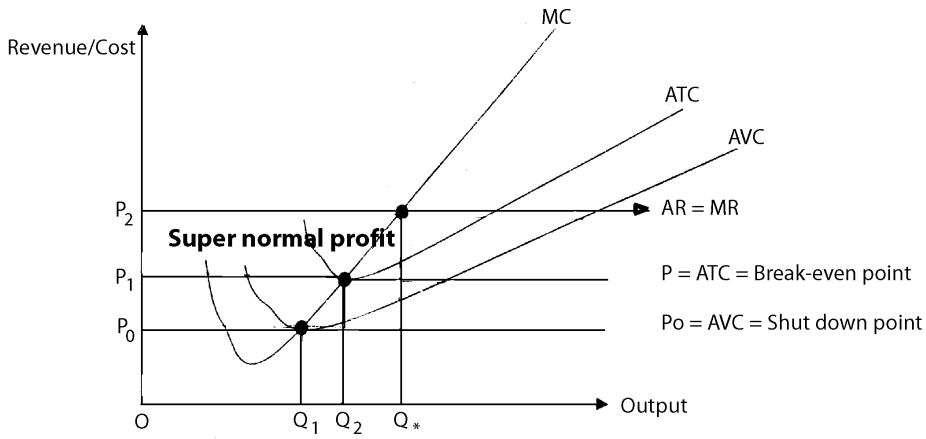


Figure: 5.19 Profit maximizing of a perfect market

In figure 5.19 above, a firm maximizes profit at output 0Q2 because at this level of output marginal revenue = marginal cost

Long Run Profit Maximization:

In the long run, firms under perfect market maximize profit on the following conditions

- Long run marginal cost = long run marginal revenue
- Long run marginal cost curve must cut Long run marginal revenue curve from below

Note: In the long run, firms under perfect market earns just a normal profit because of entry of many firms in the market, which want to enjoy a super normal profit. Longrun profit maximizing is shown in figure 5.20 below.

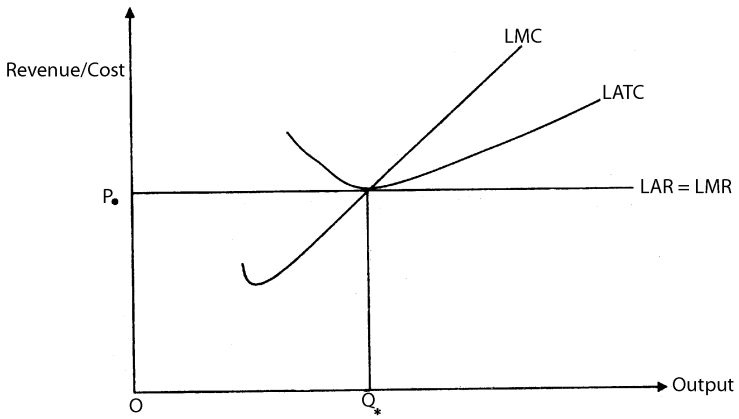


Figure: 5.20 Long run profit maximizing of perfect market

Loss under Perfect Market:

Firms under perfect market may make loss if price is less than ATC

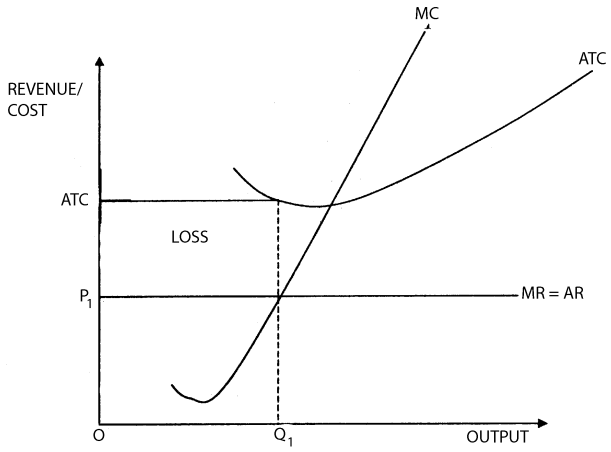


Figure: 5.21 Loss under perfect market

In figure 5.21 above, a firm gets loss because the market price $0P_1$is less than the average total cost.

Break Even Point and Shut Down Point

- *Break Even Point:* Is the point where a firm has succeeded to cover all costs of production both fixed and variable costs. At this point, a firm earns just a normal profit.
- *Shut Down Point:* It is the point at which a firm is able to cover only variable costs (running costs) it is a point where the firm's marginal cost is equal to average variable costs and therefore, a point where the firm starts to supply a commodity below this point it cannot cover variable costs it should stop production in order to avoid getting loss of both fixed and variable costs.

Break even and shutdown points are shown in figure 5.22 below.

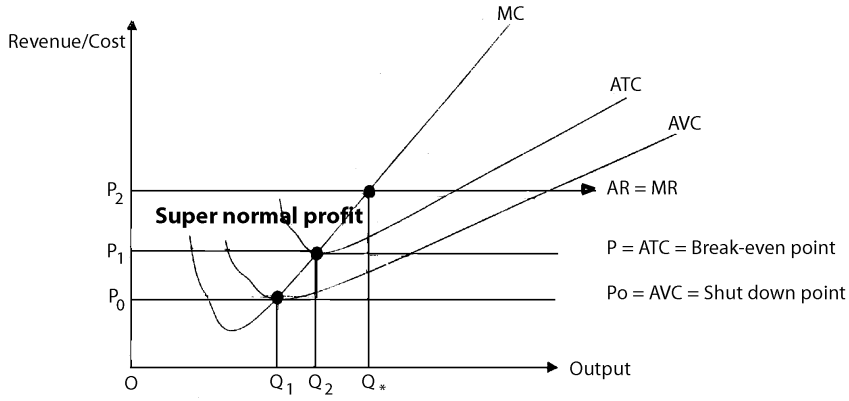


Figure: 5. 22 Shutdown and break even points

Short Run Supply Curve of a Firm

This is a part of marginal cost curve starting where MC = AVC up to a point where MC = MR. This is because a firm starts to supply at a level of price where price is equal to AVC. Any point below AVC, a firm will make loss because it cannot cover both average fixed cost and average variable cost.

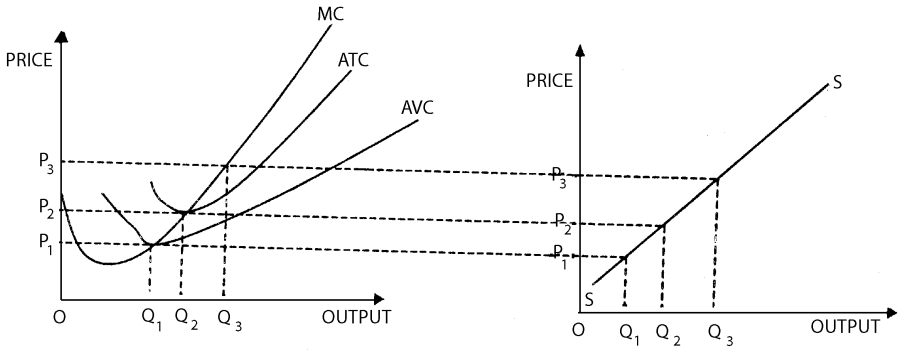


Figure: 5.23a *Figure: 5.23b*

In figure 5.23a above, the firm starts to supply at output 0Q1 when MC = AVC. At this point, a firm is able to cover variable costs. It will continue to increase output up to a point of profit maximization at output OQ3 where MC = MR. Therefore, a part of the MC curve from where MC = AVC at output OQ1 to output OQ3 where MC = MR is a short run supply curve as shown in figure 5:24b above.

Supply Curve of an Industry: This is the horizontal combination of supply curves of different firms in an industry.

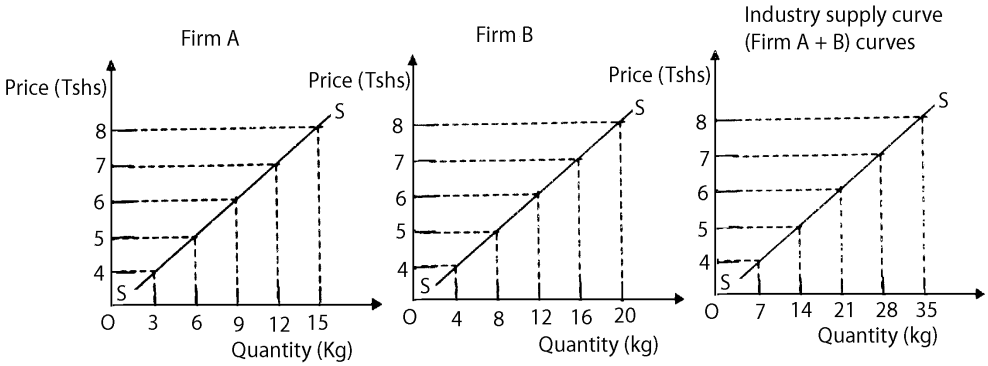


Figure: 5.24a *Figure: 5.24b* *Figure 5. 24c*

In figure 5.24c above, the Supply Curve for the industry is derived by the horizontal summation of the supply curves of firm A fig.5.24a and of firm B, figure 5.24b all above.

Equilibrium of an Industry

An industry is said to be in equilibrium when there is no tendency on the part of the industry to vary its output. That there is neither a tendency to expand output nor to contract it. The essential condition for the absence of any tendency for expansion or

contraction of industry output is that the demand for the product of the industry and the supply of it by the industry are in balance that is in equilibrium.
Unless the quantity demanded of the industry's' product and the quantity supplied of it are equal there will always be a tendency for the industry output to vary.

Conditions for the equilibrium of an industry

(i) The short run demand for and supply of the product from the industry must be equal.
(ii) All firms in the industry must be in equilibrium. Firms are in equilibrium under the following conditions:-
- Marginal cost must be equal to marginal revenue
- Marginal cost curve must cut marginal revenue curve from below.

Equilibrium of the industry in the short run is shown in figure 5.25a and 5.25b both below.

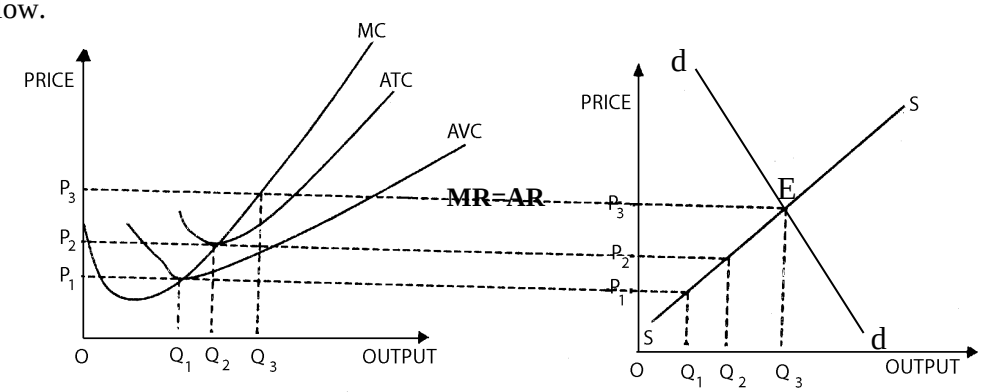


Figure: 5. 25a *Figure: 5. 25b*

The industry's short run demand and demand and supply curve is shown in figure 5.25b above. The equilibrium point is E at price 0P3 and output 0Q3. Firms will take price 0P3 as given and will adjust their output at the profit maximizing level.

The left hand side diagram shows that a firm in the industry will be in equilibrium at 0Q3 of output. If it is assumed that all firms in the industry are alike, in respect to cost conditions, then all firms like the one shown above should be making profit. Thus, while the industry is in equilibrium, that is, the demand for and supply of its product are equal and also all firms in it are in equilibrium, then the firms are making supernormal profit.

Profit Maximization of a Monopoly

Profit maximization behaviour of a monopoly can be explained by two approaches.
1. Total revenue *Vs* total cost approach.
2. Marginal revenue *Vs* marginal cost approach

Total Revenue Vs Total Cost Approach

Under this approach, a monopoly firm maximizes profit at a level of output and price where the difference between total revenue and total cost is at its maximum.
Total Revenue = Price × Quantity
Profit = Total revenue - total cost.

For example, given below.

Table 5. 9 Revenue and Cost of a Monopoly

Output (kg)	Price ($)	Total revenue ($)	Total cost ($)	Total profit ($)
5	20	100	120	-20
14	11	154	160	-6
24	9	216	216	0
35	7.1	248.5	238	10.5
45	6	270	255	15
50	5.5	275	257	18
55	5	275	260	15
60	4	240	240	0
65	3	195	200	-5
70	2	140	210	-70

The information in table 5.9 below can be used to show profit maximizing of a monopoly as shown in figure 5.24.

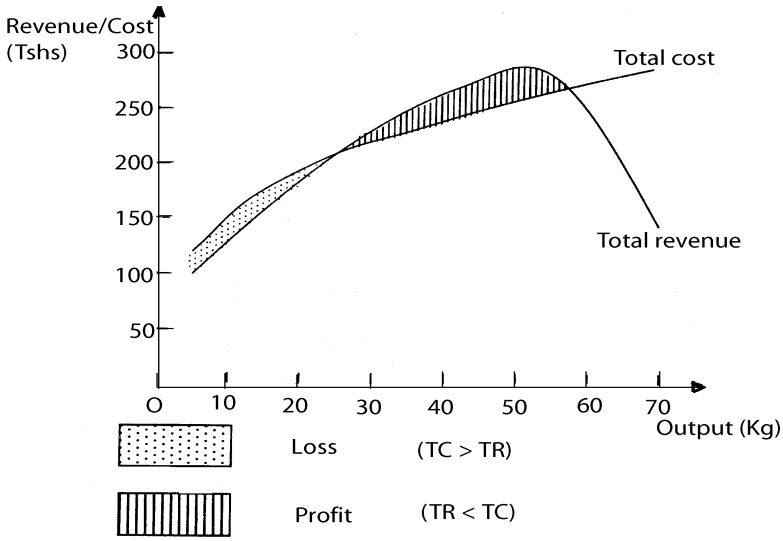


Figure: 5.26 Profit maximizing of a monopoly

In figure 5.26 above, maximum profit is at 50 units of output because at this level of output the difference between total revenue and total cost is at its maximum.

Marginal Revenue Vs Marginal Cost Approach

Under this approach, a monopoly maximizes profit on the following conditions:-

- Marginal cost must be equal to marginal revenue and marginal cost curve must cut marginal revenue curve from below.
- Price is greater than or equal to average total cost
- A firm earns a super normal profit.

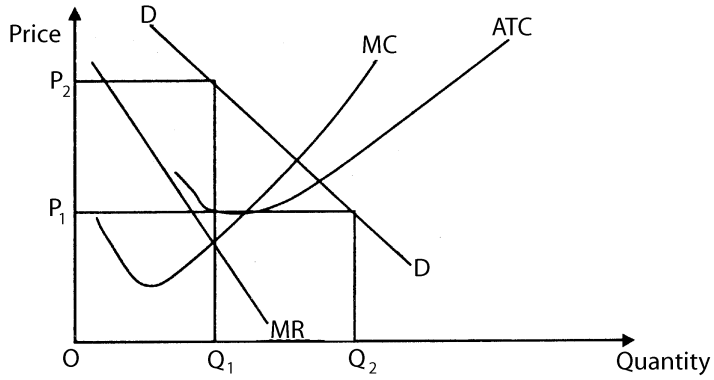


Figure: 5.27 Marginal revenue and marginal cost approach

From figure 5.27 above, a monopoly maximizes profit at output $0Q_1$ where Marginal cost (MC) = Marginal revenue(MR)

Reasons Why a Monopoly Maximizes Profit at $0Q_1$

- Any output less than Q_1 the addition to total revenue that is marginal revenue is greater than the addition to total cost. A firm can get more profit by increasing output towards Q_1.
- Any output above Q_1, let say Q_2 the addition to total cost is greater than the addition to total revenue (MC > MR). A monopoly will incur loss by producing at this level of output. Therefore, it will have to reduce output towards Q_1.
- At output Q_1 the addition to total revenue is equal to the addition to total cost (MC = MR). Therefore, a firm maximizes profit at this level of output.

However in the long run a monopoly may obtain just a normal profit.

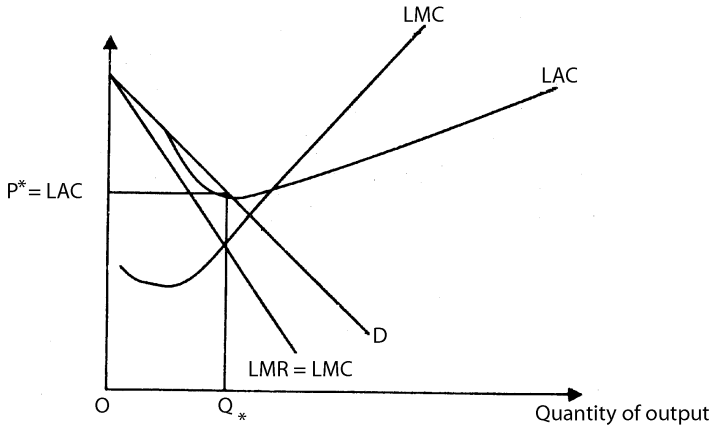


Figure: 5.28 Profit maximizing in the longrun

In figure 5.29 a monopoly maximizes profit at output Q_* but makes just a normal profit because price = long run average cost.

Monopoly Loss

In very rare situations a monopoly may incur loss due to inefficiency.

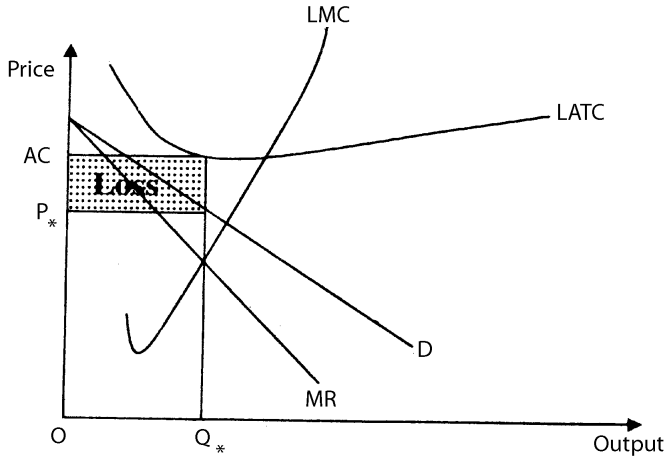


Figure: 5.29 Monopoly loss

The shaded region in figure 5.29 above, indicates a monopoly loss because long run average total cost is greater than price P*. **Measures of Controlling a Monopoly**

- *Liberation of the Market*
- If the monopoly emerged through legal restrictions the government can liberate market so as to allow firms to enter the market.
- The government can eliminate monopoly by providing credit and subsidies to other firms in case a commodity requires high initial capital outlay.
- A government can either reduce production tax or input tax to enable other firms to join the market or it can impose heavy taxes to a monopolist in order to discourage the monopolist from continuing with production
- *Price Control:* The government can control the monopolist by forcing him to reduce the price to a level, which is equal to average total cost so that he does not earn a supernormal profit. For instance the diagram below shows the case of normal profit for a monopolist.

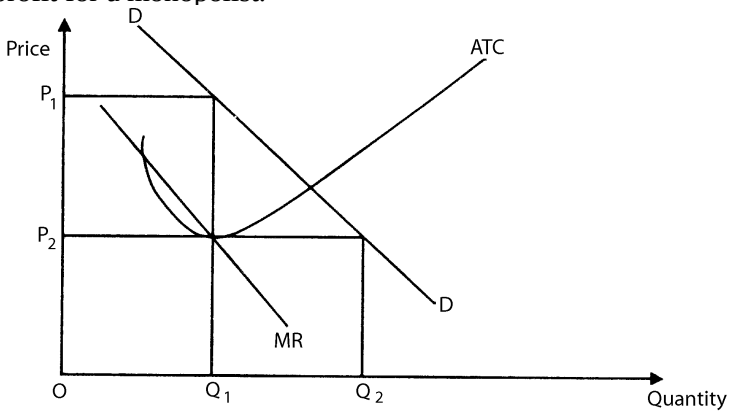


Figure: 5. 30 Control of monopoly

In figure 5.30 above a monopoly has been forced to reduce the price from P_1 to P_2,in such case the monopolist earns a normal profit.

- *Anti-trust policy:* This is a policy of controlling a monopoly in which the government orders for the break up of established monopoly into several firms.
- *Taxing monopoly profit:* Apart from controlling prices directly the government may tax monopoly profits so as to create an incentive for monopolies to reduce prices and profits.
- *Rate of return regulation:* This is a policy of restricting utility companies to the maximum rate of return on the capital they employ so as to reduce their rate of returns and comply with the regulation.
- *The public ownership of monopolies:* The problems caused by a monopoly may be reduced or cleared if private monopolies are nationalized that is taken into public ownership.
- *Merger policy:* This is a policy which restricts takeovers or combinations of firms that may lead to the emergence of a monopoly firm.

Equilibrium of a Firm under Monopolistic Competition

- *Short-Run Equilibrium:* In the short run a firm under monopolistic competitive market maximizes profit at the level of output where marginal cost is equal to marginal revenue and marginal cost curve cuts marginal revenue curve from below. In this case price is greater or equal to average total cost.

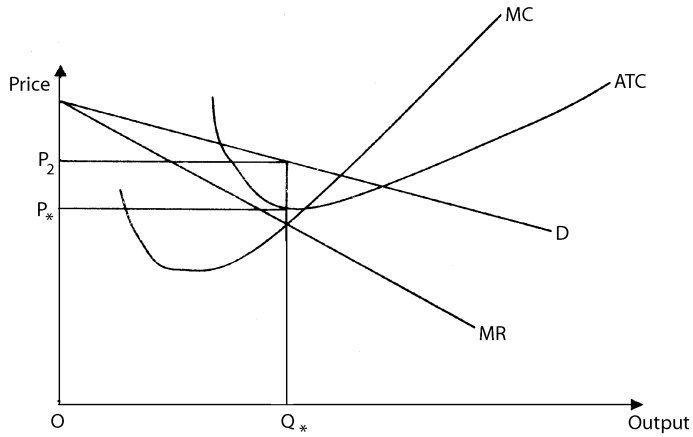


Figure: 5. 31 Profit maximizing of monopolistic competition

In figure 5.31 above, a firm maximizes profit at output $0Q*$ where marginal revenue is equal to marginal cost.

- *Long-Run Equilibrium:* In the long run, a monopolistic competitive firm maximizes profit at the level of output where the long run marginal cost is equal to the long run marginal revenue and the long run marginal cost curve cuts the long run marginal revenue curve from below. In the long run a firm is earning just a normal profit because of the entry of many firms to the industry.

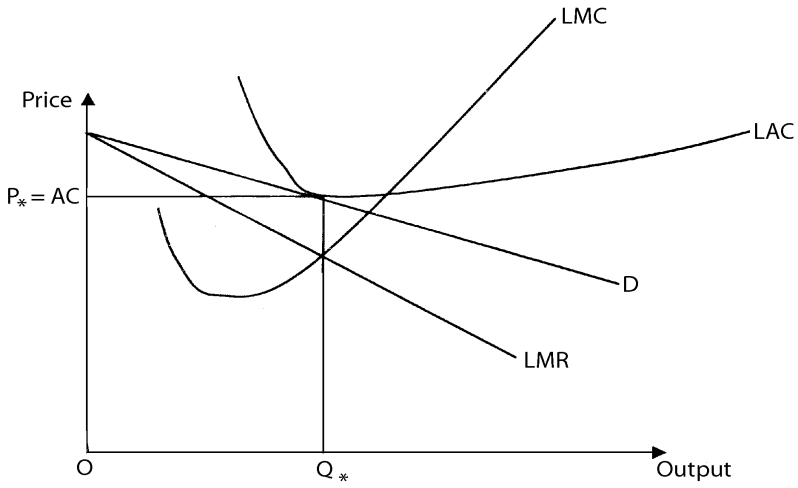


Figure: 5.32 Longrun equilibrium of a monopolistic competitive market

In figure 5.32 above, a firm maximizes profit at output Q∗ where MC = MR. Any output below or above Q∗, a firm will make less profit or a loss respectively.

Scale of Production

This refers to the quantity produced (volume of goods produced), and the technique used in production. If greater quantity of commodity is produced then the scale of production is said to be large, while if smaller quantity of commodity is produced then the scale of production is said to be small. The scale of production depends upon the following factors:

- *Availability of capital and labour*: If capital and labour are available in a large quantity, they may facilitate an increase in the scale of production while if capital and labour are available in a small quantity then production becomes low leading to a small scale of production.
- *Size of the market*: If the size of the market is large it may stimulate more production hence the scale of production will increase but if the size of the market is small it will discourage production and consequently the scale of production will be small.
- *Technological levels*: Advanced technology enables large-scale production to take place while poor technology limits the size of production. It is easier to increase production by using advanced technology than by using poor technology.
- *Availability of infrastructures*: Availability of efficient and effective infrastructure such as transport and communication networks stimulates production activities and facilitates the transfer of goods from the areas where they are produced to areas where they are needed for consumption. In this case availability of infrastructure enables large-scale production to take place while lack of infrastructure discourages production and therefore scale of production becomes small.

Types of Scale of Production

Scale of production can be divided into two parts.

Large Scale Production

This is the scale of production in which a large output is produced since the amount of input used in the production process is also large.

Advantages (Merits) of Large Scale of Production

- Large scale production can minimize cost and maximize profit by buying inputs in a large quantity at a reduced price.
- Large-scale firms have the advantage of raising their capital through financial assistance from banks because large-scale firms have securities (assets) which can help them borrow money from banks. Also, they have the ability to raise more capital by selling shares of ownership to the public.
- Expansion of market: large scale firm have the ability to expand market for its products through advertisements for its products, doing market research and sales promotion. This is possible because large firm have the resource capacity which is enough to engage in such marketing methods.
- A large firm can produce a variety of goods as a safeguard against a fall in demand for one of the goods.
- A large scale firm may increase efficiency of production through its ability to employ advanced technology and skilled labour.
- Also, division of labour/specialisation is possible because of the large number of workers and facilities. For this case the output and efficiency may increase.

Disadvantages (Demerits) of Large Scale Production

- *It involves large cost of administration and supervision:* When a firm expands its size it must increase the size of manpower and the number of sections or departments, this increases cost of administration and supervision.
- *It is very difficult to make decisions in a large - scale production:* Decision making involves a number of people in which it may be very difficult to reach agreements, also decision making becomes very bureaucratic, that is, it involves so many procedures/stages before being made, hence leading to delay in making decisions and implementation.
- *It needs large initial capital outlay:* A large scale firm demands a large amount of capital in order to start production. Large amount of capital is needed to buy physical capital such as machinery, raw material, means of communication and also to employ skilled and unskilled labour.
- *Large scale firms can be affected by the problem of market for its products:* If the size of demand for its products is smaller, as compared to the output produced the firm will encounter the problem of loss.
- *There is less self - interests for the managers in a large-scale firm than in small-scale firms:* For this case managers in large-scale firms are sometimes less motivated and committed. This results into the fall in efficiency at work.

Small Scale Production

This refers to the kind of production in which both the quantity of output produced and the resources employed are small.

Advantages (Merits) of Small Scale Production

- *Small scale production demands small initial capital* because a small scale firm does not need large amount of resources to start production
- *It is easy to control a small scale firm* because of the small number of activities and manpower.
- *Quick decision making process.* In a small scale firm it is very easy to make decisions because the number of people involved in decision making is very small. Sometimes a single person makes decisions. hence decisions are made in a short period of time
- *In a small scale firm the owner can give personal attention to his/her customers hence meet their particular preferences.* This helps to build a friendly relationship (rapport) between the customers and a firm.
- *Low operating and administrative costs.* A small-scale firm incurs less operating and administrative costs because of small number of functions, sections and manpower.
- *The owner of the business is more highly motivated and committed,* than salaried managers in large scale production.

Disadvantages of Small Scale Production

- *Limited possibilities of expansion.* A small scale firm can not expand into a larger size because of the small amount of capital and profit which makes it very difficult to expand.
- *A small-scale firm is faced with a problem of increase in average cost* - because of small amount of output, which is produced by small firm. When the output produced is small the average cost becomes high.
- *Uncertainty of continuity.* A small scale firm has a possibility of declining (risk declining) because of several reasons such as:-
  - High average cost.
  - Small amount of capital.
  - The death of the owner etc.
- *Limited division of labour.* In a small-scale firm, division of labour is very difficult because of the small number of labour and limited number of processes. This may affect efficiency of work.
- *A small - scale firm cannot produce a variety of goods* due to limited capital this affects a firm when the demand for its products declines.
- *A small - scale firm cannot win the market for its products* in a situation where there is high competition. Because a small firm lacks the required resources to market its products, advertise its products or make sales promotion as large firms do.
- *A small scale firm may be faced with inefficient production* because of its inability to employ advanced technology and skilled labour.

Economies of Scale

These are the advantages, which are obtained by a firm when it expands its size of production. There are two types of economies of scale.

1. Internal Economies of scale.
2. External economies of scale.

Internal Economies of Scale

These are the advantages obtained by a single firm, when it expands the size of production. The following are the internal economies of scale.

- *Financial Economies*: When a firm expands its size of production it becomes possible for the firm to obtain financial assistance from banks at a lower rate of interest because of its assets which may act as security for securing the loans. Also, when a firm expands its size of production, it can increase capital (Its financial position) by selling shares to the public.
- *Marketing Economies:* When a firm expands production it can acquire necessary resources for marketing its products through advertising. Also, the unit cost of marketing large output is smaller than of smaller output for example if it costs sh.40,000 to advertise soda products in a TV for two minutes, a firm which produces 30 crates per day will pay the same advertisement cost as a firm which produces 60crates per day.

  Likewise, the unit cost of distributing large output to the markets is much smaller than that of smaller output for example the fare cost or fuel cost of transporting 40tons by a car is similar to the cost of transporting only 5tons.
- *Economies in Buying of Input at Cheaper Price:* When a firm expands production it can have the ability to buy inputs. Such as, raw materials in a large quantity/bulk at a discounted price.
- *Economies in Decreasing Average Cost:* When the output increases the average cost that is cost per units of output tends to decrease.
- *Technical Economies:* When a firm expands, it also expands its machinery capacity. In this case, a firm can be able to produce large amount of output. Without necessarily incurring additional cost like the cost of paying an operator who operates a machine which can produce 20000 units of a commodity per day can be the same to that of an operator who operates a machine with the production capacity of only 5000 units per day. Also larger machinery permits specialization of workers enabling them to gain skills, avoid time wasting interchanging of locations and equipments these will lead to reductions of unit costs and increase in output.
- *Economies in Administration:* There will be economies in administration since an increase in output will not necessarily lead to increase in number of office staff, the large firm too can still utilize the existing office machinery and therefore incur almost the same administration cost.
- *Research Economies:* An expanding firm can easily make research on modern technology advancement .which enables the firm to improve output and to reduce unit cost.
- *Economies in the Use of Factors of Production:* There can be economies in the use of factors of production since to increase output by a certain amount may not necessarily require employment of extra input by the same proportion, for example, a farmer can double output by applying better methods of cultivation and modified seeds without increasing acres of land and more labour force. Also greater division of labour and specialization are possible.
- *Economies of Specialization and Division of Labour:* An expanding firm has a large possibility of specialization and division of labour, which leads to the increase in output and fall in the cost of production per unit.

- *Price Reduction Economies:* A large firm can spread risks or eliminate them by producing varieties of products that will help a firm to sustain in case the demand for one product falls.
- *Managerial Economies:* An expanding firm can reduce managerial cost by establishing autonomous departments or by grouping a number of departments under one management in which the cost of management will not expand even when the size of the firm is large.
- *Storage Economies:* Storage per unit output declines when final products or raw materials are stored in a large quantity because the cost of rent of large quantity is the same to that of the small quantity. For example, if a firm has stored in a go down a thousand sacks of crop the rent will be the same as that of only twenty sacks stored in the same facility.
- *Transport Economies:* When commodities are transported in bulk the costs of transport per unit is lower than when the quantity is small for example, the cost of transporting five hundreds crates of *coca cola* drink per trip is the same as that of transporting fifty crates of the same type of drink.

External Economies of Scale

These are economies, which are obtained by all the firms in a particular industry due to localization (agglomeration), that is, concentration of many firms in one area.
External economies of scale are shared by many firms when the scale of production of one firm or all the firms expands. The following are the external economies of scale

- *Infrastructural Facilities:* When firms expand production in a certain area it can lead to the development of infrastructure, for example, roads and communication networks, as a result all the firms in that area will benefit.
- *Availability of Factors of Production:* When firms have concentrated in a certain area, it can be ease to obtain factors of production such as raw materials, skilled labour and machines. These inputs may be supplied by firms that are found in that area.
- *Decrease in the Cost of Production:* Some costs of production like transport costs and wages may be reduced when many firms operate in a given area, for example, when there is improvement of road transportation all the firms will benefit and the cost of transportation will decrease.
- *Regional Division Of Labour:* When an industry is localized in a certain area, it is possible for each firm to specialize in a certain process of production and enjoy economies of scale by selling its products to other firms, for example, if a textile industry is localized the firms in that industry can specialize in particular processes as follows:
  FIRM A - Production of threads
  FIRM B - Weaving of threads
  FIRM C - Designing of clothes
  FIRM D - Production of clothes

  Each firm above enjoys advantages of division of labour namely; increase in output, increase in efficiency, saving time between processes and increase in the skills to workers.

- *Government Assistance:* Firms which are localized in a certain area may enjoy various assistance which can be provided by the government. For example, tax relief, subsidies, protection through import control, infrastructure such as electricity and water supply systems, roads etc.
- By-Product: It is often possible to produce one product besides producing another. Thus, coke is a by - product of gas production. In the case of very small firm a by-product, produced a in very small quantity, may be regarded merely as waste. One of the advantages of large scale production is that use can be made of such wastes, which then becomes by-products.

Diseconomies of Scale

These are the disadvantages that/firms experience when expanding the scale of production, that is, when a firm grows bigger it experiences several problems known as diseconomies of scale. These diseconomies of scale are as follows:-

- *Increase in Costs*: When a firm expands there are various costs, which increase, such as: The increase in costs of distributing the large amount of output it produces, the increase in costs of operation and administration, the increase in amount of money for wages of the additional staff, the increase in costs of marketing its amount of output through advertising, market research and sales promotion and the increase in costs of buying inputs due to the increase in their demand.
- *Difficult in Controlling Production:* As a firm expands it produces large amount of output which may be difficult to be controlled by the management, this may lead to wastage of some resources in the production process, theft, lower availability of goods produced, overproduction etc.
- *Difficulty in Management and Controlling of Labour:* As a firm becomes bigger it employs more units of labour who become very difficult to control hence the need for additional supervisors which increase costs.
- *Marketing Diseconomies:* As a firm expands it produces large amount of output which may bring problems in finding market in which case the firm may be forced to use a lot of its resources to market the products. The resources will be used in advertisements, sales promotion, market research, distribution facilities etc.
- *Financial Diseconomies:* As a firm expands it needs additional funding (working capital) which may not be readily available and therefore force a firm to borrow from financial institutions, this will increase the burden of debt in terms of interest rate.
- *Technical Diseconomies:* Expanding the size of the firm may mean employing an advanced or sophisticated technology, which may be very expensive to buy and to operate. Also, after a certain time the machines will undergo wear and tear, which will cost the firm a lot of money.
- *Diseconomies of Division of Labour:* Increase in the size of the firm necessitates the need of division of labour and specialization which may lead to increase in costs of paying specialists who are employed in different areas of specialization or processes.
- *Diseconomies of Standardized Products:* As a firm expands, it tends to produce highly standardized products, which may not cater for the individuals' tastes and

preferences. This forces a firm to use a lot of resources in advertisement in attempt to persuade the consumers to buy the product.

- *Diseconomies of Bureaucratic Decision Making:* A large scale firm tends to be bureaucratic in decision making because of the complex nature of the management, large number of decision makers, large number of departments and a lot of procedures which should be followed. This affects a firm in a number of ways such as delay in decision-making, failing to adapt quickly to changing demand and supply conditions and monetary costs of holding meetings such as buying some stationery and allowances paid to managers whenever they meet in a number of meetings for the purpose of making decisions.

Economies of scope

A firm may achieve cost reductions as a result of producing two or more products at the same time rather than producing these products separately. If so, the firm is said to benefit from economies of scope. A bank, for example, may provide banking services to a customer, is also able to offer a range of insurance products. It is, therefore, be less costly for the bank to offer both banking and insurance than other companies to offer these services separately. This is because a single bank employee can deal with both transactions. If these were to be offered by a separate bank and insurance company, two employees would have to transact the business, resulting into a higher cost.

Survival of Small Scale Firms

Why small-scale firms survive alongside large scale firms for example why mama Ntilie in urban areas survive and flourish while there are big hotels.

Small scale firms survive alongside large scale firms due to the following reasons:-

- *Small Initial and Running Capital:* Unlike large-scale firms small-scale firms need small capital to start business and carry various operations, therefore, they have a large possibility of surviving even if they have small capital.
- *Some Small Scale Firms Supply Inputs to Large Scale Firms:* In some cases, small scale firms may supply inputs such as raw materials to large-scale firms. This situation creates interdependence between small-scale firms and large-scale firms and enables the small scale firms to survive. For example, the Kilombero Sugar Company is an example of a large firm owning the sugar cane estate, but still there are small scale peasants (out growers) who grow sugar cane on small scale and supply to the company. Also small scale dairy farmers who produce milk in their dairy farms and sell the milk to a big dairy company. For example, Tommy dairy in Dar es Salaam apart from the milk products from its own farms, it also buys from the small scale dairy farmers.
- *Small Extent of the Market:* Where the size of the market is small the small-scale firm is likely to benefit more than a large-scale firm because small scale firm produces smaller units of outputs than a large scale firm. Also small amount of output produced by a small-scale firm are very easy to dispose off than large amount of output.
- *Direct Contact with the Customers:* A manager in a small scale firm has direct contact with his/her customers, which enables him/her to know individual's tastes and preferences of the customers. This increases customers' confidence, unlike in a large scale firm where managers do not have a chance to have a direct contact with

their customers, therefore, fail to cater for individual's tastes and preferences of the customers.

- *Simplicity in Techniques of Production, Small Amount of Resources:* Some activities, by their nature use simple techniques of production and employ small amount of resources. In such case they are undertaken in a small scale. Examples of such activities are shoe shining and repairing, tailoring, hair dressing etc.
- *Special Government Protection Policies:* The government may have purposeful policies to protect and promote small scale firms either for economic or political interests, for example, in Dar es salaam region in Tanzania the Government has been helping the Small scale traders like the street hawkers (*machingas*) by establishing selling centres like in Kijitonyama, Makumbusho, Temeke stereo, Machikichini, around the Karume stadium and Urafiki where well constructed structure have been built to accommodate small scale traders. Also the government may have special policies of providing loans to small scale firms for example in Kenya the government assists the *Jua kali industry*, the small scale tea growers and in Tanzania the government has special fund like the Tanzania Social Action Fund to help small scale business as well as the industrial policy which encourages development of small industries that is *SIDO*. In Uganda the government assists Special Women Group who exports textile products.
- *Ease Management:* Small scale firms are easier to manage than large scale firms due to small amount of resources, for example, small number of labour force and working capital, which enable a firm to have a simple combination of inputs and simplicity in controlling the production process and the resulting output.
- *Small Scale Firms Are Less Bureaucratic than Large Scale Firms:* Small scale firms are less bureaucratic in decision making concerning economic questions such as deciding what to produce, how to produce, for whom to produce etc. This enables the firms to adapt quickly to the existing demand and supply conditions unlike large scale firms which are more bureaucratic in decision making due to large number of decision makers, departments, procedures, paperwork and low commitment of salaried managers.

Localization of Industry*:* Is the concentration of many industries in one area for example fish industries in Mwanza Tanzania, Pugu industrial area, Ubungo and Mikocheni in Dar salaam, Jinja in Uganda, The Rhur in German and the Rand in South Africa.

Factors for Localization of Industry

- *Presence of Raw Materials:* Raw materials may attract the establishment of many industries in one area. For example, in Tanzania, there are many fish canning industries around Lake Victoria because of the large stock of fish in the Lake Victoria. Also the availability of cotton in the lake zone attracted the establishment of textile industries such as Mwatex, Musoma tex and so many other semi processing textile industries (ginneries) in the area. The cotton belt also attracted the development of textile industries in different towns in the belt like in Texas in the U.S.A.
- *Existence of Large Market:* Many industries tend to concentrate in areas where market for the final products is large. For example, most of the consumer goods industries are located around big market centres of big towns like Dar es salaam in

Tanzania (Dar Breweries, Tommy Dairy, Kibuku, Urafiki, Coca cola Kwanza etc) and Kenya in Nairobi (soap industries) and Mombasa (textile industries).

- *Availability of Power:* Power is the major input in the process of production. During the early times, when coal was a major source of power, industries were built in areas where coal was extracted. For example, the Rhur industrial conurbation of German, Pittsburgh in the U.S.A and the Coals fields of Great Britain. Also in Tanzania in Rungwe district Tea industry has been established due to the presence of the Kiwira Coal mine. However in recent years electricity has replaced coal as a source of power and it has spread in many places especially towns making it possible for industries to be located around these areas like in Dar es Salaam in Tanzania.
- *Availability of labour:* Industries, which use labour intensive method of production, tend to concentrate in areas where there is availability of great amount of cheap skilled and unskilled labour.
- *Infrastructure facilities:* Reliable infrastructure such as transport and communication systems facilitate production, distribution and exchange processes and therefore attract establishment of industries. For example, in the East African countries, many industries have been established in major cities and towns like Mwanza, Dar es salaam, Nairobi, Jinja and Kampala because of the presence of good infrastructure like roads, ports, telecommunication networks etc.
- *Financial facilities:* Industries need banks for securing working capital in terms of loans, transferring of funds, depositing money, paying their suppliers of input, receiving money from the customers and other financial services; due to this fact many industries are located in places where there are financial institutions.
- *Administrative Centers:* For security reasons and government assistance industries tend to be established in areas where the government has established its administrative centers.

Advantages of Localization of Industry

Localization of industries has the following advantages (merits):-

- *Development of Infrastructure:* In areas where many industries have been established, infrastructure such as roads, electricity supply systems and communication networks are also developed.
- *Research Development:* Firms can carry out joint research on least cost method of production and develop a technology that can improve production.
- *Development of Financial and Marketing Activities:* Concentration of many firms in one area may stimulate development of financial institutions like banks and growth of organized marketing activities. These banks in turn provide credit facilities, means of payments, safekeeping of financial assets to the industries and the community at large.
- *Development Social Services:* Localization of industries may lead to establishment of social services like schools, hospitals within in the areas. Thus it does benefits both workers of the industries and surrounding members of the community. Employees by setting these services may become more efficient and effective.
- *Development of Towns and Expansion of Market Size:* Localization leads to the development of towns, cities and other human settlements. These may expand the market for the products of the industries.

- *Availability of Labour:* Localization attracts labour and leads to an increase in the efficiency in production hence increase in output. The labour supply become more reliable because labours always migrate to those areas where there are many industries to be assured of getting employment.
- *Regional Division Of Labour:* Localization enables regional division of labour among firms in an industry, firms may specialize in different processes of production of a commodity and enjoy economies of scale. For example, in a textile industry firms A, B, C and D may specialize in production of threads, weaving, designing and production of clothes respectively.

Disadvantages of Localization

- *Massive Unemployment:* Localization subjects an area in which industries are localized to mass unemployment when industries operating in that area collapse due to economic changes such as fall in demand and technological changes.
- *Congestion:* Localization leads to an increase in population settlement, congestion in public services such as roads, hospitals, schools, water supply these often lead to poor standard of living.
- *Environmental and Social Problems:* Localization normally is not planned by the central government hence it leads to some environmental degradation such as air pollution (through emission of gases, some of which are poisonous), water pollution, soil pollution, and noise pollution emanating from cars and industries.
  Likewise localization of industries can lead to population explosion in an area which in turn can lead to the occurrence of social problems like diseases, prostitution, crimes etc.
- *Regional Economic Imbalances:* Localization precipitates imbalances in economic development among regions in the country. Regions where industries have been localized are more developed than the regions which lack industries. For example, in Tanzania. Dar es salaam is more developed than many other regions like Kigoma, Rukwa, Mtwara etc because of having many industries. Even local governments in areas where many industries are localized have more tax revenues than where there are very few or no industries this enable them to provide better social services like education, health services, water and electricity.
- *Rural - Urban Migration:* When industries are localized in a certain area people in other areas where there are no industries such as in rural areas migrate to the areas where there are industries (in towns) in search of employment and other means of earning a living like trade. For example, in Tanzania people from upcountry regions famously known as *machingas* have been migrating to major towns like Dar es salaam for the purpose of securing employment or carrying out small scale business like hawking of clothes or different home facilities like utensils.
- *Decline in Economic Activities in Rural Areas:* As a result of migration of young and energetic people from the rural areas to towns so as to work in industries, the rural economic activities like agriculture tends to decline due to the shortage of effective and efficient labour force.

Laws of Returns to Scale

These are the laws, which show a proportionate change in output due to change in units of input. There are three laws of returns.

- *Increasing returns to scale:* This occurs when a proportionate increase in input brings a larger than proportionate change in output, for example, when a double increase in input results into a quadruple increase in output.
- *Constant returns to scale:* This occurs when a proportionate increase in input causes an equally proportionate increase in output. For example if output is doubled due to a double increase in input.
- *Decreasing returns to scale:* This happens when a proportionate increase in input brings a less proportionate increase in output. For example, when input is tripled output is only doubled.

Table 5. 10 Output of a firm showiong returns to scale

Units of labour	**Units of land**	**Total product**	**Marginal product**	**Returns to scale**
1	1	3	-	Increasing returns
2	1	7	4	
3	1	12	5	
4	1	18	6	
5	1	25	7	Constant returns
6	1	32	7	
7	1	39	7	
8	1	43	3	Decreasing returns
9	1	45	2	
10	1	46	1	

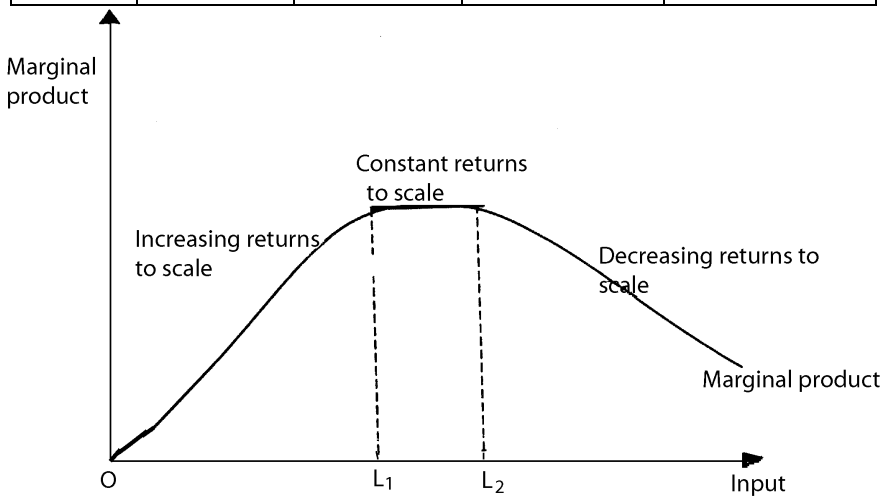


Figure: 5.33 Laws of returns

In figure 5.33 above,
OL_1 - Indicates increasing returns to scale
L_1L_2 - Indicates constant returns to scale
L2 - Onwards indicates decreasing returns to scale

Assumptions of the Laws of Returns

- Technology should remain constant. Technology is assumed to be constant, if technology changes, diminishing returns will not occur.
- It applies only in the short run and one factor is fixed
- It assumes homogeneous factors of production i.e. are identical in everything.

Relation Ship between Economies of Scale and Laws of Returns

Economies of scale are concerned with the lowering of costs as output produced increases while laws of returns are concerned with the effects of increasing or decreasing inputs to quantities produced.

- If a proportionate increase in input leads to a greater than proportionate increase in output and therefore a fall in the cost per unit of output, a firm experiences economies of scale.
- If a proportionate increase in input leads to an equally proportionate increase in output, and therefore to a constant cost, a firm experiences constant returns to scale.
- If a proportionate increase in input leads to a less than proportionate increase in output and therefore increase in the cost per unit a firm experiences diseconomies of scale.

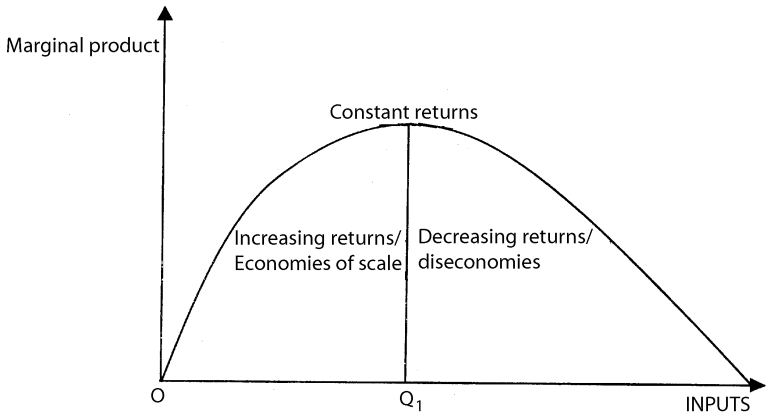


Figure: 5.34 Relationship between economies of scale and laws of returns

In figure 5.34 above, output OQ1 is the optimum size. A firm expands towards this point it will be enjoying increasing returns to scale or economies of scale but any output beyond OQ1 above, the firm will be experiences diminishing returns or diseconomies of scale.

Optimum Firm

This is a firm which has reached its most efficient size, at which its costs of production per unit of output is at minimum, such that it has no motive either of expanding or reducing its scale of production.

Thus, as a firm expands towards the optimum size, it enjoys economies of scale but if it goes beyond the optimum diminishing returns will set in.

Factors Affecting Optimum Size of a Firm

- *Economic Progress in the Country:* Whenever there is economic progress in the country many firms may reach the optimum size unlike in a situation of economic downturn.
- *Technique of Production:* When a firm develops a new and efficient technique of production, it may easily reach the optimum size unlike when it is employing a less efficient technology.

- *Availability and Price of Resources:* The optimum size of the firm largely depends on the availability and the cost of the input used in the production process. If a firm employs cheap input and these inputs are available in large quantity the firm will reach the optimum quickly.
- *Efficiency of Factors:* Optimum size of the firm is also a function of efficiency of factors of production. If a firm employs efficient factors of production it will achieve the optimum size so easily.

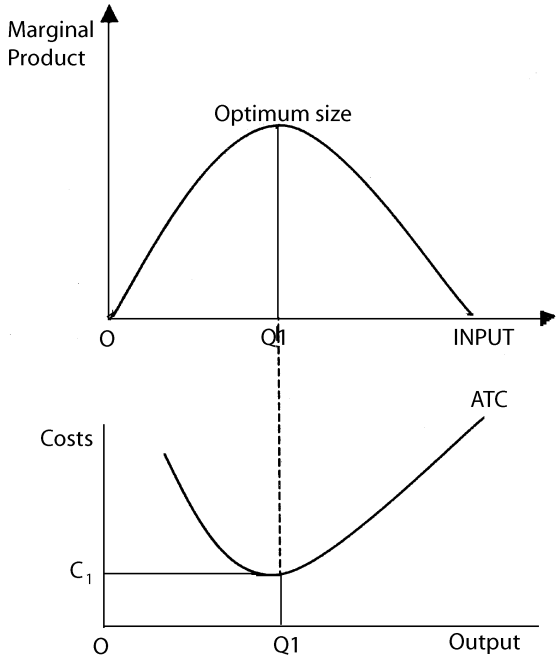


Figure: 5. 35 Optimum size of a firm

In figure 5.35 above, output OQ1 is the optimum size of the firm, thus as a firm expands towards the optimum size it enjoys increasing returns to scale but if it goes beyond the optimum, diminishing returns will sets in and the average total cost start to rising.

TOPIC SIX

PRICING OF FACTORS OF PRODUCTON OR THE THEORY OF DISTRIBUTION

This theory deals with the factors of production (rewards for the factors or price of factors) due to the service of these factors in the process of production.

Table 6 .1 Payment to factors of production

Factors	Payments
Land	Rent
Labour	Wages
Capital	Interest
Entrepreneurship	Profit &Loss

The theory of distribution is, therefore, concerned with the distribution of incomes among the factors of production it describes the amount of income that each factor of production earns after the process of production. It answers the fundamental economic question on who gets what out of the output or income produced.

The Payment for Labour

The payment for labour is wages. Wages are the amount of money paid to a labour for its services or efforts in the process of production. Wages can be classified into two.

1. Nominal wages or money wages
2. Real wages.

Nominal Wages

This is the actual amount of money a worker receives at the end of a month or a week without considering the amounts of goods or services that will be bought by the wage received i.e. Nominal wages do not take into account the purchasing power of the money.

Real Wage

This is the actual amount of goods or services that will be bought by the nominal wage. Is the purchasing power of the money wage.

It indicates the amount of goods or services that one is be able to buy by using his/her money wage.

Methods or Systems of Paying Wages

There are various ways of paying wages.

- Time rate wage system.
- Piece rate wage system.
- Profit sharing wage system.
- Bonus system.

Piece arte Wage System

It is a method of wage payment where a worker is paid according to the amount of work that he has done. Piece rates can be applied only if the amount of work accomplished can be easily measured. Supervisors are employed to check the work done in order to ensure that workers maintain minimum standard of work. The main aim of this system is to give workers incentive of producing more output since the worker receive more pay if they produce more output.

Advantages of Piece Wage Rate System

- Output in quantitative terms may be large and cost per unit decrease because workers get more wages as they increase output.
- It is very easy to differentiate a hard worker and a lazy worker by comparing the amounts of output produced by each worker.
- It is very easy to reward workers for any extra work they do.
- This system does not require close supervision, every worker works hard in order to earn more even when there is no any close supervision, in this case the cost of supervision decrease.
- The fast workers earn more than slow or lazy worker.
- It is easier for employees to fix the amount of reward for each worker since the rewards depend on the quantity produced.

Disadvantages of Piece Wage System

- Workers may produce large quantities but of low quality because workers are paid according to the quantity produced not necessarily the quality of the output.
- Workers may overwork themselves in order to earn more.
- It is not suitable for types of work, which can not be measured in terms of quantity, example, and teaching.
- A more cautious worker, who produces higher quality output may take a long time to accomplish his task and therefore earn less money than a worker who haste's to accomplish the work.
- Workers work at high speed to produce more this may cause accidents.

Time Rate Wage System

It is a type of wage system in which a worker is paid according to a specific period of time example a month or a week

Advantages of Time Rate System

- It is suitable for types of work, which can not be measured quantitatively.
- It is suitable for types of work, which demand high quality of output.
- It is impossible for the workers to overwork themselves because the payments of workers do not depend on quantity of the work done rather on the agreed fixed period of time.
- Workers are assured of regular payments.

Disadvantages of Time Rate Wage System

- Output may be low because workers know that they are going to receive their wages even if they do not produce any output.

- It is very difficult to differentiate an efficient worker (hard worker) and a less efficient worker (lazy worker).
- It is not easy to reward an extra payment to a hard worker because it is very difficult to measure the output produced by each worker.
- This system encourages inefficiency of work, because even inefficient workers are paid wages at the end of the month or week.
- It requires close supervision of the workers to ensure that they perform their duties.

Profit Sharing

According to this system the profit is shared among workers, according to certain agreed rates, this system applies in partnership business.
Partners share the whole profit they are therefore, motivated to work hard to get more share of the profit. However, this system may encourage inefficiency to some of the partners if profit is shared equally among the partners without considering the contribution of each partner in the business.

Bonus System of Wage

In this system, workers are paid extra amount of money after achieving a certain standard of production. This system motivates workers to work hard, although it may discourage those who do not chance to get the bonuses.

Theories of Wages

There are about six theories of wages.
1. Subsistence theory of wages.
2. Residual theory of wages.
3. Market theory of wages.
4. Bargaining theory of wages.
5. Wage fund theory of wages.
6. Marginal productivity theory of wages.

Subsistence Theory of Wages

Also known as Iron law of wages. According to this theory wages tend to settle at the level which is just sufficient to maintain the workers and his family at a minimum subsistence level**.** If, for some reasons wages are higher than this level, it is said that workers would be encouraged to marry which leads to an increase in population and in the supply of labour, the supply of labour caused by the increase in population will bring down wages to again the subsistence level.

If, on other hand, wages are below subsistence level, then marriage would be discouraged and ultimately population would decrease causing a decrease in labour supply hence wages would rise and reach the subsistence level. This theory has been rejected because it is not true that when workers earn more they marry more wives or are encouraged to have more children.

Wage Fund Theory of Wages

According to this theory, wage fund is created and the wages are paid by the employers out of this fund. According to this theory amount of wages depends on the following factors.
- Wage fund set aside by the employer for the payment of wages.

- The number of workers
- The actual wage is paid by dividing the fund by the number of workers. According to this theory, wages cannot rise unless either the wage fund is increased or the number of working class decreases**.**

Criticism against Wage Fund Theory

This theory has been criticized on the basis that:

- There is no wage fund that is usually fixed by the employers for the payment of wages.
- Workers are not paid equal amount of wages.
- Wages is determined by many factors such as marginal productivity of workers and the demand and supply of the labour.

Residual Claimant Theory

This theory was advanced by an American economist, John walker. According to this theory, wages are the residual leftovers after the other factors of production have been paid i.e. rent, profit and interest out of the total output. It is said that the whole of the remainder will go to workers.

Criticism against Residual Theory

This theory has been criticed by most economists on the following grounds

- It does not explain how trade unions are able to raise wages.
- It is not the worker who is paid left over but the entrepreneur.

Market Theory of Wages

According to this theory, wages are determined by the interaction between the market forces of demand and supply; at the equilibrium of the market forces the wage rate will be determined. The demand for labour is derived from the demand for the goods and services needed for the production of which labour is required such that anything that stimulate the demand for goods and services will also stimulate the demand for labour. If wages increase above the equilibrium level, labour supply will increase while labour demand will decrease, this will cause a surplus of labour. A surplus of labour will cause a fall in the level of wages up to the equilibrium and increase in the demand for labour.

On the other hand if wages are below the equilibrium, labour demand will increase while labour supply will decline leading to a shortage of labour. A shortage of labour will push up wages leading to an increase in the supply of labour. The movement will continue up to a point where the supply of labour will be equal to the demand for labour.

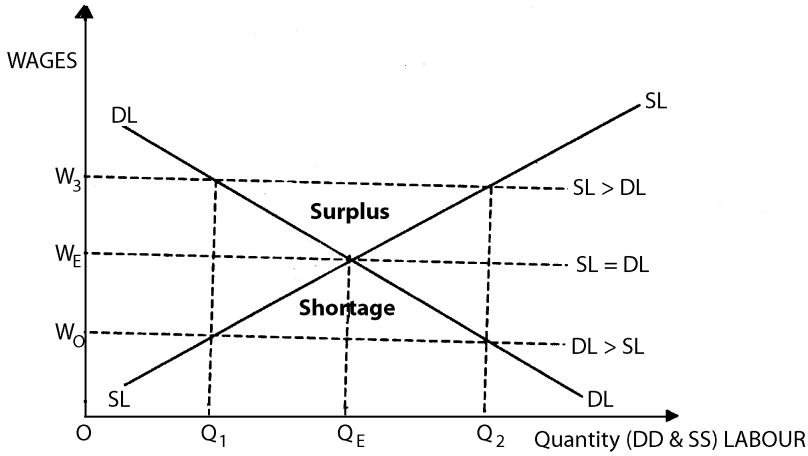


Figure: 6.1 Wage determination through market forces

In figure 6.1 above,

- WE is the equilibrium wage rate
  At W3, supply of labour Q2 will be greater than the demand for labour Q1 hence a surplus of labour. A surplus of labour will cause a fall of wages down to WE. As a result.
- The demand for labour will rise from 0Q1 to 0QE.
- The supply of labour will decline from 0Q2 to 0QE

Hence an Equilibrium will be Established at 0Qe

On the other hand a wage level below the equilibrium, at WO will cause the following:

- A decrease in the supply of labour from QE to Q1.
- An increase in the demand for labour from QE to Q2.
  Thus, the demand for labour will be greater than the supply of labour, there will be a shortage of labour, the shortage of labour will cause a rise in wages to WE again. As a result.
- The demand for labour will decrease from Q2 to QE.
- The supply of labour will increase from Q1 to QE.

Hence Equilibrium will again be established at Qe

However, this theory is not the only theory because wages can be determined by the government, marginal productivity of labour, bargaining of the trade unions, wage fund etc.

The Bargaining Theory of Wages

According to this theory, the bargaining strength of both sides in the labour market is of great importance. The increasing power of trade unions has made some economist believe that the earlier theories of wages are inadequate. The supporters of bargaining theory of wages believe that the "level of wages depends on the strength of the trade union" **Collective bargaining** is a term applied to negotiations between the associations representing employers and trade unions representing employees in an industry. An employee, by himself/herself is in a weak bargaining position, but when

he/she unites with other workers in a trade union he can bargain more effectively. Employers too prefer collective bargaining since individual bargaining with each other would take too much time.

Trade Unions

Those are associations of workers that are established to demand and defend interest of all the workers, through various methods such as industrial actions, negotiations and arbitration.

Functions of Trade Unions

- To demand for increase in wages
- To protest against any kind of discrimination
- To advise the employers and the government
- To improve the welfare of workers.

Strength of a Trade Union

The strength of a trade union depend upon the following factors

- *Financial power of the union* - if the financial power of the union is strong the union can help members during the industrial action and thus hold on with the action until employers meet the demand of the workers.
- *Unity among the members* - the strength of the union depends on the unity among the members if members do not have common stand and are not united in their action of demanding for their right it would be easy for employers to use a divide and rule to weaken the trade union, but if members are united and thus have a common position on issues affecting their rights it would be very easy for the unions to play their basic role of defending and demanding for the interest of the members.
- *Size of membership* - the strength of a trade union is based on collective bargaining which depends on the number of members in a union and the ratio between members and non members. If members are the minority in the organization then the union will be weak, but if members in the trade union are the majority of the firm's workers then the union will be strong.
- *Productivity of the workers* - employers ability and willingness to increase wages depend on among other things the productivity of individual and of all the workers, in a situation when productivity of workers is low it will be very difficult for the employers to increase wages, but if productivity of workers is high employers will be able to meet the demand of the workers for an increment of the wages and other benefits.
- *Substitutability of labour to other factors* - in case labour can be substituted with other factors like capital then the bargaining power of the workers will be weak because entrepreneur will substitute capital for labour when labour carry a strike. But if labour can not be substituted with capital it will be difficult for production to proceed when workers engage in an industrial action in this case the union will be strong.
- *Labour law of a country* - if a country has labour laws some of which protect the interest of the workers including the right to demand for their rights then trade unions in that country will be stronger than in a country where there are no laws which protect and defend the interest and rights of the workers.

- *Elasticity of demand for labour - since the demand for labour is a derived demand the demand for labour depend on the elasticity of demand for the* goods produced by the labour ,if the elasticity of demand for the goods produced by labour is inelastic the demand for labour will also be inelastic in this case it will be ease for workers to raise their voices through the trade unions to demand for better pay and working conditions but in case the elasticity of demand for labour is elastic when workers demand for higher wages than the quantity demanded by the employers will decline by a larger proportion and therefore many workers will be unemployed.

Effects of a Trade Union Having succeeding to Bargain More Wages above the Market Wage or Equilibrium Wage

In a perfect competitive market, prices of goods and inputs are entirely determined by the market forces of demand and supply, but since most markets are imperfect, wages can sometimes be determined by non-market forces such as the influence of the trade unions. Trade unions demand may force wages up above the equilibrium if this happen the following effects occur

- The demand for labour will decline leading to the unemployment of some workers.
- Increase in the cost of production due to the increase in wages
- Decline in profit and closure of the firm in case wages is raised without a corresponding increase in the marginal revenue productivity of workers, profit will be swallowed by the increase in the cost of labour and a firm may be forced to close down production.
- Employers may be forced to substitute capital for labour such as computers, conveyor belts, robots hence redundancy of labor.

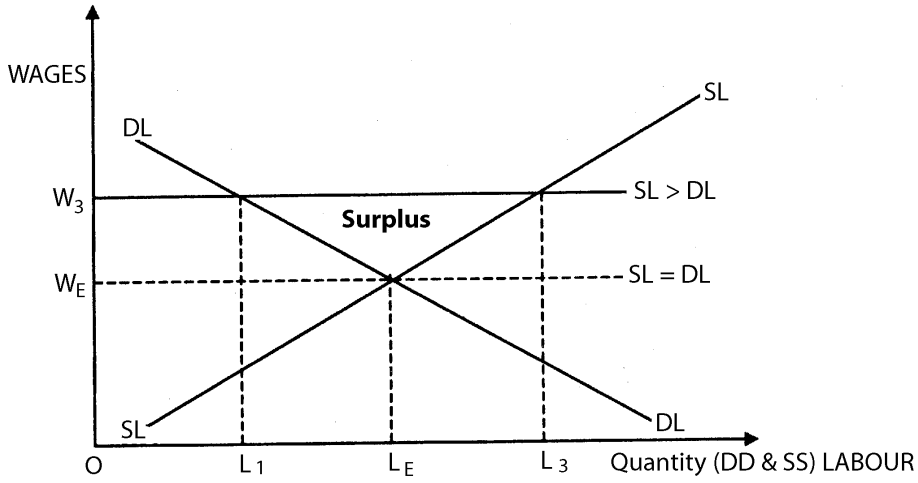


Figure: 6.2 Effects of increasing wage above the equilibrium

In figure 6.2 above, WE is the equilibrium wage rate, the demand for labour is equal to the supply of labour, if the pressure by the trade unions forces the entrepreneur to raise wages to W3 the demand for labour will decrease to L1 from Le while the supply of labour will increase toL3, causing a surplus of labour and unemployment.

Marginal Productivity Theory of Wages

Marginal productivity of a factor of production is an additional to output resulting from employment of an extra unit of the factor. According to the marginal productivity theory of wages no factor in conditions of perfect competition can expect a sum/amount of money greater than the value of its marginal revenue product.For example, if the employment of an additional man results in an additional of ten thousand shillings to the firm's total revenue, the entrepreneur will not pay that man more than ten thousands shillings, since to do so will result into a loss. Therefore a higher payment can be made to a factor only if its marginal productivity increases.

Assumptions of the Marginal Productivity Theory of Wages

1. It is assumed that all units of factors are homogenous. That is, labour are identical in every aspects.
2. It assumes that different factors are capable of being substituted with one another. It means labour can do functions of capital.
3. It assumes that productivity of a labour depends only on labour itself not on other factors.
4. It assumes perfect mobility of factors that is factors such as labour can move from one firm to another firms without any problem.
5. It assumes law of Diminishing returns i.e. Output after a certain point will decline due to the fact that one of the factors is always fixed.
6. It assumes that when wage rate increase employers will employ less labour and when wage rate decrease employers will employ more labour.
7. This theory assumes that marginal productivity of any factor can be measured.
8. This theory assumes that wages is determined by marginal productivity of a labour.

Criticisms against Marginal Productivity Theory of Wages

1. It is not true that labour is homogenous in all aspects. Labour differs in terms of knowledge, energy, creativity, ability, education, experience etc.
2. It is not true that labour is perfectly mobile because there are several barriers for mobility of labour such as lack of required knowledge, experience, age, sex etc.
3. It is not true that productivity of a labour depends on labour itself because there are other factors which influence productivity of a labour example efficiency of capital and. Motivational factors.
4. This theory argue that when wage rate increase employers will demand less labour, however, this is not always the case because when wage rate increase incomes of the people, increase as a results demand for goods increase which stimulate production when production is stimulated demand for labour increases so it is not true that increase in wages always cause decrease in demand for labour.
5. This theory assumes that capital is always fixed while capital can change in the long run .Therefore; there is no diminishing return in the long run.
6. This theory is based on the demand side of labour, it ignores the supply side of a labour.
7. The theory assumes that productivity can always be measured while in real sense it is very difficult to measure productivity of a labour.
8. The theory assumes perfectly substitutability of labour while in real sense labour is not perfectly substitutable.

9. It assumes that wages are determined by marginal productivity of labour only but in the real sense there are other factors which determine the wages such as level of education, knowledge, age and sex etc.

Factors for Determination of Wages or Factors for Differences in Wages among Workers

- *Level of Experience:* More educated workers are normally paid higher wages than less educated workers.
-. *Working Experience:* A more experienced worker is normally paid a higher wages than a less experienced worker.
- *Productivity of a Worker:* Sometimes workers are paid wages depending on the level of productivity. A more productive worker is paid more wages than a less productive worker.
- *Government Policy:* Government may also set different wages to different types of works for example the government can fix higher wages to some types of works that are considered to be more important to the public or to the national interest.
- *Strength of Trade Union:* If a trade union in a particular industry has a strong bargaining power then it will be able to influence for higher wages.
- *Professional Restrictions:* Some professions such as medicine, Engineering, Law, and Accountancy have restrictions on employment and registration of members. Employment depends on whether a person is a member or not of the professional board. Any body who is a member is likely to get employment and a higher pay than a non member, For example, in Tanzania most employers prefer more to employ accountants who are recognized by the national board of accountants and auditors than accountants who are not recognized by the board hence the wage of the former is higher than of the latter.
- *Mobility of Labour both Occupational and Geographically Mobility:* A mobile labour is likely to receive more pay than a worker who is not or less mobile.
- *Demand For and Supply of Labour:* Wages of labour is determined by the interaction of the market forces of demand and supply, an equilibrium wage rate or the market wage is achieved when the supply of labour is equal to the demand for labour.
- *Wage Fund Available:* According to the wage fund theory, the amount of wages depends on the wage fund available. The larger the wage fund, the higher the wages and the lower the wage fund the lower the level of wages.
- *Other Factors:* These factors are such as race, sex, tribe, religion some people are paid higher wage or lower wage due to the above factors.

The Payment for Land

The payment for land is *RENT.*

In ordinary speech the term Rent is used in wide sense to mean a hiring charge. But in Economics sense, Rent or economic Rent refers to that part of payment by a tenant, which is made only for the use of land.

☞ **Note:** Land is fixed in supply therefore its supply is perfectly inelastic.

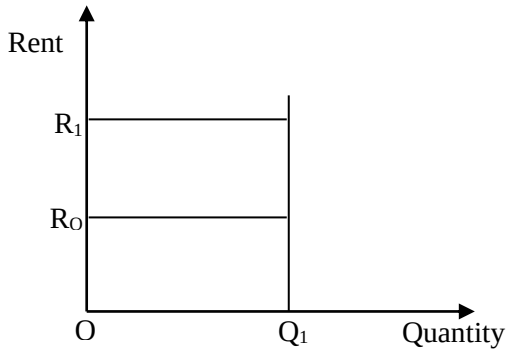


Figure: 6.3 Fixed land supply

In figure 6.3 above, land is fixed at 0Q1

Theories of Rent

These theories try to explain how rent arises. The following are the theories of rent.

- *Ricardian Theory of Rent:* According to DAVID RICARDO Rent is that portion of the produce of the earth which is paid to the land lord for the use of the original and indestructible powers of the soil.

Assumptions of the Ricardian Theory

According to Ricardo, Rent is a surplus after payment has been made to other factor of production.

Rent/Surplus = Total produce - Total cost.

- Land is fixed in supply.
- Land has no alternative use
- Differences in fertility among pieces of land
- Original and indestructibility power of the soil
- Operation of the law of diminishing returns.

Differences in Rent among Pieces of Land According to Ricardo

According to Ricardo there are differences in rent among different kinds of lands depending on their superiority or fertility. The most superior land, which yields large output, has bigger rent than an inferior land (Marginal land). For example,

Table 6.2 Output, cost and rent in different pieces of land.

Piece of land	**Output**	**Cost**	**Rent**
Most superior A	100	40	60
B	80	40	40
C	60	40	20
Marginal land D	40	40	0

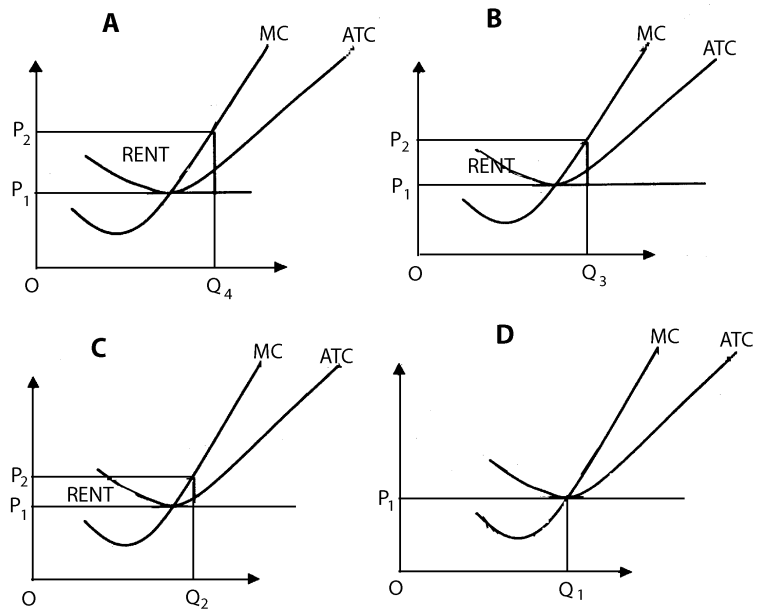


Figure: 6.4 (A, B,C and D)

from to the above illustrations, the most superior piece of land A receives the highest amount of rent followed by B and C while D is a marginal land therefore it has no rent. In graphical illustrations, Rent is shown by an area of profit. So land A has the largest profit or Rent followed by B and C while D has no rent because price is able to cover the costs of production only.

Criticisms against Ricardian Theory of Rent

- It is not true that there is such an original and indestructibility powers of the soil fertile land also lose fertility after it has been cultivated for a long time.
- He took no account of the fact that there are different uses of land. As a result even the least fertile land may be used for other uses, and therefore has rent.
- Rent does not arise on account of superiority or fertility or inferiority of land but because land is scarce.
  If good and bad Lands were in a state of being abundant there will be no question of paying rent.
- Sometimes fertile land is first cultivated not because of its fertility but due to accessibility of the land.
- The theory does not explain what happen to rent if the produce from a superior Rent become less profitable due to a fall in price and therefore fail to cover the costs of production.
- It assumes no any improvement on the fertility of inferior land by any means such as technical improvement, like the application of fertilizer and land reclamation.
- Rent does not apply only to land but also to other factors.

Modern View of Rent/Market Theory of Rent

According to the modern view of rent. Rent is a payment for the use of land which is determined by the demand for and supply of land.

- *Demand for the Use of Land:* The demand for land is a derived from the demand for products of land. If the demand for the products of land rise or fall the demand for the use of land will correspondingly rise or fall leading to an increase or decrease of rent
- *Supply of Land:* On the community point of view the supply of land is perfectly inelastic therefore rent may rise or fall but the supply of land will remain the same.

Determination of Rent by Demand and Supply Forces

Rent is determined by the interaction between demand and supply forces.

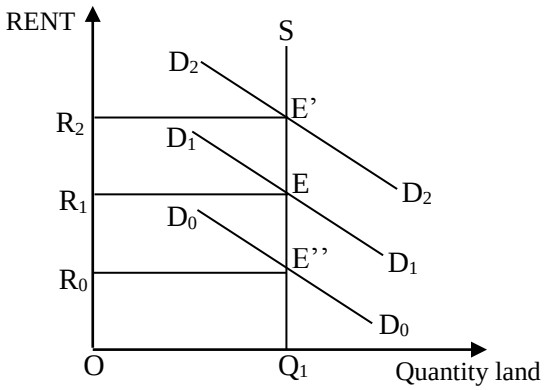


Figure: 6.5 Rent determinations by demand and supply forces

In figure 6.5 above, supply of land is fixed.

- Demand and supply curves interest at point E which is the equilibrium point where the amount of Rent is OR1. If rent is less than OR1, say OR0, the demand for land will increase but since supply is fixed rent will rise again to OR. If on other hand rent rises above OR1, to let say OR2, the demand for land will decrease and bring rent back to OR1.

  If on other hand demand for land has increased from D_1D_1 to D_2D_2 and supply is fixed rent will increase to R_2 and therefore a new equilibrium point will be E^1. If demand fall to D_0D_0 then rent will fall to R_0 therefore the equilibrium point will be E".
- *Transfer Earning:* Transfer earning is the payment which a factor of production could earn in its best next alternative employment, in other words transfer earning is the maximum payment which a factor of production must be paid in order to retain it in a firm for example if a certain worker is paid tshs 50,000 per month in his current employment and could earn Tshs 40,0000 in his next best employment then transfer earning is tshs 40,000 and the employer must pay this particular worker at least tshs 40,000 or more in order to retain him in the firm.

Usefulness of the Concept of Transfer Earning

It is used to explain the concept of economic rent, in modern sense rent means a surplus over transfer earnings .for example if the price of land in its current form of employment is Tshs. 20,000/=, if it can earn 15,000/= in its next best form of

employment it means that in its current employment it is earning tshs 5000/=more than in its next best employment this amount is a surplus or economic rent.
The concept of transfer earnings has a great significance in explaining the supply of factors of production in a particular industry, labour will move to those firms where they will be paid wage which is equal or above transfer earnings. Employers must pay workers amount of wage equal or above the transfer earnings in order to retain them.

Economic Rent

Is the payment made for the use of a factor of production whose its supply is inelastic in the short run. It is a surplus accruing to a factor of production over its supply price i.e. transfer earnings, for example if land in its current employment earns Tshs 50,000/= and could earn Tshs 40,000/= in a next employment then the transfer earnings is Tshs 40,000/= and the surplus is Tshs 10,000/=. This surplus in a modern view of rent is known as economic rent.

Elasticity of Supply and Economic Rent

The elasticity of supply influences the economic rent as follows:

- *A case of perfectly elastic supply:* When the supply of land is perfectly elastic there will be no surplus and the actual earnings and transfer earnings will be equal therefore economic rent will be zero.

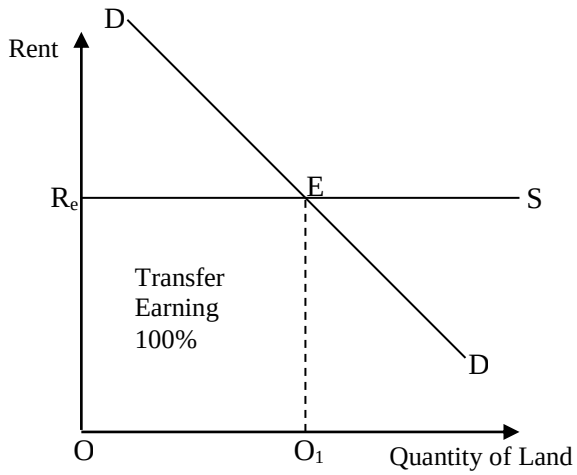


Figure: 6.6 Transfer earning under perfect elastic supply of land

In figure 6.6 above, the supply of land is constant DD is the demand curve E is the equilibrium point where the demand for land is equal to the supply of land. Quantity of land that is supplied at equilibrium rent Re is OQ_1. Transfer earning is equal to the actual earning, therefore there is no economic rent.

- *A case of perfectly inelastic supply:* When the supply of a factor is perfectly inelastic a factor cannot be transferred to any other uses, therefore its transfer earning is zero. For this case, the entire income from a factor is economic rent.

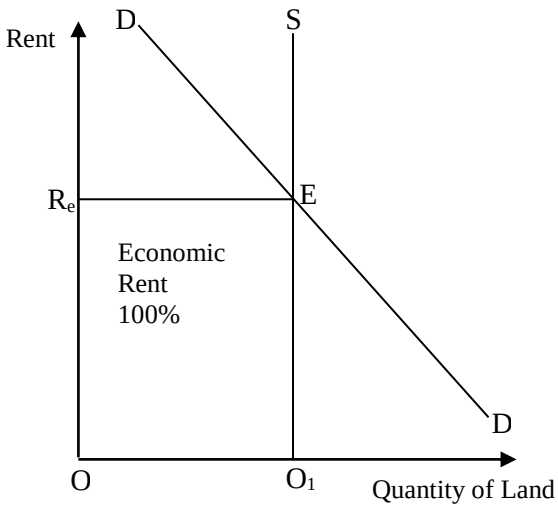


Figure. 6. 7 Perfectly inelastic supply

In figure 6.7, above OR_e is the Equilibrium Rent and OQ1 is the Equilibrium Quantity of land. The total rent is OReEQ1.because land is fixed in supply and cannot be transferred to any other use, and its transfer earning is zero so the entire earning of rectangle OReEQI is economic rent or a surplus over transfer earnings.

- *A case of elastic supply:* When supply of land is elastic then part of income is rent

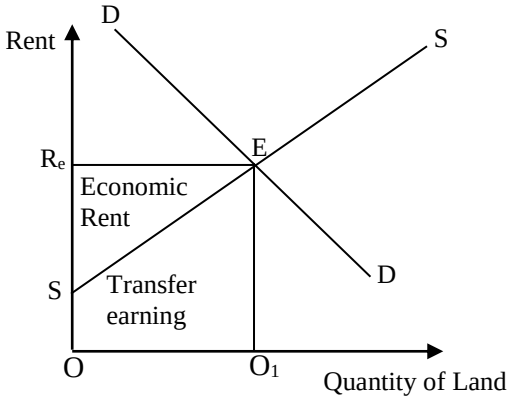


Figure: 6.8 Economic rent and transfer earning when supply is elastic

In figure 6.8 above, the supply is elastic, it is equal to demand at point E and the , total earning is OREQI while, transfer earning is OQ1ES, so the region RES is economic rent.

Quasi Rent

This is a kind of rent which applies to factors of production whose supply is inelastic in the short run but inelastic in the long run i.e. factors whose their supply cannot be increased in the short run even if their payments or rewards increase. Examples of these factors are buildings, highly skilled labour, plant and machinery etc.

So quasi rent is the surplus earned by factors of production other than land whose supply is inelastic in the short run .For example, if the wage of a specialist doctor is ths 200,000/= per month but due to shortage of doctors he receives ths 3,000,000per month then quasi rent is Tshs (300,000 - 200,000) = Tshs 100,000/=.

Payment for Capital

The payment for capital is interest. Interest is paid to various forms of capital such as loanable funds, machines and securities etc.

Theories of Interest

Theories of interest explain the reason why interest is paid and the following are the theories of interest.

(i) Marginal Productivity Theory

According to this theory interest is paid on capital because capital is productive, with the help of capital it is possible to increase production, for instance a fisher man can catches more fish by using a fish net than by using his bare hands. However this theory has been criticized on the ground that interest is paid on capital because capital is scarce, those people who have no capital must pay interest by using other people's capital. For this case, if capital is abundant then there is no need of paying interest.

(ii) Abstaining Theory of Interest

According to this theory, capital which is borrowed originates from savings. Since saving involves sacrifice, that is when people save money into the bank they forgo present consumption therefore such a sacrifice must be given a certain reward in a form of interest.

Criticism against Abstaining Theory

This theory has been criticized on the ground that some people save money into the bank without any sacrifice so it is not true that interest is a way of rewarding them.

(iii) Waiting Theory of Interest

According to this theory saving involves waiting. It means when a person save his or her money into the bank he/she has to wait up to a future time before withdrawing the money. Since most of the people are not ready to wait, therefore a motivation must be offered to those people who are ready to save and wait.

(iv) Austrian Theory of Interest

According to this theory interest is paid because people prefer present consumption rather than future consumption. It means people prefer using their money today than in the future therefore interest must be paid in order to convince people to postpone present consumption. This theory has been criticized since it does not explain why people use large part of their income instead of saving.

(v) Liquidity Preference Theory

This theory was advanced by Keynes. According to Keynes, the rate of interest is a reward for not holding money in a liquid form. Keynes believed that people prefer to hold cash than other assets Keynes regarded interest as a reward for parting with your cash.

Keynes argued that the rate of interest is determined by monetary forces and that

- The demand for loans comes from entrepreneur wanting to purchase capital goods and from others wanting to purchase consumer goods or securities.
- The supply of loan fund depend on the rate at which the community is able and willing to save on money created by the banking system and on willing ness of people to allow a reduction in their holdings
- Interest is seen as a reward not only for saving but also for lending.
- Rate of interest is a price, which has to be paid in order to overcome lenders' liquidity preference.

People Hold Money for Three Motives

(i) Transactionary Motive
People hold money for everyday transaction arising from their day needs.

(ii) Pre-Caution Motive
People hold money for emergencies or unexpected events such as sickness.

(iii) Speculative Motive
Where people hold money for further increase in income in terms of financial assets such as bonds.

These motives are the basis of the community's total demand for money, the rate of interest is the price required to equate the demand for money and the supply of money.

Criticism against Liquidity Preference Theory

(i) Firstly it has been pointed out that rate of interest is not purely a monetary phenomenon real force like productivity and economies of scale also play an important role in the determination of the rate of interest

(ii) Keynes makes the rate of interest independent of the demand for investment funds .in fact it is not so independent, the cash balances of the businessmen are largely influenced by their demand for savings for capital investment.

(iii) Liquidity preference is not the only factor covering the rate of interest by affecting the demand for and the supply of individual funds.

(iv) This theory does not explain the existence of different rates of interest prevailing in the market at the same time.

(v) Keynes ignored savings or waiting as a source or means of loanable fund, it is meaningless to part with liquidity without there being any saving.

Relationship between Rate of Interest and Savings

Interest rate is positively related to the savings. When interest rate increase people are encouraged to save money and when interest rate decrease people are discouraged to save money.

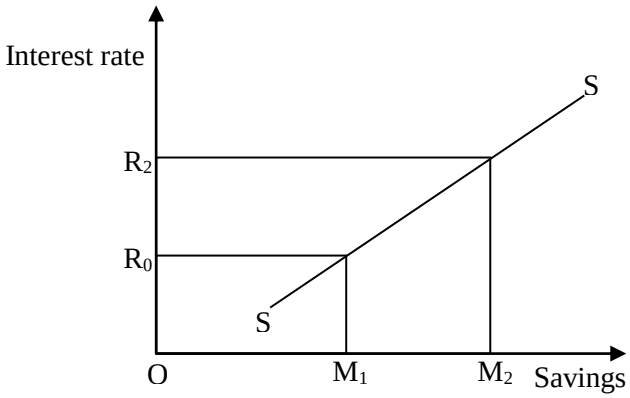
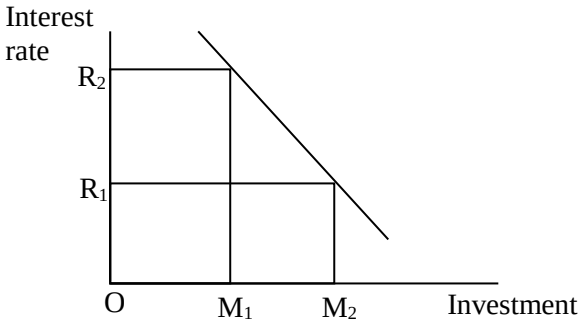


Figure: 6. 9 Relationship between savings and rate of interest

Relationship between Interest Rate and Investment

Investment and interest rate are inversely related. Interest rate is the cost of investment. It means when investors borrow money from Banks they pay interest. So interest is the cost to their borrowing. When interest rate increase it means cost of borrowing is high so this discourages investment. On other hand, when interest rate is low it means the cost of borrowing is low hence encourages investment. So, the higher the interest rate the lower the investment and the lower the interest rate the higher the investment.



Figur: 6.10 Relationship between rate of interest and investment

1. According to Keynes the rate of interest determines the rate of investment and savings. The higher the rate of interest the higher the savings. So the rate of interest can be used to promote savings and investment. Investments can be promoted by lowering the rate of interest and saving will be promoted by increasing the rate of interest.
2. Also, interest can be used to control inflation. This is because at a higher rate of interest borrowing is discouraged, thus it reduces money in circulation and the purchasing power. Likewise when interest rate on savings is increased, saving is encouraged leading to the reduction of money in circulation and the purchasing power of the people.
3. It acts as a gauge to ration and regulate the distribution of capital.

The Payment for Entrepreneurship

The payment for entrepreneurship is profit. Profit is the amount of money which remains after excluding all the cost of running a business.
Profit = total revenue - total cost

Types of Profit

1. *Economic Profit.*

This is the profit after subtracting all costs of production which are explicit cost of production and implicit cost.
Economic Profit = TR - TC (Explicit cost - Implicit cost)

2. *Accounting Profit*

This is a profit which is obtained after excluding from the total revenue only, the explicit cost
i.e. (TVC + TFC)
TVC = Total Variable cost
TFC = Total Fixed cost
Accounting Profit = Total Revenue - Explicit costs
Explicit cost = (TVC + TFC)

Example

From the following information about revenue and costs of a coca cola company.
Price per unit of Output = Tshs100
Indirect costs of Production (implicit cost) = Tshs10, Price of labour
= Tshs20
Labor units used in production Process = 25
Amount of fixed factor used = 40 units.
Price per unit of fixed factor = Tshs 20.
Output produced = 2000crates.

Find:
(i) Total profit (accounting and economic profit)
(ii) Total implicit and explicit costs

Theories of Profits

1. Rent Theory of Profit

This theory was advanced by an American Economist known as Professor John Walker. According to this theory profit is determined the same way that rent is determined. Profit arises due to differences in the level of abilities among entrepreneurs. The most superior entrepreneurs get the highest profit in comparison to the inferior entrepreneurs. The reason is that Superior entrepreneurs are able to organize production more efficiently and therefore can create surplus while inferior entrepreneurs can not organize production efficiently and therefore they do make less profit. However this theory has been criticized on the ground that:

- Even if the entrepreneur is inferior in terms of ability he/she can still make some profit through the efficiency of other factors such as labour and capital.
- Also, this theory does not explain why firms make loss even if they have superior entrepreneurs.

2. Wages Theory of Profit.

This theory was advanced by Professor Devonport. According to this theory profits are determined just like wages because an entrepreneur is just like other labourers only that he/she is a superior labourer. So he/she is supposed to be paid wages. However this theory has been criticized due to the fact that:

(i) Profit is a reward for taking risks in production.
(ii) Wages is not like profit because it is paid to labour even if a firm makes loss.
(iii) Thirdly workers are paid due to their physical and mental efforts in the process of production. While, entrepreneur sometimes get profit even without using physical and mental efforts in the process of production.

3. Risk Bearing Theory of Profit.

This theory was advanced by Professor Hawley. According to this theory profit is a reward for taking risk in business. It means entrepreneurs get profit because they are ready to take risk of loss.

According to this theory entrepreneurs get profit because they are ready to take risk by investing their resources. Those who are not ready to invest their resources cannot get profit.

However this theory has been criticized on the ground that entrepreneurs make profit not only because of taking risk but also due to other factors such as the efficiency of other factors of production such as labour and capital and due to the fact that entrepreneur skills are scarce.

4. Dynamic Theory of Profit

This theory was advanced by professor J.B Clark. According to this theory profit occur due to the reason that the economic circumstances are always changing .It is started that in a static world where the size of population ,the amount of capital ,the quantity and quality of human wants ,the method of production ,technical knowledge etc remain constant profit tends to disappear under the forces of competition .profit represent the difference between selling price and cost .Therefore according to Clark we are living in a dynamic world and some changes are constantly taking place .the cleaver entrepreneur foresees these changes and by producing new things he/she can earn profit , because the world is not static.

5. Uncertainty Bearing Theory of Profit

This theory was presented by professor knight. According to this theory. It is uncertainty bearing rather than the risk taking which is the special function of the entrepreneur that leads to profit. According to knight, risks are of two kinds.

(i) There are certain risks, which can be foreseen for example accident like fire and ship sinking.
(ii) There are certain risks, which are not possible to foresee.

Risks of first kind are borne by the insurance companies. As regards the risk of second category, these are borne by the entrepreneur. Professor Knight says that they should not be called risk but uncertainties. The term risk is applied to those dangers, which can be known and foreseen. The entrepreneur gets remuneration for bearing uncertainties and nothing for the risk, which have been foreseen.

Like other factors of production, uncertainty bearing has a supply price because no entrepreneur will be induced to face the uncertainty unless a certain return is expected.

Functions of Profit

1. It is an incentive to production that is, when entrepreneur earns profit he/she is motivated to increase production.
2. An indicator of efficiency. Profit is a sign of efficiency of entrepreneurship or labour
3. Expansion of production/capital Profit is used to rejuvenate capital
4. Allocation of resources Profit attracts firms to join an industry
5. A reward for bearing of risk.

Determinants of Profit

1. Size of demand.

If the demand for the firm's products is high, a firm revenue and profit will be large.

2. Efficiency of factors production/Entrepreneur.

If the factors of production are efficient, the firm will produce large amount of output and get more revenue.

3. Number of firms in the market.

If there are few firms in the market, the few firms in the industry will enjoy supernormal profit.

4. Cost of production or price of the factors

The amount of profit depends on the total cost of production. If the cost of production is low, the firm's profit will be large and vice-versa.

Differences between Profit and other Payments

(i) Profit may be negative ie a firm may make loss but other payments are unlikely to be negative they must be paid even when entrepreneurs get loss.
(ii) Profit fluctuates far more than other forms of income, rent, interest, and wages are normally fixed at some agreed rates for some period of time
(iii) Profit is a residual item; profit is what remains after all expenses have been met while wages, interest and rent are usually fixed in advance.

Normal Profit and Super Normal Profit

1. Normal Profit.

This is a return necessary to cover all costs of production. When a firm obtains a normal profit it is said to have reached a break even point.

2. Supernormal Profit.

It is a profit above normal profit that a firm obtains when its total revenue is greater than total costs.

These Concepts can be explained by the Help of the Diagrams Below:

1. A supernormal profit of a firm under perfect market and imperfect market is shown by the shaded regions in diagram A and C respectively.

2. A normal profit of a firm, under perfect market and imperfect market, is shown in diagram B and D respectively.

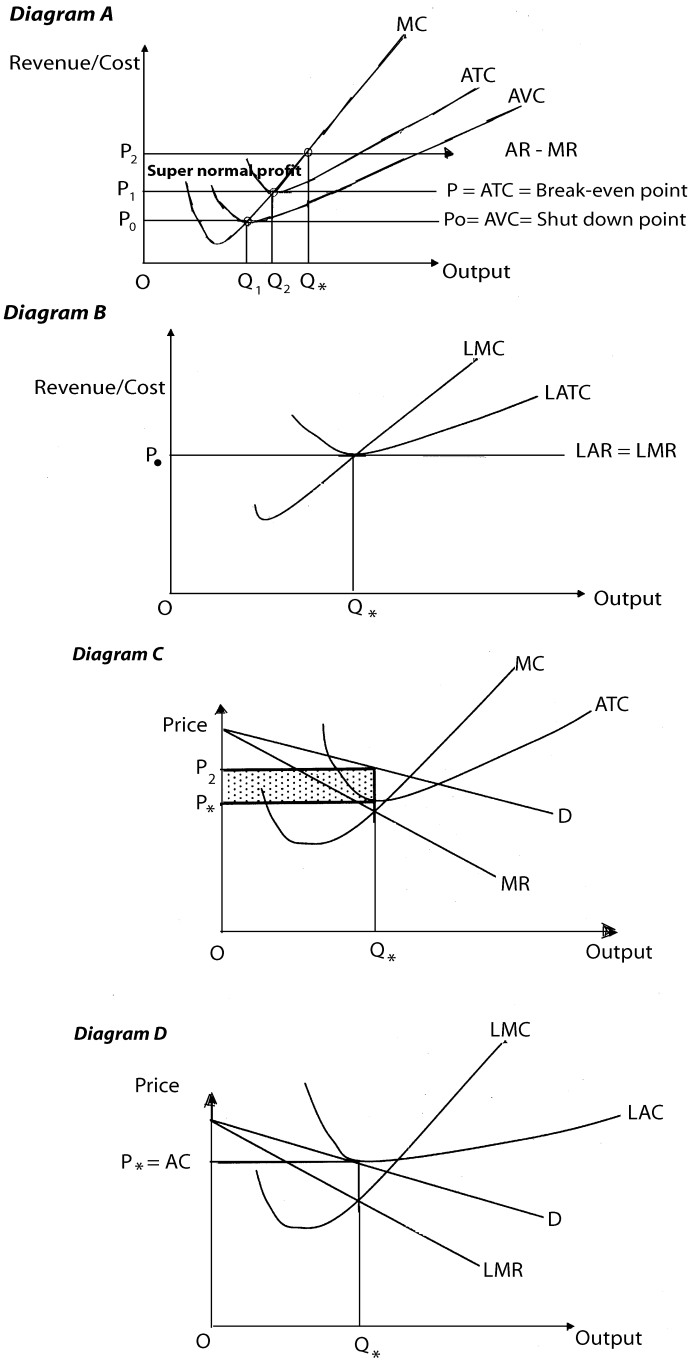


Figure: 6. 11A and Figure: 6.11B show supernormal profit and normal profit of a firm under perfect market respectively.
Figure: 6.11C and 6: 11D show supernormal profit and normal profit of monopoly firm respectively.

TOPIC SEVEN

THE THEORY OF MONEY

What is money?

Money is anything, which is generally acceptable by a society as a medium of exchange and means of settling debts.

Evolution of Money

Money started long time ago from time immemorial. Before the discovery of money people were used to exchange commodities for commodities in a trade known as *Barter trade*. However barter trade had the following problems

1. Lack of Double Coincidence of Wants

The double coincidence of wants must be fulfilled in order for exchange to take place. For example case there is a farmer who has wheat but want salt he/she must find a person who has salt but want wheat but if he fails to find such a person who wants wheat but has salt then barter trade could not take place.

2. Lack of Measure of Value

It was very difficult to decide how much quantity of one commodity should be exchanged for another commodity. For example, it was very difficult to decide how much quantity of maize must be exchanged with a cow.

3. Lack of Store of Value

Under barter system it was difficult to store perishable goods like vegetables for exchange with other commodities in future.

4. Indivisibility of Some Items

It was not possible to divide some commodities into smaller units in order to exchange with units of other commodities. For example, if a person has certain units of cloth and wanted to exchange with some units beef, the exchange was very difficult because a cow could not be divided into smaller units in case the value of the units of cloth was not equal to value of the whole cow.

5. Difficult of Transporting Some Commodities

Due to lack of modern means of transportation and immobility of some items, it was difficult to transport some items from one place to another for exchange.

Barter Trade in the Current Period

In the current times, barter trade is practiced to a least extent because of the great advancement in the means of exchange. Most of the transactions are done by using money or other means of exchange such as cheque and credit cards.

Remnants of Barter transactions still exist in rural areas where people sometimes exchange crops for crops or for animal products. Due to the difficulties experienced in barter trade, different places started using different commodities as a medium of exchanging commodities. The items which were mostly used as medium of exchange, were such things as salt and skins. The development or evolution of money can be summarized as follows:

(i) From barter trade to commodity money

(ii) From commodity money to metallic money
(iii) From metallic money to coinage money
(iv) From coinage money to paper money
(v) From paper money to credit money

At present times, notes and coins are the popular forms of money, and they have solved all the problems of barter system.

How Has Money Solved the Problem of Barter Exchange?

(i) By using money, there is no need of double coincidence of wants. For example if a person has wheat and wants cloth he/she does not need to find a person who has cloth but want wheat instead he can sell wheat and use the money generated to buy the cloth.
(ii) Also, people can store their assets in form of money. In this case, even perishable goods can be stored for a long time in form of money.
iii) The fact that money can be broken into smaller units has also solved the problem of indivisibility of commodities
(iv) More still money is easy to carry; hence it can be used to transfer immovable commodities and do transactions.

Qualities of Good Money

The following are the qualities of good money

(i) *Acceptability:* In order for money to be used, as a medium of exchange, it must be acceptable in the society in which it is used as a medium of exchange.
(ii) *Portability:* A good money must have a reasonable size and weight so that one can move with it from one place to another to do various transactions.
(iii) *Divisibility:*A good money must be divisible into smaller units or values **in** order to facilitate buying and selling of goods of all types and with different values.
(iv) *Durability:* The material used to make money must last long to avoid easy wear and tear of the money.
(v) *Malleability:* It should enable coins to be minted into any shape of acceptable values in respect to weight, size etc, without detonation in value.
(vi) *Scarcity:* Money must be relatively scarce so that it can command value and act as a store of value, the volume of money must be in proportion to the volume of goods and services that are produced in a country. For that matter the supply of money must be equal to the demand for money, but it must not be too scarce because if it is too scarce people may resort to other means of payments.
(vii) *Difficult to Counterfeit:* Good money must be difficult to make a fake copy by fraudulent people so as to prevent illegal increase in money supply, which causes harmful effects to the economy.
(viii)*Stability in Value:* The value of money must not fluctuate so often to prevent people from losing confidence in the currency. If the value of money declines so often, people will lose confidence in the currency. In this case, money will lose its credibility as a medium of exchange.
(ix) *Homogeneity:* Different coins and notes must have the same content of materials used to produce them; there should not be differences in the nature of materials of one coin or note to the materials of other coins or notes. This is important in controlling the problem of counterfeiting.

Functions of Money

(i) *Medium of Exchange*
Money facilitates the exchange of goods and services. People use money to exchange goods and services since money has eliminated the problem of barter trade. For money to be used as a medium of exchange, it must be acceptable in the society in which it is used as a medium of exchange.

(ii) *Money is a measure of value*
Money is used to measure the value of goods and services. Prices of goods which are the indicators of values of goods are expressed in terms of money. For example, if the price of a car is Tshs.4million then this amount represents the value of the car.

(iii) *Money is a Store of Value*
Money is used to store values of goods and services for future use especially when people can convert goods and services into money with an aim of using the money for future transactions.

(iv) *Money is used as a Standard of Differed Payments*
Money is used to make future transactions in this case money facilitates credit transactions whereby people can borrow and pay in future in installments.

(v) *Money is used to Transfer Items*
Money is used to transfer assets from one area to another area especially immovable like buildings and land whereby a person owning such asset in one area can dispose the asset and use the money to buy the same kind of asset in another area.

☞**Note:** For money to be functional it must have the qualities of good money and perform the above functions.

Demand for Money

Demand for money is the desire and ability to hold money in cash balances rather than in financial assets like bonds. According to Keynes, there are three motives of demand for money:

(i) *Transactionary Motive*
In this motive people hold money in order to use it to buy their day to day requirements of goods and services.

(ii) *Precautionary Motive*
Under these motives, people demand money in order to meet unforeseen events such as illness.
The demand for Transactionary motive and precautionary motive is a function of income and price Md = f (income, price)
This means that demand for money depends on the level of income and price when income of the people increases their demand for goods and services also increase leading to an increase in the demand for money. Also when, price of goods increase people demand more money in order to be able to buy the goods. But when income and price decrease demand for money also decrease.

(iii) *Speculative Motive*
This is the demand to hold money for further increase in income; this is a demand to hold money in terms of bonds and other assets which bear interests. The

demand for money for speculative motive is inversely related to the rate of interest. When the rate of interest is high demand for money for speculative motive will be low and if the rate of interest is low demand for money will be high.

Money Supply

This is the amount of money (currency) in circulation and banks. It includes total number of coins and notes which are in the economy. Money supply has three definitions.

1. Narrow definition of money Supply (M_1)
   M1 = Currency in circulation + Demand deposit

2. Broad definition of money supply (M_2)
   M_2 = Currency in circulation + Demand deposit +Time Deposit
   $M_2 = M_1$ +Time deposit

3. Extension (Broader) definition
   $M_3 = M_2$ + foreign exchange.

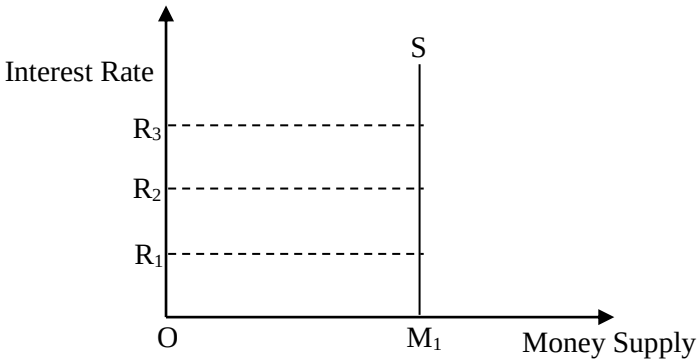


Figure: 7.1 In short run Money Supply is fixed

Increase in Money Supply

According to Keynes, if the economy is below full employment i.e there are idle resources, when money supply is increased then aggregate demand will also increase. This will affect the economy as follows:

- Production will be stimulated, leading to a rise in employment and income.
- However, if the economy is at full employment, which means there are no idle resources, the expansion in money supply will cause an increase in the purchasing power and since the economy is at full employment suppliers will not be able to increase supply due to lack of idle resources. As a result, demand will exceed supply and therefore lead to inflation. The cost of living will also increase; workers will demand more wages in order to contend with the increase in price.
  The increase in wages will increase the cost of production and further increase in price.

Decrease in Money Supply

If money supply decreases assuming the economy is below full employment, it will cause a decrease in aggregate demand, which will result into a fall in production, price,

employment and incomes. On the other hand if there is inflation the decrease in money supply will cause a decrease in purchasing power hence help to control inflation.

The Quantity Theory of Money

The theory was advanced by professor living Fisher who tried to explain the determination of the value of money. According to this theory, the value of money depends on the quantity of money in circulation.

It further states that there is a direct relationship between a change in the supply of money and the change in the general price level. When the supply of money changes it causes a proportionate change in the price level. For instance, if money supply increase by 20% price level will also increase by 20%. Fisher explained the theory by using the following equation

MV = PT

Or

$$P = \frac{MV}{T}$$

M = Quantity of money in circulation

V = Velocity of money in circulation

(v) is assumed to be constant, it does not change when money supply change P = price level

T = number of transactions

From the above equation when money supply is increased assuming that V and T are constant, price will increase but the value of money will decrease.

Example

Given

M1 = 20m, V = 10m, T = 5m

P = ?

Solution

$$p = \frac{MV}{T}$$

$$P = \frac{20 \cdot 10}{5}$$

$P_1 = 40$

Suppose that the money supply increases from 20m to 40m, what will be the change in price level?

Given

$M_2 = 40m$, v = 10m, T = 5m

$P_2 = ?$

Solution

$$P2 = \frac{MV}{T}$$

$$P2 = \frac{40 \cdot 10}{5}$$

P2 = Tshs 80
So, a change in money supply from Tshs20 to Tsh40 has resulted into an increase in the price level from Tshs 40 to Tshs80.

Assumptions of the Quantity Theory of Money

(i) It assumes that the velocity of circulation (V) is constant, but if the velocity of circulation changes proportional to the changes in the supply of money, then price will remain the same.
(ii) It assumes that number of transactions (T) are constant, if the number of transactions is proportional to the increase in quantity of money then price will remain constant. So, there must be no change in the number of transactions when the quantity of money changes.
(iii) There should be no barter transactions. The theory assumes non -existence of barter trade, that is, all transactions are done by using money as a medium of exchange but if most of the transactions are done through barter system then an increase or a decrease in quantity of money will have no impact on the price level.
(iv) The theory assumes that there is no hoarding of money, that is money, which is increased, should be used by the people for purchasing goods and not to be accumulated without buying goods. If people hoard money then an increase in the money supply will have no effect on the prices of goods.

Criticisms against the Quantity Theory of Money

(i) The theory states that the change in money supply will cause a proportionate change in price, which is not always the case, because a change in price is a function of both demand and supply. Also, prices of different goods do not change at the same proportion.
(ii) The theory has been criticized because it considers only the supply of money and completely ignores the demand for money.
(iii) The theory is inadequate because it does not take into account the rate of interest, which is an important determinant of the supply of money and demand for money. When the rate of interest is high the supply of money increases while the demand for money decreases. In this case the quantity of money cannot be increased when the rate of interest is low.
(iv) The theory assumes the velocity of circulation and the number of transactions to are constant but this apply only under static conditions. Under a dynamic economy velocity of circulation and number of transactions do change. Therefore the theory cannot apply in a changing economy.
(v) It is not a theory but a truism the equation MV = PT is a two ways of looking at the same thing. It is just a method of showing that there is a relationship between four variables M,V,P and T. It shows that the total quantity, as determined by the actual amount of money in existence and the velocity of circulation, is equal to the value of total trade transactions multiplied by their average price as such it is a truism since the amount of money spent on purchases is obviously equal to the amount received from sales, not only must MV be equal PT, but also MV is PT, since they are only two different ways of looking at the same thing.
(vi) The theory explains changes in the value of money but it does not explain how the value of money is in the first place determined.

(vii) The four variables, M, V, P and T are not independent of one another as the equation of exchange implies. For example, a change in M is likely by itself, to bring about a change in V or T or both. It is probable that a rise in prices will follow an increase in the quantity of money, but this will most likely be brought about because an increase in the quantity of money stimulates demand and production of goods and services.

(viii) The theory assumes that P to represents a general price level while in actual sense prices of different goods do not change at the same level, therefore a change in the quantity of money will not have similar effects to all the prices of all the goods.

Inflation

Is a persistent increase in the general price level.

Inflation rate

Is a rate at which price increase it is expressed in terms of percentage.

$$\text{Inflation rate} = \frac{\text{Price in the current year} - \text{price in the previous year}}{\text{Price in the previous year}} \times 100$$

$$\text{Inflation rate} = \frac{Pt - PO}{PO} \times 100$$

For example if the current year price for commodity X is Tshs 200 and the Base year price is Tshs 100.

$$\text{Inflation rate} = \frac{P_t - P_o}{PO} \times 100$$

$$\text{Inflation rate} = \frac{200 - 100}{100} \times 100$$

Inflation rate = 100%

Types of Inflation

Inflation can be categorized into two

1. According to the rate of inflation
2. According to the causes

1. According to the Rate of Inflation

In this category there are four types of inflation

(i) *Creeping inflation*: This is the type of inflation which occurs when price rises by 2% to 3% .This type of inflation is not harmful to the economy since it can stimulate investments.

(ii) *Moderate inflation:* This type of inflation occurs when price changes by 4% to 5%. This type is also not harmful to the economy.

(iii) *Rapid inflation*: This happens when price rises at a rate of 6% per annum. This type is harmful to the economy.

(iv) *Hyper inflation***:** This is a type of inflation which occurs when price rises daily such that people lose confidence in their currency. In this case, a new currency must be introduced. This kind of inflation occurred in countries such as German, Austria and Hungary, during the world war two.

2. According to the Causes
   According to the causes of inflation, there are various types of inflation

(i) *Cost Push Inflation:* This type of inflation is caused by the increase in the cost of production which is resulting from workers to demanding for more wages. When workers demand for more wages, it results into an increase in the cost of production. In order to cover costs of production, firms may raise prices of goods. when prices increase, workers will demand for more wages, this will again increase the cost of production and force firms to raise prices of the goods and workers to demand for more wages. At last cost push inflation will occur. Cost-push inflation is also known as wage spiral inflation.

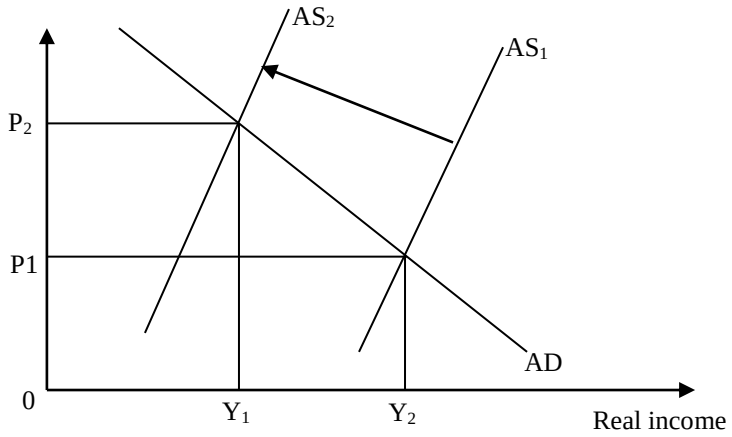


Figure: 7.2 Cost push inflation

In figure 7.2 above, a fall in aggregate supply from AS_1 to AS_2 while aggregate demand remain constant, forces general price level to increase from P1 to P1

(ii) *Demand Pull Inflation:* This is a type of inflation, that is caused by excessive aggregate demand. That is, when aggregate demand is greater than aggregate supply, it leads to a rise in price which results into inflation.

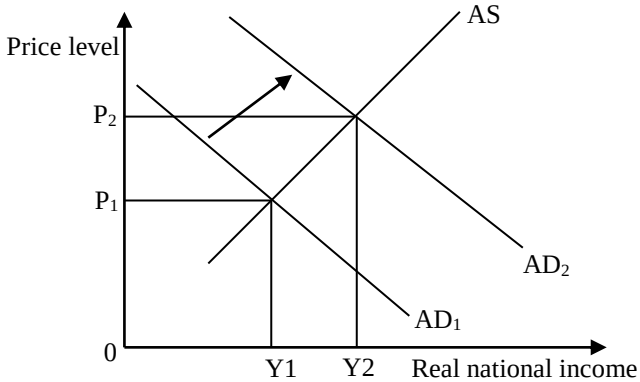


Figure: 7.3 Demand pull inflation

In figure 7.3 above, aggregate supply is fixed as a result when aggregate demand increase from AD1 to AD2, price rises to P_2 but aggregate supply remains constant, finally inflation takes place.

(iii) *Structural or Demand Shift Inflation:* This is a type of inflation which combines some elements of cost push inflation and demand push inflation it occurs when there are changes in the structure of demand and structural rigidities in the economy.

(iv) *Imported Inflation:* This is a type of inflation, that occurs due to importation of commodities from a country that is affected by inflation.

(v) *Expectation Inflation:* This is a type of inflation that transpires when buyers expect price to rise further and make panic purchases by buying more at a high price. This action of the buyers make the sellers further increase the price, consequently inflation takes place.

(vi) *Monetary Inflation :* This is a type of inflation, that results due to monetary reasons either due to excessive increase in money supply or money demand for transactionary motive. That is:-

- When money supply increases it results to an increase in the purchasing power of the people but if supply is less, elastic prices of goods will rise.
- When the demand for money for transactionary motive increases it pulls up prices of goods and services.

Causes of Inflation

Inflation may be caused by the following factors

(i) *Excessive Demand for Goods and Services:* When demand for goods increase while supply remains constant it underscores (causes) a rise in price and if the rise is persistent it results into inflation.

(ii) *Shortage of Goods and Services:* If the supply of goods decreases while demand is constant it results into demand pull inflation.

(iii) *Increase in the Cost of Production:* If the cost of production increase producers are forced to raise price in order to be able to cover the increased cost of production hence a cost push inflation.

(iv) *Increase in the Government Spending:* If the government deficit is financed by printing money it causes excessive money supply and lead to a monetary inflation.

(v) *Increase in Indirect Tax:* Indirect taxes such as value added tax have a direct impact on the prices of goods, when the government increases indirect tax the prices of goods also increase by the amount of tax this may also lead to inflation.

(vi) *Illegal Activities:* Illegal activities such as smuggling causes artificial shortage of goods and there fore rise in the prices of goods consequently inflation occurs.

(vii) *Calamities e.g. Earthquakes, War, Drought:* Flood etc. When these calamities occur production is discouraged resulting into the shortage of goods and services hence a rise in the prices of goods and services.

Effects of Inflation (Costs and Benefits)

Inflation has both positive and negative effect that is costs and benefits.

A. Benefits (Positive Effects of Inflation)

1. If inflation is moderate, it can stimulate production because producers are encouraged to produce more because of the high prices of goods.
2. Moderate inflation stimulates employment of resources because when inflation is moderate producers increase production. In this case they employ more resources.
3. Due to increase in employment income also increases. Examples of such incomes which increase when production is increased are salaries, wages, rent, interest, profit etc.

B. Cost of Inflation/ Negative Effects

When inflation rate is greater than 5%, it can causes the following negative effects:

1. It discourages savings because people use a lot of money to buy goods and services that are sold at high prices and little amount remains as saving, Due to the decrease in savings, investments also decrease because savings influence investment.
2. It can lead to balance of payment problems. Imports may be expensive during inflation while exports decline because during inflation exports become more expensive. Also cost of producing export commodities increase while price of export which are sometimes fixed in the world market remains constant
3. Peasants lose because prices of agricultural commodities tend to lag behind inflation, their savings, welfare, productivity falls.
4. Inflation results into rural-urban migration since it becomes less profitable to grow cash crops in rural areas. People migrate to towns to start business; this discourages agriculture in rural areas and also leads to urban unemployment.
5. People with low income and those with fixed income like pensioners, suffer during inflation because they can not afford to buy goods and services at inflationary price.
6. During inflation, the cost of production increases and therefore production is discouraged.
7. If it is hyper inflation people loose confidence in their currency.
   If this happen money can not be accepted as a medium of exchange.
8. Money seizes to be a store of value. During inflation the value of money declines and money can not perform its function as a store of value.

Measures of Controlling Inflation

Depending on the cause of inflation, inflation can be controlled by the following measures:

(a) Monetary Measures
(b) Fiscal Measures
(c) Non-Monetary Measures

A. Monetary Measures

These are measures of controlling inflation where by inflation is controlled by controlling the money supply. These measures are initiated by the central Bank and implemented by commercial Banks. Monetary measures involve the use of the following tools/instruments.

(i) *Open Market Operation:* This is the market which involves buying and selling of securities, during inflation the central bank sells securities to the public. By doing so money is reduced in circulation this reduces the purchasing power of the people and thus help to control inflation.

(ii) *Bank Rate?:* This is the rate which the central bank charges commercial banks whenever commercial banks borrow money from the central bank, during inflation the central bank discourage commercial banks from borrowing money by increasing bank rate in response commercial banks also increase interest rate in order to discourage the public from borrowing money, this results to a decrease in money supply hence control of inflation.

(iii) *Control of Credit:* In order to control inflation the central bank gives order to the commercial banks to reduce money supply by reducing the volume of lending. When banks reduce lending to the public, money in circulation is reduced and thus the purchasing power of the people is checked hence inflation is put under control.

(iv) *Reserve Requirement:* A reserve requirement is a minimum balance that every commercial bank is required to have in order to meet daily demand for the customers; commercial banks are not required to give loans beyond the reserve requirement. During inflation the central bank instruct commercial banks to increase reserve requirement in order to reduce the lending power of commercial banks.

(v) *Special Deposits:* These are special accounts which are opened by commercial banks at the central bank; during inflation the central bank instruct commercial bank to increase special deposits in order to reduce the lending powers of commercial banks.

(vi) *Special Credits:* This is a type of instrument where by the central bank instruct commercial bank to provide credits to only special sectors or projects which may increase production and therefore control inflation.

(vii) *Moral Suasion:* In this instrument the central bank persuades or advice commercial banks to reduce amount of credits in order to control inflation.

B. Fiscal Measures

These are measures whereby the government controls inflation by controlling revenue (taxation) and expenditure. The following are the fiscal measures:-

(a) *Reduction of Taxation*

During inflation, the government reduces, indirect tax ie tax on goods and services. By doing so prices of these goods services may decline, leading to a fall in the inflation rate.

(b) *Increasing Tax*

During inflation, the government increases direct tax i.e. tax on income. By doing so income of the people decline as well as their purchasing power, when the purchasing power is reduced inflation rate declines.

(c) *Reducing Government Expenditure*

During inflation, the government reduces its expenditure on things such as wages, education, health, defense and security, leading to the fall in the purchasing power and therefore decreases in the price of goods.

Non- Monetary Measures

(a) *Wage Control*

During inflation the government controls excessive rise in wages so as to reduce the purchasing power of people, when the purchasing power decline price falls.

(b) *Promotion of Production*

During inflation, the government takes various measures in order to increase production in various sectors. Such measure is the provision of credits and subsidies to the productive sectors of the economy like agriculture and industry. Also the government can improve infrastructures such as electricity, road, and water supply in order to promote production. When production is increased, prices fall and then inflation is put under control.

(c) *Price Control*

During inflation, the government can control the rise of price by fixing a maximum price to various essential commodities.

Deflation

This is the continuous (persistent) decrease in price level

Causes of Deflation

(i) *Excessive Supply:* When the supply of goods exceeds the demand for the goods it causes decrease in prices.

(ii) *Decrease in Effective Demand:* When the effective demand of the people declines it results into the fall in the price level.

(iii) *Decrease in the Money Supply:* A decrease in the money supply affects the purchasing power of the people and leading to the fall in the price level.

(iv) *Fall in Incomes:* When incomes of the people such as wages and profit declines it restrain the purchasing power of the people leading to the fall in prices.

(v) *Decrease in Government Expenditure:* If the government's spending on expenditure such as wages, security, education is reduced it affects incomes of the people and their purchasing power consequently a fall in the prices of goods and services.

(vi) *Increase in Tax:* If the government increases tax on income it reduces the disposable incomes i.e. income that remain after the deductions have been made from income of the income earners. This affects peoples the purchasing power and results into the fall in the prices of goods.

Measures of Controlling Deflation

Deflation can be controlled by applying the following measures

(i) Expansionary monetary policy.

(ii) Expansionary fiscal policy.

(iii) Non monetary measures.

(i) Expansionary Monetary Policy

This is a policy of controlling deflation by increasing money supply in the economy, when money supply is increased the purchasing power of the consumers is activated leading to the increase in effective demand and price stabilization. Money supply is increased by using instruments of monetary policy such as the expansion in credits, buying of securities and reduction of reserve requirements.

(ii) Expansionary Fiscal Policy

Deflation can be controlled by using the following expansionary measures.

- The government may increase its expenditures in order to increase the purchasing power of the people and therefore stimulate a rise in the prices.
- During deflation the government reduces the direct tax ie tax on incomes. When tax is reduced the income of the people increases by the proportion of the tax reduced this leads to an increase in the purchasing power of the people and therefore stimulates a rise in the price.

(iii) Non- Monetary Measures.

Deflation can be controlled by using the following non-monetary measures:-

(i) *Rise in Wages*

During deflation the government can raise the level of wages. By doing so the purchasing power of the people will raise leading to the increase in prices.

(ii) *Control of Excessive Supply*

When the supply of goods and services is excessive the government or firms can reduce production in order to stabilize price.

(iii) *Direct Price Control*

During deflation, the government can apply price stabilization policy by raising the prices of goods.

Effects of Deflation

Deflation has the following effects

(i) *Production is discouraged*

During deflation, the prices of goods are so low as a consequence it leads to the fall in effective demand.

(ii) *Increase in unemployment.*

Deflation may cause a serious unemployment problem due to slow production caused by weak effective demand.

(iii) *Fall in incomes*

Deflation leads to the fall in incomes such as profit due to low demand and wages due to fall in the demand for labour.

(iv) *Fall in the standard of living.*

During deflation the standard of living of the people is poor because of the decline in incomes.

Devaluation of a Currency

Devaluation is a purposeful action by the government of reducing the value of the domestic currency in terms of a foreign currency. For example, if the exchange rate between a Tanzanian shilling and the USA dollar is Tshs 800:1$.If Tanzania devalue its shilling by 50% the new exchange rate will be 1$: Tshs 1200.

Aims of Devaluation

Governments devalue currencies in order to achieve the following:

(i) *To increase exports:* When a domestic currency is devalued the price of exports declines causing the demand for export to increase.

(ii) *To control imports:* When a currency is devalued the price of import increase as a result less imports are demanded and therefore a country achieves a favorable balance of payments.

(iii) *To protect domestic industries:* When a currency is devalued imports become more expensive and therefore the demand for locally produced goods increase.
(iv) *To create employment:* Devaluation promotes the production of exports and therefore it increases more employment.
(v) *To control importation of harmful commodities:* When a currency is devalued, imports are discouraged including harmful commodities.
(vi) *To create a favorable balance of payments*
Devaluation encourages exports but discourages imports hence it help to create a favorable balance of payments.

Effects of Devaluation

(i) *Decrease in the imports*
Devaluation leads to the rise in the price of imports and thus less goods are imported when a currency is devalued.
(ii) *Increase in exports*
Devaluation makes exports less expensive and therefore more goods are exported as a result of devaluation.
For example, if the exchange rate between a Tanzanian shilling and US dollar is 1$: Tshs 800 foreigners need one US dollar to buy a kilogram of coffee sold at tsh. 800 if the government of Tanzania devalues the shilling by 50% the new exchange rate will be 1$: Tshs. 1200. Therefore foreigners will now need only a half a dollar to buy the same quantity or in real terms to foreigners the price of coffee has declined by 50% in this case they will be encouraged to purchase more Tanzanian coffee and other goods.
(iii) *Devaluation may lead to a favorable balance of payments*
Devaluation promotes exports but discourages imports and therefore help to create a favorable balance of payments.
(iv) *Devaluation can cause inflation*
Devaluation makes imports more expensive and if these imports have inelastic demand as for the case of necessities there will be a little check on imports, as these imports become more expensive workers will demand for more wages, high wage bills will raise the cost of production, hence force firms to raise the prices in to cover the cost of production and workers to demand for more wages consequently cost push inflation will take place.
(v) *Loss of confidence in a country's currency*
Repeated devaluation may result to other countries to lose confidence in a currency of a country concerned and be detrimental to world trade because devaluation is a kind of protectionism.
(vi) *Devaluation can cause an increase in the cost of production*
If firms in a country depend on imported input devaluation will cause an increase in the cost of production because after devaluation the prices of the imported input become high.

Conditions for Devaluation to be Successful

(i) In order for devaluation to be successful the price elasticity of demand for a country's exports must be elastic so that more quantity is demanded when exports become cheaper due to devaluation. If the price elasticity is less elastic devaluation

will be less effective because the proportion increase in quantity demanded will be smaller than the proportion of decrease in price hence the country concerned will lose revenue.

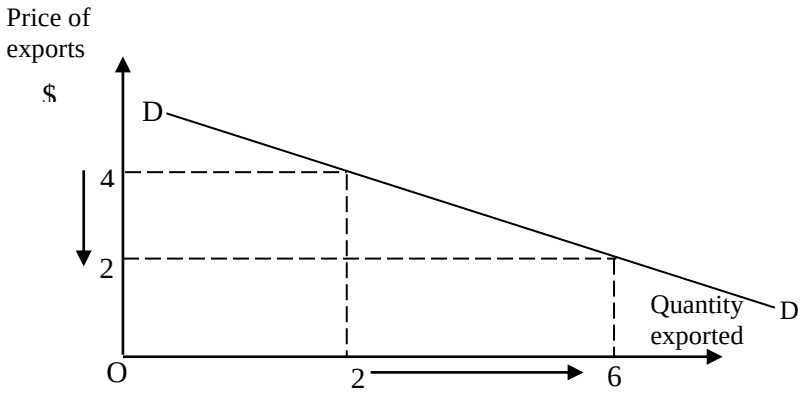


Figure: 7. 4 Devaluation when demand for export is elastic

In figure 7.4 above, devaluation is successful because the demand for export is elastic, a fall in price of exports from 4$ to 2$ results into a larger increase in quantity exported from 2 units to 6 units. Thus to increase in revenue from 4x 2=8$ to 2x6=12$

(ii) For devaluation to be successful the price elasticity for imports must be elastic, so that when a currency is devalued the quantity demanded for imports decrease by a larger proportion. If imports have inelastic demand devaluation will be less meaningful because imports will decrease by a smaller proportion after devaluation hence a country will spend more revenue on imports than before.

(iii) For devaluation to be effective, other countries which produce similar products should not engage in similar policy of devaluation. If these countries also devalue their currencies, there will be a similar decrease in the price of their exports and if the size of demand for exports is constant there won't be any significant gains by all these countries.

Depreciation of a Currency

Depreciation of a currency is the decrease in the value of the domestic currency in terms of a foreign currency, for example if the exchange rate between the Tanzanian Shilling and the Kenyan Shilling change from 1Ksh:10Tshs.to1Ksh:20TShs.then the Tanzanian shilling is said to have depreciated.

Causes of Depreciation of a Currency

In a flexible exchange rate depreciation of a currency is caused by the market forces of demand and supply, if the demand for a domestic currency increase due to the increase in the volume of exports the value of a domestic currency will increase.

If on the other hand the demand for the foreign currency increase due to increase in demand for imports the price of the foreign currency will increase and the domestic currency will depreciate. It can be concluded that

(i) An increase in the demand or volume of exports increases the supply of a foreign currency in a domestic economy and causes an appreciation of the domestic currency.

(ii) An increase in the demand for imports or volume of imports increases the demand for the foreign currency and thus causes an increase in the price of the foreign currency and depreciation of the domestic currency.

Effects of Depreciation of a Currency

(i) The exports of a country increase because they become cheaper when a currency depreciates.
(ii) Imports decrease because they become more expensive when a currency depreciates.
(iii) Depreciation promotes domestic industries because of the increase in the demand for the export and the decrease in the demand for imports.
(iv) Depreciation of a currency may help to reduce a deficit in the balance of payments because of the increase in the volume of exports and a decrease in the volume of imports.
(v) Depreciation of a currency may promote employment in the domestic economy because of the resulting increase in the production of goods for exports.

Appreciation of a Currency

This is the increase in the value of the domestic currency in terms of a foreign currency for example if the exchange rate between a Tanzanian shilling and a Kenyan shilling is 1ksh: 10sh.when the exchange rate change to 1ksh: 5 tshs then the Tanzanian shilling is said to have appreciated.

Causes of Appreciation of a Currency

In flexible exchange system appreciation of a currency depends on the supply of a currency in the foreign exchange market in relation to the demand for it in that market.

(i) When the demand for exports increase it will cause an increase in the demand for a domestic currency in the foreign market as a result the value of a domestic increase (appreciate).
(ii) When the demand for imports increase the supply of a domestic currency in the foreign market increase leading to the decrease in the value of a domestic currency.

Effects of Appreciation of Currency

(i) Appreciation of a currency reduces the volume of exports because they become more expensive to foreigners. For example if the exchange rate between a Tanzanian shilling and a USA dollar is 1$: 10 Tshs. foreigners will be able to buy 1kg of a Tanzanian exports that is sold at Tshs 10 by using 1$. If the Tanzanian shilling appreciate by 50% and the exchange rate become 1$: TShs5.foreigners will now need 2$ to buy the same quantity at the same price of Tshs 10.

Table 7. 1 Example of a schedule showing a decrease in the demand for export after the appreciation of a currency

Exchange rate	**Price of an export**	**Quantity of export demanded**	**Dollar spent**
1$:10sh	Tsh.10	1kg	1$
1$:5sh	Tsh.10	0.5kg	1$

In the above chart before the appreciation of a Tanzanian shilling foreigners could buy 1kg for one dollar but after the appreciation of the shilling foreigners can buy only o.5kg of the commodity for the same amount of dollar.

(ii) Appreciation of a currency leads to the increase in the volume of imports because when a currency appreciates imports become less expensive.

Table 7.2 Example of a schedule that shows the effects of appreciation of a currency on the import of commodity X

Exchange rate	**Price X in $/kg**	**Quantity of X imported**	**Tshs. Spent**
Before appreciation of a shilling 1$:10tshs	100$	1kg	1000
After appreciation of a shilling 1$:5tshs	100$	2kg	1000

In the above chart before the appreciation of a shilling. Tanzanians imported one unit of commodity X sold at 100$ by using Tshs1000.after the appreciation of a shilling, Tanzanians imported two units of commodity X sold at 100$ per unit by using Tshs.1000.so there is an increase in the volume of imports from 1kg to 2kg.after the appreciation of the Tanzanian shilling.

(iii) Appreciation of a currency may cause problems in the balance of payments because it leads to an increase in the volume of imports and decrease in the volume of exports, therefore a country spends more on imports than what it receives from its exports.

(iv) Appreciation of a currency may discourage production of goods for exports and therefore may result into problems such as unemployment.

Price indices/cost of living indices

This is a statistical measure which shows the relative changes in the prices of various commodities during a given period of time.

Procedures of Measuring Price Indices

The procedures of measuring price indices are as follows:

- Choice of an area from which the data should be collected.
- Choice of representative sample of families.
- Choice of common basket of goods ie goods that are consumed by the majority.
- Ascertaining the unit price of commodities.
- Choice of the base year, a year in which prices was relatively stable. The base year prices are given a unit of 100 for the purpose of computation.
- Giving of weights to goods according to their importance.
- The current prices are then valued in relation to the base year prices.
- Choice of a formulae -either PAACHE'S or LAASPER'S formula.
- Computation
- Interpretation**.**

If the weighted index of the base year is greater than the weighted index of the current year then it would mean that prices have declined and therefore

(i) The cost of living has declined
(ii) The money value has increased
(iii) The saving capacity has increased
(iv) The investments have increased
(v) The standard of living has increased
(vi) The purchasing power has increased

If the weighted index of the base year is lower than the weighted index of the current year then it would mean that prices have increased and therefore
(i) The cost of living has increased
(ii) The money value has decreased
(iii) The saving capacity has fallen
(iv) The investments have fallen
(v) The standard of living has fallen
(vi) The purchasing power has fallen

Types of Price Index

There are two types of price indices
1. Simple price index
2. Weighted price index

1. Simple Price Index

This is the simplest index, it involves only one commodity and it is expressed as the ratio of the current year price of a commodity and the base year price of the commodity

$$\text{Simple price index} = \frac{pn}{po} \times 100$$

Where Pn = price of a commodity in the current year
Po = price of a commodity in the base year

Note:
An index of the base year is 100%, therefore a change in price is obtained by subtracting 100%from the price index of the current year.
Change in price =Price index - 100%
Any positive answer means that price has increased while any negative answer means that price has declined. Example; if price index is 120%, then the change in price = 120% - 100% = 20%, this shows an increase in price by 20%and therefore
- The cost of living has increased
- The money value has fallen
- The standard of living has fallen
- The purchasing power has fallen

Example

Find price index given that the price of sugar in 1999 was Tshs400 and in 2000 it was Tshs600.

Solution

Simple price index = $\frac{pn}{po} \times 100$

Where Pn = Price of a commodity in the current year
Po = Price of a commodity in the base year

Simple price index = $\frac{600}{400} \times 100 = 150\%$

Change in price =150%-100% = 50%

Interpretation of the Results

- Price of sugar has increased by 50%
- Cost of living has increased by 50%
- Standard of living has fallen
- Purchasing power of the people has declined

2. Weighted Price Index

In this index weights of goods are attached depending on the goods relative importance, weighted index are expressed as either *Laaspers index* or *Paaches index.*

(a) Laaspers Price Index

This uses the base year quantity and it is given as:

Laasper's price index = $\frac{\sum pnqo}{\sum poqo} \times 100$

Where;

Pn = current year price
Po = base year price
Qo= quantity of the base year
$\sum$ = summation across

(b) Paaches Price Index

This uses quantities of the current year and it is given as

Paaches price index = $\frac{\sum pnqn}{\sum poqn}$

Where;

Pn = Price index of the current year.
Po = Price index of the base year.

Example 1

Table 7.3 Given the following information concerning purchases in 1985 and 1998

ITEMS	1 9 8 5		1 9 9 8	
	Quantity	Price per unit $	Quantity	Price per unit $
Cars	1000	2000	3000	4000
Suits	50,000	20	60,000	100

Calculate:
(i) Laaspers price index.
(ii) Paaches price index and give interpretation of the answer.

Solution

(i) Laaspers price index = $\frac{\sum pnqo}{\sum poqo} \times 100$

L.P.I = $\frac{\sum (4000x1000)+(100\times 50000)}{\sum (2000x1000)+(20\times 50000)} \times 100$

L.P.I = $\frac{4{,}000{,}000+5{,}000{,}000}{2{,}000{,}000+1{,}000{,}000} \times 100$

L.P.I = $\frac{9000000}{3000000} \times 100$

L.aaspers price index = 3×100
Laaspers price index = 300%
Interpretation
The change in price = 300% - 100% = 200% implying that
Therefore;

- Price has increased by 200%
- Cost of living has increased by 200%, i.e. quantity bought in 1975 would cost less by 200% if bought in 1945
  - The value of money has declined.
  - The standard of living has declined.

(ii) Paaches price index = $\frac{\sum pnqn}{\sum poqn} \times 100$

Where,
$\sum$ = sum across, pn = current year price, po = base year price

Paaches price index = $\frac{(4000\times 3000)+(100\times 60000)}{(2000\times 3000)+(20\times 60000)} \times 100$

Paaches price index = $\frac{18{,}000{,}000}{7{,}200{,}000} \times 100 = 250\%$

Interpretation
The change in price =250% - 100% = 150% which imply that

- Price has increased by 150%
- Cost of living has increased by 150% i.e. the quantity bought in 1975 would cost less by 150% if bought in 1945.
  - The value of money has decreased.
  - The standard of living has declined.

Table 3:2; Example 2:

YEAR	1 9 7 0		1 9 8 0	
ITEMS	QUANTITY-kg	PRICE $	QUANTITY-kg	PRICE $
Rice	2	3	2	4
Maize	5	2	10	1.5
Meat	2	5	1	25
Fish	3	1	8	5
wheat	2	1.5	3	7

Calculate Paaches and Laspers price index

(i) Paaches price index = $\frac{\sum pnqn}{\sum poqn} \times 100$

$= \frac{(4\times2)+(1.5\times10)+(25\times1)+(5\times8)+(7\times3)}{(3\times2)+(2\times10)+(5\times1)+(1\times8)+(1.5\times3)} \times 100$

$= \frac{8+15+25+40+21}{6+20+5+8+4.5} \times 100$

$= \frac{109}{43.5} \times 100$

Paaches index = **250%**

Interpretation

The change in price = 250% - 100% = 150%, therefore;

- Cost of living has increased
- Standard of living has declined
- The value of money has declined
- Saving power has declined

(i) Laspers Price Index

L.P.I = $\frac{\sum pnqo}{\sum poqo} \times 100 = \frac{4\times2+1.5\times5+25\times2+5\times3+7\times2}{3\times2+2\times5+5\times2+1\times3+1.5\times2} \times 100$

Laasper's price index = $\frac{8+7.5+50+15+14}{6+10+10+3+3} \times 100$

Laaspers price index = $\frac{94.5}{32} \times 100 = 295\%$

Interpretation

The change in price =295%-100%=195%, therefore;

- Price has increased by 195%.
- Cost of living has increased by 195%.
- The value of money has declined.
- Standard of living has fallen.

Problems of Measuring Price Index

Measurement of price index is encountered by a number of under listed problems:

1. *Problem of Choosing a Base Year:* A base year is supposed to be the year in which there are no fluctuations of prices but it may be difficult to find a year in which prices were stable throughout the year.
2. *Problem of Finding a Common Basket:* A common basket is a list of goods that most of the people in a given area consume but it is very difficult to find a common basket of goods because people do not buy and consume the same commodities over a certain period of time because what people buy and consume depends on a number of factors such as income, taste and preference.
3. *Problem of Variation in Prices of the Same Commodities to Different Consumers*: Often different consumers are charged different levels of prices for the same commodity. This brings problems of establishing common prices for commodities. The variation in levels of prices arise due to:
   (a) Differences in quantities bought by different consumers. Those consumers who buy in larger quantity are normally offered a discount so they buy at low prices and those who buy in small quantity are normally not given a discount so they buy at much higher prices.
   (b) Differences in bargaining power among the consumers. Consumers with a high bargaining power normally buy at lower prices as compared to consumers with no bargaining power.
   (c) Distance from the market place. Consumers who come far from the market place incur additional transportation cost which adds to the cost of buying the commodities while the consumers who are close to the market have no additional transportation cost. So, their total cost of buying commodities is much lower than that of consumers who come far from the market.
   (d) Time of purchasing the commodity. Under some circumstances, sellers offer cheaper prices during the evening but high prices during the morning up to noon.
4. *Problem of Finding a Representative Sample of Consumers:* It may be difficult to get a sample of consumers if the population has many high income earners. These with high income, normally have different baskets of goods that they consume. It means they consume so many types of goods as compared to low income earners.
5. *Changes in Pattern of Consumption, Household Consumption Expenditure Changes Over Time:* It means nature of consumption among the people change as time also changes. The reasons for these changes are; introduction of new products in the market, changes in taste and fashion, changes in income, changes in weather etc.

Limitations of Using Price Index to Compare Standard of Living

- Changes in consumption pattern due to change in taste and fashion.
- Price index is based on the consumption of an average family only.
- Only few items are included in the price index.

Uses of Price Index

Price index has the following uses:

1. *Price index is used to show changes in the value of money:* When the index is greater than 100% it means an increase in the levels of prices meaning that the value of money has decreased because has an inverse relationship between the levels of prices and the value of money (ref: Quantity theory of money)**.**

2. *Price Index is Used to Show Changes in Standards of Living Over a Certain Period of Time:* An index greater than 100% implies that the cost of living has risen therefore the standard of living has decreased. Because when price rises the cost of buying goods increase. This make consumers buy less goods than before, hence fall in the standard of living.
3. *Prices Index is Used to Measure the Cost of Living:* A price index which is greater than 100% implies an increase in cost of living, while price index less than 100% implies decrease in cost living.
4. *Price Index is Used to Show Terms of Trade in International Trade*

   $$\text{Terms of Trade} = \frac{px}{pm} \times 100$$

   Where; Px = price index of export
   Pm = price index of import.
5. *Price Index is Used to Compare Real GNP of Different Countries Over Years* : This is because price index can be used as a GNP deflator and therefore eliminates elements of inflation in a nominal GNP.
6. *Price Index Can Be Used as GNP Deflators*: It means price index can be used to eliminate or remove element of inflation in a nominal GNP in order to get a real GNP. The formula used to change nominal GNP to real GNP is

   $$\text{REAL GNP} = \frac{\text{NOMINAL GNP}}{\text{GNP DEFLATOR (PRICE INDEX)}}$$

   Real GNP is the actual volume of goods and services produced in a country in a certain period of time.
   Nominal GNP is the value of goods and services produced in a country in a given period of time measured at market price (current price). Nominal GNP has to be deflated in order to see whether or not there has been increase or decrease in real output. Real output (1997) = $\frac{\text{Nominal GNP}}{\text{GNP deflator}}$

The standard of living and cost of living

The standard of living refers to the general level of economic welfare attained either by the population as a whole or by a single individual or household .The standard of living includes the utility obtained from:

(i) Goods and services bought in a market.
(ii) Goods and services provided freely by the state.
(iii) Positive externalities obtained outside the market.
(iv) Other intangibles such as leisure.

Standard of living can be measured by comparing GNP figures per capita over years. However, GNP figures are inaccurate measure of the standard of living because it fails to measure the contribution of externalities and other intangibles to the standard of living such as leisure. Cost of living refers to the monetary cost of obtaining the goods and services bought in the market economy. Cost of living can be measured by using the price index where if the price index is less than that of the base year i.e. less than 100% it implies a fall in the cost of living whereas the price index greater that of base year i.e. greater that 100% implies a rise in the cost of living.

TOPIC EIGHT

TRADE CYCLE

A trade cycle is a tendency of the economy of a country or business activities in a country to fluctuate from one period to another period. When the economy is at its best it is known as a boom and when the economy is at the lowest level it is known as a depression.

Causes of Trade Cycles or Origins of Trade Cycle

A trade cycle is caused by the following factors:

1. Changes in Climate

When the climate is favourable, production in agriculture and other industrial sector increase. This leads to an increase in employment, income and the standard of living. This is a period of a recovery or a boom on the contrary unfavourable weather conditions hinder the growth of agricultural production and thus causes a fall in employment, incomes and the standard of living. This circumstance is economic recession or depression.

2. Monetary Factors

Trade cycle can be caused by the expansionary and contractionary monetary policies. When the government apply expansionary monetary policies through measures such as reduction in the rate of interest, expansion of credits, and buying of securities, investors are encouraged to increase investments. When investments increase, more employment opportunities are created, income increases as well as the standard of living of the people, when such a phenomenon occur an economy is said to experience a recovery or boom, nevertheless a contractionary monetary policy through measures such as increase in interest rate, selling of securities and decrease in the amount of credits, discourage investments and thus result in a fall in employment, incomes and living standards. Such economic situation may result into a recession or a depression. Likewise an increase in the demand for money for transactionary motive causes an increase in the effective demand which stimulates further increase in investments, employment and incomes this situation may lead to a recovery or a boom, in contrast a decrease in money demand for transaction motive discourage effective demand which also discourage investments and hence lead to decrease in employment and income and this brings an economy to a recession or depression.

3. Fiscal Factors

Trade cycle can be caused by expansionary fiscal and contraction fiscal policies as follows:

(i) Expansionary Fiscal Policy

The following expansionary monetary policy can lead to a

(a) *Reduction of Indirect and Direct Taxes*: By reducing indirect tax, producers are encouraged to increase production because low taxes reduce the cost of production. Consumers are encouraged to consume more when direct tax is reduced, because the disposable incomes of consumers increase and therefore consumers are also able to purchase more goods.

(b) *Increase in Government Expenditures*: By increasing government expenditures on public works such as road construction health, water supply, education, electricity supply etc, it results in creation of incomes, employment and increase in investments. This will lead to a boom.

(ii)Contraction Fiscal Policy

The following contraction fiscal policy can lead to a trade cycle

(a) *Increase in Tax:* This is a contraction fiscal policy which results into an increase in the cost of production and prices of goods, consequently a fall in production and consumption and hence an economic recession.

(b) *Decrease in Expenditure:* This is the reduction of the government expenditure on public works such as health, education, road construction, security, salary to civil servants etc. This reduction leads to decline in employment, incomes and discourage investments. Thus a recession may occur.

4. Psychological Reasons

Business men/investors are influenced in their decisions by waves of pessimism and optimism. After depression has continued for a very long period, businesspeople hope that good times are just around the corner. Therefore they start increasing investments so that they can get high profit when good times come. Such a move leads to an economic recovery or boom on the other hand after a boom has continued for a long period of time investors will start to worry that bad times are about to come so they will stop investing for fear that they will get loss. In this case, an economic recession can occur.

5. Over Consumption and Under Consumption

When consumption increases production is accelerated leading to an economic expansion. However, when consumption is flimsy, production is discouraged and thus and economy may fall into a recession.

6. Over Investment and Under Investment

When there is over investment in an economy due to factors such as decrease in interest rate, increase in demand, technological innovations etc the economy will experience a recovery. but when there is under investment due to factors such as increase in interest rates, poor technology and fall in effective demand the economy will experience a down turn.

7. Technological Changes

If there is a technological improvement, it will lead to an increase in production which will enable an economy to carry through an expansion.

8. Political and Social Factors

Political and social stability provide conducive environment for the growth of investments and an economic enlargement, while instabilities are disincentive to investments and thus are to blame for economic slump. Likewise actions of politicians can be a reason for either expansion or decline of economic activities. For example, during election they use expansionary fiscal and monetary policies to pacify voters and in a short run an economy undergoes an expansion but after being elected they apply contraction monetary and fiscal policies, by increasing tax, interest rate and decreasing

wages in order to bring the economy back on the track. In this case, the economy may fall in doldrums.

Phases of a Trade Cycle

These are the stages which a cycle may undergo
There are four phase of trade cycle namely

1. Boom (peak).
2. Recession (downturn).
3. Depression (slump).
4. Recovery (expansion).

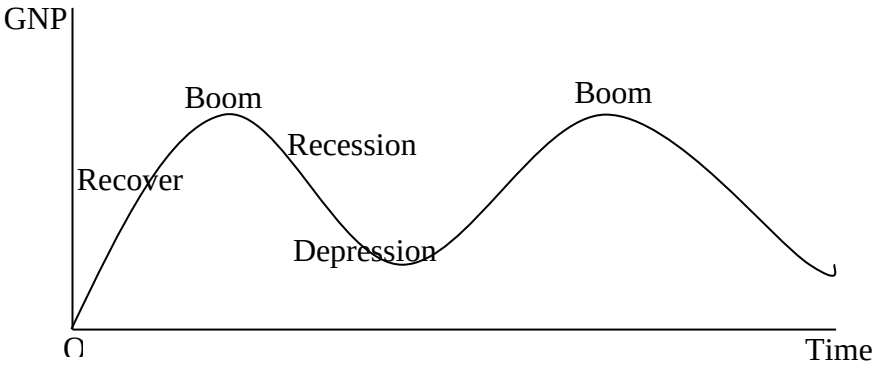


Figure: 8.1 Phases of trade cycle

The phases of trade cycle in figure 8.1 above, can be explained as follows:

1. Boom

It is the period when the economy is at its the highest level. During this period, the economy has the following features:

- High level of investments.
- Lowest level of unemployment.
- Incomes are high.
- Stable prices.
- High effective demand.
- High standard of living.
- Social and political stability.

2. Recession

It is the temporary decline in economic activities which it has the following features:-

- Decrease in investments.
- Decrease in employment.
- Decrease in incomes.
- Decrease in effective demand.
- Decrease in the living standards.

3. Depression

It is the period of total decline in the economy or stagnation of the economy. It has the following features:

- Lowest level of investments.
- Highest level of unemployment.
- Lowest levels of incomes.

- Lowest level of consumption.
- Prices are very low.
- People lose confidence in their government.
- Lowest standard of living.
- Social and political unrest.

4. Recovery

This is the period when the economy starts to improve, expansion follows after a depression or a recession. It has the following features.

- Investments start to expand.
- Employment starts to increase.
- Incomes increase.
- Prices start to rise.
- Effective demand increase.
- The standard of living starts to rise.

Theories of Trade Cycle

These are various theories which explain why a trade cycle occurs.

1. Climate Theory (Harvest Theory)

According to this theory, trade cycle is said to occur due to variations in climatic conditions. When climate is favourable, output increases in agriculture and industries which depend on inputs from the agricultural sector,

thus a favourable climate leads to economic expansion, conversely

unfavourable climate causes a decline in output in agriculture and in agro based industries and therefore leading to economic decline.

2. Monetary Theory

According to this theory, trade cycle occur due to changes in money supply and money demand.

Changes in Money Supply

(i) Increase in money supply: When money supply increases through increase in provision of credits, investments are encouraged and thus employment, incomes, effective demand increases as well as the standard of living, this is period of a boom or economic recovery.

(ii) Decrease in money supply: When the money supply decrease due to reduction in the amount of credits or decrease in the government expenditures, investments are discouraged. As a result, employment, income and effective demand fall, hence an economic recession occurs.

Changes in Money Demand

(i) Increase in money demand: An increase in money demand for transaction motive stimulates consumption and production, thus causes an economic expansion.

(ii) Decrease in demand: A decrease in money demand for transaction motive discourages effective demand and production and therefore results in a recession or depression

3. Over Investment Theory

According to this theory, trade cycle occurs due to over investment; over investment occurs due to the following reasons:

(i) Fall in the Rate of interest : When rate of interest is low investors are encouraged to borrow more money for investment , hence more investments are created leading to economic growth.

(ii)Technological Innovations: Invention of new technology causes an increase in production and economic expansion.

(iii) Increase in effective demand: When effective demand increases producers are encouraged to increase production. Therefore the economy undergoes economic growth.

4. *Political Theory:* According to this theory, fluctuations in economic activities are caused by
   (i) Actions of politicians who apply expansionary monetary and fiscal policies for their political interest i.e. to gain political popularity. These policies lead to economic prosperity in the short run, but after winning elections, politicians apply contraction monetary and fiscal policies which lead to economic contraction.
   (ii)Political stability and instability- When there are political stability investors are encouraged to increase investments; an increase in investments causes economic growth. In contrast whenever there is political instability investors are discouraged to invest and thus an economy falls into a recession.
5. *Keynesian Theory:* According to Keynes a trade cycle is caused by changes in the rate of investment and the rate of investment is caused by the marginal efficiency of investment i.e. profitability of investments. If the rate of profit declines, investors are discouraged from increasing investment, the economy falls into a recession and if the rate of profit increases, investors are encouraged to increase investment, and therefore the economy will experience a recovery.
6. *Modern Theory of Trade Cycle:* According to this theory, trade cycle occur due to multiplier and accelerator processes. An increase in investments leads to an increase in income through a multiplier process. An increase in income stimulates further increase in investments through the accelerator process. Increase in investments stimulates further increase in income therefore economic recovery or a boom is caused by effectiveness of the multiplier and accelerator processes while economic recession is caused by ineffectiveness of the multiplier and accelerator processes.
7. *Psychological Theory:* According to this theory, trade cycle can be explained in Psychological terms. It is said that businesspeople are influenced by waves of pessimism and optimism, after a slump has continued for a long period of time businessmen hope that better times are just round the corner so they invest more as a result a recovery can take place. On the other hand after a boom has continued for a long time businessmen start to worry about bad times so they stop investing. As a result the economy enter into a recession.

Policy Measures of Controlling Economic Recession

Economic recession can be controlled by using the following measures:

1. *Expansionary Monetary Policy*

The government through the central bank may increase money supply in order to stimulate economic activities. Examples of measures under this policy are reduction in the rate of interest, expansion of credits, buying of securities etc. By doing so, the level of investments increase and as a result the economy is stimulated.

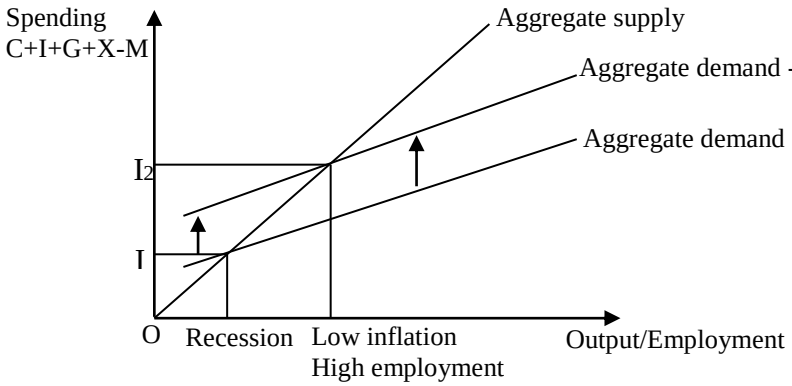


Figure: 8.2 Impact of expansionary policy on output and employment

In figure 8.2 above, if the economy is sluggish as a result of too little aggregate demand D1, then the central bank can undertake anti-recessionary monetary policies to stimulate investment spending I1, thereby expanding aggregate demand to D-2 from D-1.

2. Expansionary Fiscal Policy

The government can apply expansionary fiscal policy to stimulate the economy by

(i) Increasing its Expenditures*:* The government can increase its expenditure on public utilities such as electricity, education, health, road construction; water supply etc. Expenditure on these services help to create employment and income to the people and therefore help to excite the economy.

(ii) Providing Subsidies*:* By providing subsidies to productive sectors of the economy such as agriculture, mining and other industries, production of these sectors increases therefore the economy can expands.

(iii) Reducing Taxes: The government can reduce direct tax, i.e. tax on people's income in order to increase the purchasing power of income earners which may increase effective demand. When effective demand increases it stimulates further increase in production. Also, the government may reduce indirect tax i.e. tax on goods and services. By so doing prices of goods fall, leading to an increase in effective demand. When effective demand increases producers are encouraged to increase production, hence the economy is stimulated.

3. Exchange Rate Policy

The government can devalue its currency in order to encourage exports and discourage imports. This will boost domestic production; hence generate more employment, income, effective demand and economic recovery.

4. Trade Policy

The government can promote internal and external trade by reducing and relaxing trade restrictions, such as tariffs and export license in order to increase the volume of exports. When exports increase domestic producers are motivated to increase production, which leads to increase in employment, incomes and effective demand.

5. *Price and Wage Control:* The government can protect producers against the fall in prices and profit levels by fixing a minimum price (price floor) in order to encourage them to continue with production. Also it can raise level of wages in order to increase the purchasing power of the people.

TOPIC NINE

POPULATION

POPULATION AND ECONOMIC DEVELOPMENT

POPULATION

Meaning of Population

Population refers to a group of people living in a given place at a specific period of time.

Population size

Population size refers to the total number of people in a given geographical area.

Population density

This is the total number of people per square kilometre. Population density is said to be high if many people are residing in a small unit area. For example Manzese and Kariakoo areas in Dar es salaam Tanzania, have high population density. When a small number of people are living in a large area population density is said to be low. An example of low population density is the rural areas in Tanzania.

$$\text{Population density} = \frac{\text{Total number of people}}{\text{Total area of the place}}$$

Factors Affecting Population Density and Distribution

Population density is affected by the following factors:

(i) Social and Economic Infrastructure

Population density is high in areas where there is availability of social services like hospitals, education and economic services like roads, electricity, piped water, and telecommunication while in areas where there are poor social services and economic infrastructures, population density is very low. For example, most of the urban areas like Dar es salaam in Tanzania have high population density. Most of the rural areas in the country have low population density due to lack of social and economic services.

(ii) Climate

Population density is high in areas where climate is favorable for the cultivation of different crops. Examples of such areas in Tanzania are Kilimanjaro, Mbeya and in Victoria basin. In areas where the climate is unfavorable for the cultivation of different crops the population density is low. For example, in the central parts of Tanzania.

(iii) Soil Fertility

Fertile soil attracts human settlements for agricultural activities while infertile soil discourages human settlements due to its inability to produce enough harvest. Hence, areas with fertile land have a high population density while in areas where soil is infertile population density is low.

(iv) Natural Resources

Areas where there are natural resources such as minerals, water and forests, the population density is high while in areas where there is absence of natural resources the population density is very low.

(v) Commercial and Administration Activities

Commercial activities like trade tend to attract human settlements in a certain area. Likewise, people prefer to settle in areas where there is government administration for security reasons and in order to get easily services that may be offered by the government.

(vi) Employment Opportunities

In areas where employment opportunities are easily available due to presence of many economic activities such as manufacturing, the population density is high while in areas with limited economic activities and employment opportunities the population density is very low.

(vii) Political Factors

Many people prefer settling in areas where there is political stability and peace than in areas where there is political instability.

Effects of High Population Density

High population density is caused by the following factors:

(i) Poor Living Standards.

High population density leads to problems such as unemployment, congestion in social services, shortage of houses, and eruption of epidemic diseases etc. Hence poor living standard among the people.

(ii) Environment Degradation

High population density increases the demand for natural resources such as trees for fuel and construction of houses and land for grazing of cattle and growing of crops. An excessive demand for these resources often leads to environment degradation such as soil erosion. Likewise high population density leads to congestion which results into environment degradation.

(iii) Increase in Economic Activities

High population density stimulates economic activities like agriculture, trade and industry due to the availability of large markets and manpower.

(iv) Scarcity of Natural Resources

High population density causes excessive use of natural resources such as land hence scarcity of such resources and decline of agricultural output per capita.

(v) High Dependency Ratio

High population density causes over supply of labour, hence unemployment and growth in the number of dependants. The large number of dependents discourages savings and investments therefore a low growth of national income.

(vi) Low Income per Capita

High population density increases the size of labour force. If the amount of land is limited, the labour/land will eventually rise producing diminishing returns to labour i.e. the marginal product and the average product will fall and thus the income per capita will fall leading to a fall in living standards.

(vii) Increase social inequalities

Due to high population density the ratio of labour /land increases, leading to scarcity of land, hence a rise in rent. If land is not communally owned the increase in rent will enrich only few individuals ie landlords. This leads to an increase in social inequalities.

Population Structure

This refers to the actual characteristics or components of a given population.

Components of Population Structure

The following are the main components of population structure:

1. *Age structure:* This indicates the distribution of population according to the age groups. It shows the number of children, adults and old people in a given population. Age structure is used to determine dependency ratio.

   Dependency Ratio:

   This is the ratio between dependants and the working population.

   Dependants:

   This is a group of people who do not have the ability to work, it is a group of people of the age of zero and fourteen.(0-14) and those of the age of sixty five years and above.

   Dependents = People of age group (0-14) + People of age group above 64.

Working Population (Active Population):

This is a group of people who are willing and able to offer labour force. This group ranges from the age of 15 to 64 years.

$$\text{Dependency ratio} = \frac{\text{people of age group of } (0-14) \text{ and of age group of above } 64}{\text{people of age group of } (14-64)}$$

For example. Given the following data of population for country X on 8th June 2003 at 10.00 a.m

Table 9.1 Population data

Age Group (Years)	Number of people
0-14	18,000,000
15-64	5,000,000
Above 64	2,000,000

By using data in table 1:1, dependency ratio can be expressed as follows:

$$\text{Dependency ratio} = \frac{\text{People of age group of } (0-14) \text{ and above } 64}{\text{People of age group of } (15-65)}$$

$$\text{Dependency ratio} = \frac{18{,}000{,}000 + 2{,}000{,}000}{5{,}000{,}000} = \frac{20{,}000{,}000}{5{,}000{,}000} = 4 = 1:4$$

Economic Interpretation:

The answer above shows that, for every one person there are four dependents OR for every 100% working population there are 400% dependents.

Effects of High Dependency Ratio

(i) *Decline in Saving and Investments:* When the number of dependants is high, income earners are not able to save enough money since they spend a larger part of their income to meet the increased demand for consumer goods by their families. The decline in savings affects the level of investments, because when savings by the individuals decline, it reduces the lending ability of financial institutions to immediate borrowers (investors) hence a decline in investments. The decline in investments causes a fall in the national income.

(ii) *Increase in the Burden to the Government and Income Earners:* A high dependency ratio means that the working population has a big burden of assisting the large number of dependents. The government likewise use large resources in terms of pension funds and social services to assist the dependents.

(iii) *Emergence of Social Problems:* A high dependency ratio may result into social problems such as street children, beggars, drug abuse, malnutrition, poor health and decline in the standard of education.

2. *Sex Structure:* This shows the ratio of males and females in a given population. Sex structure can be used to show the division of labour according to sex in a certain area and the growth rate between the two sexes.
3. *Occupational Structure:* This is the distribution of people in different occupations. This can help to determine the number of employed people in different occupations, and therefore shows the number of people who are employed and those who are unemployed in a given area within the country.
4. *Income Structure:* This shows the levels of income of different people in a given population. This can be used to determine the purchasing power of the people in a given area.
5. *Education Structure:* This shows the number of people who are educated and those who are not educated. Therefore education structure can be used to show the level of literacy and illiteracy in a given society.
6. *Health Structure:* This shows the health status of the people in a given population. Poor health implies poor medical services in a society while good health of the people is an indicator of good medical services.
7. *Birth Rate Structure*: This is the number of live births per thousand in the population of a given area.
   Birth rate is expressed as crude birth rate(C.B.R)

$$\text{Crude birth rate} = \frac{\text{Number of new live births}}{\text{Total population}} / 1000$$

For example. If the total population in country X in a given year is 50 million and there were one million new births, the crude birth rate will be

$$\text{Crude birthrate} = \frac{1{,}000{,}000}{50{,}000{,}000} / 1000$$

Crude birth rate =20 per 1000 = 20/1000

The answer can be expressed in terms of percentage by multiplying by 100

$$\text{Crude birth rate} = \frac{20}{1000} \times 100 = 2\%$$

Interpretation:
The answer, above, shows that the birth rate is 2% per annum, i.e. in every group of 1000 women, 20 women or 2% give live birth per annum.

8. Death Rate Structure
This is the number of deaths per thousand in the population in a given area. It is expressed as a crude death rate.

$$\text{Crude death rate} = \frac{\text{numberof death}}{\text{numberof population}} / 1000$$

For Example;
If in a given year, five hundred thousand (500,000)deaths occurred in a given country when the total population of the country was fifty millions.

$$\text{Crude death rate} = \frac{5000000}{50000000} / 1000$$

Crude death rate = 10 people per thousands.
This can also be multiplied by 100 to get the answer in percentage

$$\text{Crude death rate} = \frac{10}{1000} \times 100 = 1\%$$

Interpretation:
This answer shows that in every group of 1000 people there are 10 deaths or 1% deaths
Death rate and birth rate can be high or low depending upon a number of factors:

1. *Climate:* If the climatic conditions are good they support the economic activities such as agriculture and improve nutrition of a place. This leads to reduction of malnutrition and consequently low death rate but high birth rate.
2. *Level of Medical Care:* When people get appropriate medical care such as vaccinations, doctor's advises and drugs, the rate of deaths falls but when they do not get appropriate medical care the rate of deaths rises.
3. *Level of Income:* When people's income is high, they will be able to get the required diet and buy the required medical services. This will reduce the death rate.
4. *Psychological Factors:* In some communities birth rate is high because having larger number of children increases reputation of individuals or of a family in that community. Therefore people prefer larger size of families so as to raise their status in the community.
5. *Family Planning:* When families practice family planning by using methods such as contraceptives, sterilization, abortion and government incentives the number of children per family decline. When people do not apply any family planning methods the rate of births increases.
6. *Level of Illiteracy and Literacy:* When people are educated they easily adapt to family planning education hence reduce the number of birth rate. When they are not educated they become ignorant of some of the family planning methods hence increase in the birth rate.
7. *Marriage Age:* The age of marriage also determine the birth rate. When people marry at a very young age they are likely to have more children than when they marry at very old age since the fertility of young people is higher than that of old people.

8. *Food Supply:* When people are supplied with enough food both in quantity and quality their healths improve and the death rate falls. When the supply of food is inadequate the health of the people deteriorates leading to high death rates.
9. *Infant Mortality Rate:* When the infant mortality rate is low, there will be less need to have so many children. Therefore the birth rate will fall. When the infant mortality rate is high, parents will tend to produce many children in the hope that some will live.
10. *Increase desire for material possession:* When the people's desire for material things such as cars, holidays, bigger homes etc increase, there will be less desire for large families. As a result birth rate will decline.
11. *Sanitation and Water Supply:* Improvement in sanitation and water supply will reduce epidemic diseases hence result to lower death rates. But in situation where there is no piped clean water and lack of sewage systems there will be eruption of epidemic diseases such as cholera hence high death rates.
12. *Religious Beliefs:*Some religious beliefs such as Christians, Hindus and Muslims lead to high birth rates by discouraging family planning methods.
13. *Demand for Labour Force:* In some societies, children provide a potential source of a family's labour force to work on the land or in small scale factories. This encourages families to increase birth rates in order to increase the size of the family labour force.

Effects of High Birth Rate

Assuming that the death rate is constant, the high birth rate can cause the following effects.

1. *Increase in Dependency Ratio:* A high birth rate has effect on dependency ratio, since a high birth rate produces a high ratio of children who are net consumers in the first 14 years of age, they therefore depend on adults to meet their wants.
2. *Low Level of Investment both by the Individuals and Government:* A high birth rate produces large number of children who are net consumers, therefore a lot of resources are used by the parents and the government on its expenditure such as food, toys, Medicare, schools etc, instead of being used for investments.
3. *Increase of Unemployment and Social Problems:* High population growth rate results to scarcity of resources such as capital and land. This leads to unemployment of people who depend on these resources to get employment. Unemployment leads to emergence of social problems such as prostitution, begging, robberies etc furthermore high birth rate leads to malnutrition and political instability.
4. *Fall in per capita income:* A high population birth rate will mean much higher rate of growth of national income than otherwise will be needed to raise income per head and the living standard. If the supply of other factors like land and capital is limited then the population will fail to make a very effective contribution to output ,leading to fall in per capita income.
5. *Effect on the Age Structure:* A high population growth rate will affect the age structure of the population, since a high population growth means that there will be a relatively high proportion of children to adults in the population. This arises because a higher population growth rate occurs (excluding the effects of migration) when the birth rate greatly exceeds the death rate. Thus, the number joining the

population as babies exceed the numbers leaving the population through deaths. Hence, high number of children than adults.

6. *High Population Density:*
   Since the supply of land and some fixed capitals are constant, an increase in population growth rate results into a high population density.

Life Expectancy

This is the average age of living of the people in a given country. For example, in 1997 life expectancy in Tanzania was 52 years. In recent years the life expectancy has been decreasing due to HIV/AID pandemic.

Effects of Short Life Expectancy

Short life expectancy has the following effects:

1. *Wastage of Young and Energetic Labour Force*
   When people die at a young age, it leads to a loss of a country's labour force. Since young people form the main component of a labour force of a country this leads to fall in output.
2. *Increase in Dependency Ratio*
   Short life expectancy leads to an increase in the dependency ratio because when people die early they leave behind the people who do not work such as children. An increase in dependency ratio affects investment and national income because a lot of resources will be used to help dependents instead of being invested. This is by the individuals and the government.
3. *Emergence of Social Problems*
   People who have lost their parents and guardians will start engaging in social evils as means of surviving. Examples of such evils are prostitution, begging, drug abuse and banditry.
4. *It affects growth rate of population*
   A short life expectancy reduces the growth rate of the population, since the young population is the most active reproductive group in the population. Therefore if they die at a young age, the reproductive group in the society is affected.

Natural Population Growth Rate

This is an increase in the number of people in a given locality in a given period of time.

Or

This is the difference between Crude death rate and Crude birth rate. Natural population growth = Crude birth rate- Crude death rate

For Example;

If the crude birth rate is 20/1000 and crude death rate is 10/1000, therefore the natural increase in population is $\frac{20}{1000} - \frac{10}{1000} = \frac{10}{1000}$. This can be expressed in terms of percentage by multiplying by 100, $\frac{10}{100} \times 100 = 1\%$, therefore, the population is growing at the rate of 1% per annum.

Importance of Population Growth Rate

Population growth rate is very useful in measuring the real growth of the national output. If the growth rate of population is higher than the nominal growth rate of the national output then it means the national output has not grown in real terms. Therefore the standards of living of the people will still be low.

Real growth rate of national income =Nominal growth rate of national income less population growth rate.

Table 9.2 Example of real growth of GNP of country X in given years.

Year	Growth rate of nominal GNP in %	Growth rate of population in %	Real growth rate of GNP in %
2001	5%	2%	3%
2002	7%	9%	-2%
2003	8%	8%	0%

Zero population growth

This is a situation where Crude birth rate is equal to the Crude death rate. For example, if the crude birth rate is 2% and the death rate is the same 2% then the growth rate of the population is zero.

Declining population

This is the situation where Crude death rate is greater than Crude birth rate.

Effects of Declining Population

Declining population has the following effects:

1. *Fall in Investments*
   When the size of population falls it discourages investment because of small size of the markets and low labour force.
2. *Low Labour Supply*
   The supply of labour force in a country depends on the size of the population. Other factors being equal the larger the size of population the larger the supply of labour and the smaller the size of population, the lower the supply of labour.
3. *Markets for Goods and Services will Fall*
   The size of the market depends on the size of population in a given area. If the size of population is small the size of the market will be low and if the size of the market is large the size of the market will increase.
4. *Fall in Government Burden*
   When the size of population is falls, the government burden on some of the social services such as Medicare and education go down since under declining population the government will not be required to build more- schools buildings or establish new hospitals.
5. *Unemployment will Fall*
   If the size of population is falling the labour supply also falls leading to a rise in wages and reduction in voluntary unemployment. Also the ratio of labour and other resources like land and capital will fall. This will also reduce unemployment.

6. *Under Utilization of Resources*
   A declining population will not be able to produce enough labour force to optimize the other factors of production such as land and capital. This will result into a low national income.
7. *Congestion in Public Goods will Decrease*
   There will be less congestion in public services such as hospitals, schools and public transport.

Ageing Population

This is a situation whereby there are more old people in the population than adults and children. It can be caused by declining death rate and birth rate respectively.

Effects of Aging Population

Ageing population has the following effects:

1. *Labour Force will Decline*
   When the population is aging the supply of labor will fall since labour is usually supplied by the young and adults members of the population.
2. *It Increases Burden to the Government and the Society*
   As people grow older their demand for social services such as health care also increase. The government is supposed to provide social services such as health to the old people. The society bears the burden of taking care of the old people by providing them with basic needs such as food.
3. *Aging Population Affect Fertility Rate of the Population*
   Old people are less fertile so when you have a situation of aging population the fertility rate will decline.
4. *Decline in the efficiency of work*
   Since old people lack the necessary mental and physical energy to perform various duties.
5. *Demand for most of the goods preferred by young people will fall*
   As a result of aging population the demand for goods which are preferred by young people will fall.
6. *Limited mobility of labour*
   Since most of old people do not prefer to move away from their homes due to their old age ageing population will therefore affect mobility of labour and cause frictional unemployment.
7. *Limited changes in a society*
   Most old people are conservative by nature i.e. they are not ready to make, accept and adapt to various changes that take place in the society therefore in some cases old people can be an obstacle to socio-economic development of the society.

Change in Population

This is an increase or a decrease in the number of people in a certain area or country.

Factors for Change in Population (Population Dynamics)

Population change is caused by the following factors:

1. *Birth Rate*
   When birth rate increases population also increases. On the other hand, when birth rate decreases population will decrease.

2. *Death Rate*
   When death rate increases population decrease and when death rate decreases population will increase. Death rate increases due to poor health care. Death rate decreases due to improvement of health care.
3. *Immigration*
   This is a situation whereby people from other countries enter in the country. When immigration increases population of a country will increase. On the other hand, if immigration decreases population of a country will decrease.
4. *Emigration*
   This is the situation whereby people in a certain country move to other countries. If emigration increases population will decrease and emigration decreases population will increase.

Note:
Immigration and emigration are caused by factors such as
- Hardships due to wars and natural calamities.
- Economic imbalances among the nations.

Population Census
Population census is a complete process of collecting, compiling and
publishing demographic data and other socio -economic data about all the people in a country at a particular date and time.
Or
Population census is a process of collecting, compiling and publishing data of population structure at a particular period of time and area. In Tanzania population census normally is carried after every10 years.

Conditions for Population Census to be Successful and Carried Effectively
For population census to be successful it must have the under mentioned features:
1. *It should be universal*
   It means all the people should be and counted, everything in the population structure should be taken into account. For example, sex structure, age structure, education structure, etc.
2. *It should get enough funds*
   For population censuses to be successful there must be enough funds to cover cost such as Transport costs, stationery costs etc.
3. *Publication of information*
   For census to be successful the information collected must be completed, published and reported to relevant authority for intended objectives.
4. *There should be cooperation from members of the public*
   In order for the census to be successful members of the society should be willing to provide adequate information concerning things like age, sex, education, incomes, occupations etc.
5. *There should be reliable infrastructure*
   Reliable infrastructures such as Communication and transport make it easy to access to various areas where people reside.

Characteristics of Population Censuses

Censuses have the following characteristics:

1. *Universality* W*ithin a Specific Area or Country*
   Censuses are usually universal i.e. they cover the whole area of a country or a territory and all the people of a country.
2. *Periodicity*
   Censuses are usually carried in specific interval of time. For example. It is carried out after 10 years in Tanzania.
3. *Specificity*
   Censuses are usually intended for specific objectives such as economic planning and elections.
4. *Non-optional*
   ensuses are non-optional to the people in a concerned area or territory that is every resident in the covered area is legally bound to be counted without any reservations.

Usefulness of Population Census

Population census has the following usefulness:

1. *Planning purpose*
   Population census is very important in planning the allocation and provision of various basic social services like education and health. and also how to provide and distribute basic requirements during calamities such as drought and food.
2. *Population distribution*
   Population census can be used to determine the geographical spread of population overtime, i.e. by using population census one can know whether population is over populated, under populated or optimally populated.
3. *Future Projections*
   Population census can be used to make future projections such as retirement and pension requirements, enrolment in schools and colleges, future population trends etc.
4. *To know Growth Rate of Population*
   Population census data is helpful in knowing the death rate and the birth rate hence the growth rate of population.
5. *Occupation and the Income of the People*
   Population census can be used to know the occupation and incomes of the people consequently their living standards.

Hindrances of carrying population censuses

Population census is constrained by the following problems:

1. *High cost of operation*
   Censuses need a high cost of operation such as transport, printing, training and paying of manpower.
2. *Inaccurate data*
   Censuses might fail to get accurate data when people provide false information, hide some information or cannot provide required data due to illiteracy.

3. *Lack of reliable infrastructures*
   There are poor means of transport and communication in some areas hence inaccessible to the censuses personnel therefore difficulty in collecting data.
4. *Political and social instabilities*
   In areas where there are political conflicts and social instabilities it is very difficult to carry Population Censuses since during this period most of the people are on the run and therefore very difficult to count them.
5. *Lack of trained personnel in population censuses*
   In some cases population censuses is affected by lack of enough skilled people who can do the job efficiently. This problem results into poor processing of data, delays in carrying the exercise, producing incorrect information and failure to meet the objectives of the censuses.

Population Trend in Tanzania

Population of Tanzania tripled from 7.7 million in 1948 to 23.1million in1988. According to the census of 1978 population was estimated at 17, 512, 610, by 1984 the population was estimated at about 21, 710, 000, between 1967 - 1978 the population increased by 5.2 million people. This was a 42.2% increase within 11 years and this represented annual growth rate of 3.2%. Between 1978 – 1988, the annual population growth rate was 2.8.On the basis of this growth rate the population of Tanzania was projected to be about 33 million by the year 2000.

This can be summarized in form of a chart below.

Table 9.3 Population trend in Tanzania

Year	**Population size**
1948	7.7 million
1978	17.5million
1984	21.7million
1988	23.1million
2000	33million
2002	35million

From table 8.3 above, it can be concluded that Tanzania has a rapid population growth. This has the following impact

- Land fragmentation due to population pressure like in Kilimanjaro region where the land has been fragmented due to high population density, such fragmented land cannot allow mechanization or large scale farming.
- Over utilization of resources, like over fishing which has led to scarcity of fish, deforestation due to cutting of vegetation, exhaustion of minerals due to excessive mining and loss of wild animals. Deforestation has led to erosion in some areas, land problems have been accelerated by need for more food, housing requirement and recreational amenities.
- Food shortage due to the fact that population growth is such much rapid that it does not keep pace with the level of capital investment in agriculture which is characterized by low level of technology.
- Following the food shortage Tanzania has been forced to incur some costs on importing of food such as maize, wheat and rice.

- Rapid population growth has increased the dependency ratio in the country. As a result more efforts are concentrated on meeting some immediate needs of the young population rather than investing in fundamental economic sectors.
- Rapid population growth has led to stress on facilities like housing, water supply, electricity, health care and communication services.
- Scarcity of land in different places especially in rural areas has forced people to migrate to towns or other places. Coupled with migration aspect some of the people have been pushed to marginal lands where production has been low.
- Lastly, rapid population growth has led to unemployment.

Tanzania's Government Response

As a result of unemployment and mushrooming number of loiterers, Tanzania put in place the human resource development programme (Nguvu Kazi) in1983 and the control of government expenditure (Kubana matumizi)
programmes in (Early 1980's) in order to avoid the over use of resources and services.

- Establishment of some resettlement schemes in Arusha Chini and some parts of Tanga and Morogoro. This was undertaken for the sake of reducing the number of people in the areas such as Kilimanjaro which have high population density.

Does Tanzania have some population pressure?

What is Population Pressure?

It is a situation in which the population is greater that the carrying capacity of the land and its resources. In this case the resources are fewer than the number of people and hence cannot satisfy the needs of the people in that particular place. Population Pressure is related to overpopulation.

At a national level Tanzania seems to have no population pressure. This is the case when one relates the available area of land to the population of the country at large. Nonetheless population pressure can be said to exist only at local levels such as family or regional level. For example the Chaggaland has got a population pressure unlike other parts of central Tanzania, which are still under populated. Rufiji basin is also under populated and can still support more population. Therefore population pressure in Tanzania is not all that much a problem since it can be solved. The success can be achieved once Tanzania embarks on strategic development of agriculture by tapping the potential land, which is lying idle like the Rufiji basin. There should be a great focus on investing in the rural areas by opening up the virgin land and establishing irrigation schemes so as to encourage people to settle in rural areas rather than flooding the urban areas.

Factors for Population Pressure in Different Places

Population pressure can be brought about by the following factors:

1. *Fertility of soil*
   In areas where soil is fertile people are more attracted to settle in order to carry out agricultural activities. Examples of areas with population pressure due to fertile soil are areas around Kilimanjaro Mountain.
2. *Availability of minerals and other natural resources*
   In areas with plenty of natural resources such as mineral deposits and water sources. Population pressure is so high because minerals and other resources

provide income and are used in increasing production. Therefore, they provide means of living to the people.

3. *Climatic Conditions*
   In areas with favourable climatic conditions for carrying out economic activities such as agriculture the pressure for human settlement is so high unlike in areas with unfavourable weather conditions which discourage agricultural activities.
4. *High Growth Rate*
   Population pressure can some times be caused by high fertility or birth rates and increase in net migration.
5. *Cultural Aspects*
   Some cultural aspects such as land inheritance and tenure might lead to population pressure. Some tribes groups continue staying in areas that belonged to their forefathers and are reluctant to shift to other places.
6. *Scarcity of Arable Land*
   This can make people concentrate on the available small piece of fertile land to carry out their agricultural activities.
7. *Poor Policy on Population Control*
   The policy has to facilitate the control of population growth and distribution as well as land ownership. But where the policy is poor there occur population pressure problems.

Impact of Population Pressure

Population pressure can lead to the following impact:

- It leads to inadequacy in social services like medicine and education opportunities as well as water supplies.
- It leads to unemployment due to the excessive number of people who are more than the available economic sectors.
- It can cause deforestation since people clear vegetation for establishing settlement or cultivation.
- It can lead to mineral exhaustion as a result of over exploitation where mineral deposits are small.
- Population can also cause land degradation especially soil erosion after clearing vegetation.
- Can lead to an outbreak of diseases due to prostitution and environmental pollution like water and air pollution.
- It can restrict or hamper the development of industries by posing the location problems. When there are so many people it becomes problematic to locate heavy industries in a particular area.
- Population pressure leads to the problems of poor housing to the extent that many people can share one room. This can in turn facilitate the spread of contagious diseases.
- Unemployment caused by population pressure can lead to the prevalence of crime and increase in prostitution.
- Decline of resources leads to the occurrence of poverty in a particular place or country.
- Cultural deterioration also can take place in the areas with population pressure.

What should be done?
In order to control population pressure the following measures can be taken:

- There should be family planning programmes focusing on birth control.
- The government should establish resettlement schemes which can lead to the shifting of people from the overpopulated areas to the under-populated areas like Rufiji basin and central parts of Tanzania.
- Establishing irrigation schemes, which can attract people from the over-populated areas to under populated areas
- Establishing land tenure system so that people can concentrate on their own pieces of land rather than migrating from one place to another and lead to the occurrence of population pressure in the destination areas.
- Providing profound and viable education to the people so as to resign them from cultural aspects which force them to continue reproducing, and remaining in the same place inherited from the forefathers.
- Establishing other economic activities rather than depending on agriculture. People should engage themselves in other activities like trade and fishing.

When is it economical for a country to control its population?
It is economical for a country to control its population under the following conditions

- When there is overpopulation
- When there is a high population density.
- When the growth rate of nominal national income is lower than the growth rate of population.
- When the country is experiencing inflationary pressure due to excessive number of people.
- When the country is under populated.
- When the population has reached an optimum size therefore a need to retain the level.

Spatial Population Distribution

This refers to the relationship between the number of people, the space and available natural resources. Spatial population distribution can be described as

1. Over population
2. Under population
3. Optimum population

1. Over Population

This is a situation when the population of a country or area is greater than the available natural resources and stock of capital. For example, when there is smaller amount of arable land as compared to the number of farmers who are able and willing to cultivate the land. It is a situation when population of a country is too large to make the most efficient use of its supplies of the other factors of production; A country is therefore overpopulated only when its population exceeds the optimum.

☞**Note:** Over population should not be confused with high population density since a country can have a high population density but the population is able to make best use of the available resources therefore become optimum.

Indicators of Overpopulation

Overpopulation has the following indicators.

(i) *Shortage of houses:* In an overpopulated area there are shortages of houses for residential use. The available houses do not match with the larger number of people.

(ii) *Insufficient social services:* There is insufficiency of necessary social services like medical and education, since the available social services do not match with the large size of population.

(iii) *Lack of employment opportunities:* There is unemployment due to the excessive number of people who are more than the available economic resources.

(iv) *Shortage of resources*: There is excessive demand for final goods and services which result into over utilization of resources used to produce the goods and services such as soil, forests, minerals and water and thus scarcity of these resources and a fall in output per capita.

(v) *Low standard of living:* There is low standard of living due to low output per capita which reduce the level of consumption of goods and services and therefore a too low standard of living.

(vi) *Shortage of food:* Overpopulation causes scarcity of agricultural land and a fall in output per capita of agricultural products hence a shortage of food.

(vii) *Low income per capita:* In an overpopulated area the labour/land ratio is very low. This leads to a fall in output due to diminishing returns and therefore to low income per capita.

(viii) *Congestion in various social and economic services:* In an overpopulated area the available public services do not match with the available supply of public services such as transport, schools, and hospitals this cause congestion in these services.

Causes of Overpopulation

Overpopulation may be caused by the following factors:

1. *High birth rate***:** High birth rate leads to increase in population which may exceed the available natural resources.
2. *Decrease in mortality rate:* A fall in death rate leads to a rise in population which may surpass the available population and therefore cause overpopulation.
3. *Shortage of capital:* If capital is in short supply the available population will fail to full utilize the available resources, so a lot of people will remain idle without employment.
4. *Immigration:*If there are many immigrants in a country it may cause an excessive use of natural resources and to a decline in quantity of these resources and therefore to overpopulation.
5. *Low technology:*Low technology leads to lower output per head and poor living conditions

Effects of overpopulation

Overpopulation has the following effects:

1. *Shortage and fall in quality of social services:* Due to the larger number of people than the available social services, overpopulation leads to the shortage of social services such as medical care and education and fall in the quality of these services.

2. *It may cause food shortage:* As population becomes larger than the capital and land resources and productivity of these resources remain constant, the food output from these resources will not be able to meet the food demand by the larger population, hence food shortage.
3. *It may cause environment degradation:* Overpopulation leads to excessive demand for output from natural resources such as food, water, wood, minerals etc this causes over exploitation and overuse of natural resources such as forests farmland, water resources, minerals etc, when these resources are used excessively it results to environmental degradation such as soil erosion due to cultivation even in steep slopes due as a result of land shortage. Other pollution are water pollution due to increased mining activities and air pollution due to emission of gases from increased industrial activities and from fumes of fire woods and charcoal.
4. *Emergence of social evils:* Overpopulation leads to lack of employment opportunities and force people to use illegal means of earning incomes such as prostitution, robbery or corruption in order to meet their wants.
5. *Unemployment of masses:* Due to overpopulation the amount of labour will exceed the available land and capital leading to unemployment of labour.
6. *Low level of investment:* Over population may cause a fall in investment because of a fall in savings. the reason for the fall in savings is the increase in dependency ratio and fall in real incomes due to increase in cost of living. Also investment falls because when there is overpopulation the government will be forced to use a lot of resources to provide social services instead of increasing investments.
7. *Low level of income per capita:* Overpopulation cause a fall in the ratio between labour and other inputs such as capital and land which cause a fall in average product of labour due to diminishing returns which occurs when amount of labour increase while other input are kept constant.
8. *It may cause political and social instability:* As a result of unemployment and declining living conditions overpopulation may be a cause of political and social instabilities in a society. Some members of the society may resort into violent political struggle to get power and resources while others may engage themselves in crimes such as banditry and prostitution so as to earn their living.
9. *Over exploitation of resources:* Overpopulation causes an excessive demand for final goods and services which call for extra supply of resources which are used to produce final goods and services such an increase in the demand for resources cause over exploitation of the resources.
10. *Inflation:* Over population causes excessive demand for goods and services which may cause a demand pull inflation.
11. *Increase in dependency ratio:* As a result of overpopulation unemployment may increase leading to increase in the number of dependants.
12. *Increase dependency on foreign aid:* Overpopulation causes excessive demand for goods and services while output per capita and national income falls. This forces a nation to depend on foreign aid to get essential requirements such as foods and medicine.
13. *Congestion:* Over population leads to congestion in public services such as transport and medical care due to excessive increase in the demand for such as services.

2. Under Population

This is the situation when population of any country is smaller in comparison to the available natural resources.

Or

This is the situation when the available labour force in a given population can not fully utilize available natural resources to produce maximum output per head. Thus a country will be under populated only if its population falls below the optimum. Its population then being too small to make the best use of the available resources.

☞**Note:** A small population does not necessarily make a country under populated since a country can have a small population which make best use of its resources.

Indicators/Features of under population

Under population have the following indicators:

1. *Shortage of labour force:* One of the indicators of under population is the low number of labour force which fails to full utilize the available resources.
2. *Under utilization of resources and idle resources:* When population is under populated the available labour force will not be able to full utilize the available resources.
3. *Low level of individual income and national income:* Under population leads to under utilization of resources such as labour and land. This leads to low level of individual and national income.
4. *Small market size and purchasing power:* In under populated areas the number of people is small hence a small size of the market.
5. *Defence problems due to small number of army men /women:* Under population cause a problem of manpower in various sectors including the army. This may lead to defence problem due to lack of the required number of soldiers.
6. *Innovations and enterprising is discouraged due to lack of competition:* There is lack of enterprising and competition due to small number of firms in the market which arise because of the small size of the market.
7. *Small number of tax payers hence lower government revenue:* In under populated country the government revenue is low because of the small size of national income and the small number of taxpayers.

Causes of Under Population

Population pressure can be brought about by the following factors:

1. *Low Birth Rate:* When the birth rate is low the growth of population will also be low. A low population will not be able to produce enough labour force that will utilize available resources .This will cause under population.
2. *High Death Rate:* High death rate can lead to fall in labour force and therefore less people to fully utilize available resources.
3. *Increase in Emigration:* Increase in the number of people who move outside the country will cause a decline in the population in an area and cause under population.
4. *Lack of Capital:*Capital is an important input which can be used to utilize other resources such as land. Therefore if it is in short supply the labour force will not be able to utilize the available resources. Hence, the population will become under populated.

5. *Unplanned Family Program:* If some family planning methods are not well programmed they can lead to a larger fall in population and therefore to under population

Effects of Under Population

Under population has the following effects:

1. *Increase in Social Cost per Head:* Due to under population, the amount of social capital required per head of population is increased so that it may not worth building roads, dams, bridges or even schools and hospitals or spend money on general administration for the small number of people in each area.
2. *High Transport Costs:* Under population may mean a thinly and sparsely distributed population which means relatively high transport costs which will make trade and exchange more difficult. This may result into subsistence production in agriculture.
3. *Low Level of Investment:*
   Under population discourages investments because of the shortage of labour force and small size of effective demand.
4. *Under Utilization of Resources:* Under population means that the available population cannot utilize the available resources fully.
5. *Individual and National Income will be Low:* Under population means that the available population is not able to fully utilize the available resources. This leads to low income per capita and national income.

Optimum Population

This is the number of labour force which when combined with other inputs, yields the maximum income per capita or welfare.

Or

This is the situation when the population of a country or area has a number of labour forces which can fully utilize available natural resources.

This is the most desirable level of population. However optimum population is a hypothetical concept i.e. it is very difficult to realize it due to:-

- Change in production processes due to change in production methods
- Change in population size overtime
- Resources diminish with time
- Very difficult to know the accurate size of population and the number of resources.

Indicators of Optimum Population

Optimum population has the following indicators:

1. *High level of investment:* When population is at optimum the available resources are optimally utilized meaning that the level of investment is also at maximum.
2. *Individual and national income is high:* Optimum population is able to fully utilize available resources leading to highest level of national and income per capita.
3. *Highest technology:* One of the indicators of optimum population is the availability of advanced technology which is used to maximize utilization of available resources such as land.

4. *High standard of living:* Optimum population means that the available population is able to produce maximum output which increases income per capita and the living standard.
5. *Full employment of resources:* When population is at optimum all the other resources such as land and capital are fully utilized.

Causes of Optimum Population

Optimum population is caused by the following factors:

1. *Capital Availability:* Availability of a large stock of capital enables a country to utilize well other resources such as land and thus increase out put.
2. *Technology:* Technology increases efficiency of production and its availability enables a certain population to optimally utilize its resources.
3. *Education and Training:* If education is provided adequately to the population it will be able to produce enough labour force that will be able to fully utilize the available resources and therefore produce maximum income per capita and raise standard of living.
4. *Population Control Measures:* In a situation of overpopulation, population control measures can be used to reduce the number of people so as to match with the available resources.

Under population, *optimum population* and *over population* can be summarized as follows.

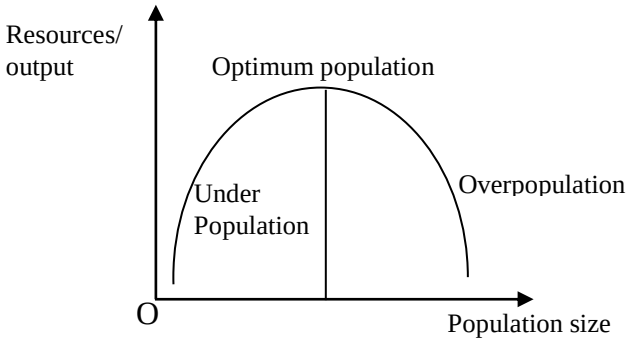


Figure: 9.1 Under population, optimum population and over population

Reasons for Increasing Population

Population increase is caused by the following reasons:-

1. Traditions that regards children as wealth, and that as many children as possible must be born so that even after the death of some, the remaining numbers canenough for family labour and expected assistance to the old parents in future.
2. Check on diseases and epidemics has reduced the infant mortality rate.
3. Encouragement of large families by religious groups e.g. those regarding family planning activities as anti-religious.
4. Early marriages and early child bearing.
5. Check on famine through relief aid.
6. Low levels of education. These works as barriers to the success of the government family planning programmes.

7. In LDCs, the practice of extended families is quite common. This encourages people to produce children that may be catered for by relatives.
8. Frequent migration from other countries could be for political or religious persecutions.
9. Frequent pregnancies among unmarried teenagers.
10. At times, population may increase because of the improvement family incomes.
11. Decline in adult death rates.
12. Improvement in hygienic measures e.g. better sanitation.

Effects of population increase to the economy

When population grows while it is under populated, it may lead to the following effects.

Positive effects

1. Increase in investments: Population growth stimulates more investments due to increase in demand for goods and services and increase in the availability of labour force
1. Increase in labour force: An increase in population causes a growth in the number of labour force in a country.
2. Increase in the size of the market: An increase in population increases the demand for goods. Hence an increase in the size of the market
3. Technology improvement: Population expansion may lead to emergence of people in society who are innovators of technology. Also it encourages producers to innovate better technologies that can produce enough goods to match with the increase in demand.
4. Increase in national income: Expansion in population stimulates demand and investments. When investments increase national income also expands
5. *Specialization and division of labour*: As people in a given society increases it becomes possible for individuals or groups of individuals to specialize in various economic activities such as agriculture, industries or trade. Also it becomes possible for regions in a country to specialize in different economic activities and each of the regions enjoying increase in output due to specialization.
6. *Full utilization of resources:* An increase in population can produce additional labour force that can increase the utilization of the available resources such as soil, forests, water, minerals, roads, machines, buildings etc.

Negative effects

If an increase in population causes overpopulation the following negative impact will occur.

1. *Unemployment*: When population increases it leads to increase in the number of labour force which cannot conform with natural resources available or employment opportunities hence unemployment problem.
2. *Emergence of social evils*: When population increases it result into unemployment problem which may cause an emergence of social evils and crime in the society as people try to find alternative ways of surviving. Examples of such evils are prostitution, begging and robbery
3. *Increase in dependency ratio*: Increase in population can also lead to increase in dependants ie people who are unable to work, due to the large number of recently

born children and old people also due to decline in number of resources and employment opportunities.

4. *Overcrowding or congestion*: Population increase can lead to excessive demand for public services such as transportation, schools and health if these services are in limited supply it will cause congestion.
5. *Diminishing output and fall in living standard*: When population increases while other factors such as capital and land are fixed in supplys it will result into diminishing returns, meaning that total product, marginal product and average product of labour will decline after sometime and thus a fall in the income per capita and in the standard of living.
6. *Excessive demand for commodities and rise in prices*: Population increase often is accompanied by excessive demand for goods and services and a rise in the level of prices.
7. *Economic instabilities*: Some economic instabilities may be as a result of population increase. For example, inflation is influenced by excessive demand of a larger population and balance of payment deficit is caused by increase in the demand for import due to increase in population.

Theory of Population

Malthusian Theory of Population (1766 - 1834)

This theory was advanced by the British clergyman Rev. Thomas Robert Malthus in his essay on principles of population of 1798.He was trying to explain the relationship between population increase and increase in food production under fixed supply of land.

His main arguments/postulations were as follows;

1. Population was increasing faster in comparison to the increase in production of food stuffs.
2. As food production increases population also increases.
3. Population, according to him, was increasing at geometric progression (multiplying). Example 2, 4, 8, 16, 32 …… n^{th} , where as food production was increasing at arithmetic progression. Example 2, 4, 6, 8, 10 …… n^{th}
4. Malthus, also claimed that, if artificial methods were not adopted to control population increases then population will be doubled within 25 years.
5. He predicted that if no artificial method were adopted to check population increase then it will be checked by natural calamities like wars, floods, diseases. Like cholera and earthquake.
6. Because of the mismatch between population growth and food production, population will exceed the rate of food production, and thus lead to the so called *Malthus Population Trap*.
7. To prevent population increase Malthus suggested that,
   - Families must have smaller number of children
   - Abstinence from early marriage
   - Practice celibacy (do not marry at all)

The Malthusian Population Trap

This is the term which explains the results of population growth at geometric progression while food production grows at arithmetic progression. According to

Malthus due to uneven growth between food production and population growth, the means of subsistence such as food diminishes, thus a fall in the standard of living and people are trapped in a situation where they cannot feed themselves and population size is finite.

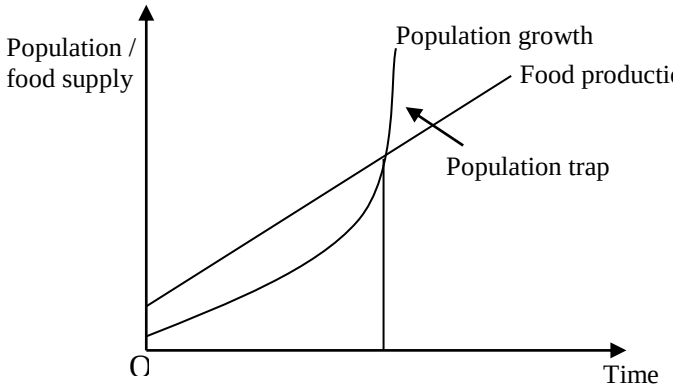


Figure: 9.2 Population trap

Criticisms against Malthus Theory.

Malthus theory has been widely criticized on the following grounds:

1. Malthus did not take into account possibilities of improving in farming methods that could lead into increase in food production and therefore match with increase in population.
2. Malthus ignored the role of international trade and food aid which can supplement local food deficiencies.
3. Malthus advanced this theory during the period of industrial revolution in Europe when there were mass unemployment due to the discovery of machines.
4. Malthus ignored the issue of distribution of resources or income. He made his study in Great Britain where distribution of resources or income was uneven but does not apply in the same way in socialist countries. This means there was starvation in Great Britain not only because of larger increase in population but also because of uneven Distribution of income and wealth.
5. Malthus made his study only in Great Britain and he concluded for the whole world but his study could have been made more realistic if he made his study for the whole world.
6. Malthus ignored the role of modern means of transports and communications which facilitate the movement of food from areas of abundance to the areas of shortage.
7. Malthus ignored the role of population as an important factor of production that is even if there is increase in population size still food production can be increased if the population provide a labour force that produce enough food to feed the large size of population.
8. In real situation population does not necessarily grow at geometric progression and at arithmetic progression some countries even experience negative growth rate of population in some years due to decrease in birth rates.
9. The well published instances of mass starvation in several countries of sub-saharan Africa such as Sudan and Somalia in recent years have been the result of drought

and civil wars rather than the result of the law of diminishing returns which underlies Malthusian theory.

10. Malthus argued that population would grow without growth in food supplies or rise in living standard above the subsistence level. The population of less developed countries however have grown without significant rises in food production or income per head.

Pertinence of Malthus Theory

Despite its weaknesses Malthus theory has some pertinence

1. In some countries especially third world countries the growth of population is higher than the production of food. As a result these countries experience shortage of food hence starvation.
2. It is true that improved nutrition and social services often result into an increase in population size as it was the case in Great Britain during the time of industrial revolution.
3. In third world countries international trade and food aid have failed to solve the problem of food shortage due to reasons such as lack of purchasing power among the people to buy imported food. Slow response of food donors whenever there are food crises, weak distribution networks in these countries, security problems and bad governance.
4. It is true that land is fixed in supply therefore if nothing is done to increase its productivity the larger growth of population would lead to decrease in food per capita
5. In countries with large population such as India and Bangladesh natural calamities such as floods have been the main checkers of population growth.

Methods of Controlling Population Explosion (Population Control Policies)

To control population explosion the following measures can be used:

1. Family planning. The use of contraceptives like pills and condoms.
2. Education, especially sex education. To educate people on family planning
3. Economic incentives to people who decide to have no children or to have a small number of children.
4. Reducing the number of females who get married before the age of 20 years. For instance increasing the number of female students in post-primary education in order to control early marriage.
5. Encourage international migration.
6. Legalizing abortion. This is the termination of unplanned/unwanted pregnancies.
7. Educate people to ignore culture which regard children as source of wealth.
8. Where polygamy is widely practiced people can be educated and advised to marry only one wife.

Population Policy

Population policy refers to statements, laws or regulations enacted so as to attain some demographic goals .It is a deliberate effort by the government to influence demographic factors (population dynamics) like fertility, mortality and migration.

Thus the ultimate goal of the population policy is to influence population size, composition, distribution and growth. The policy also tends to take into consideration

the relationship between population and development as well as its impact on the environmental condition.

Population policy can be explicit or implicit.

Explicit Population Policy

This refers to the document or clear statement issued by government department and its commissions which are intended to control population growth and raise the standard of living of the people in the country. Explicit policies can also stem from the laws, policy declarations by a party or directives issued by the president of a country.
Explicit laws are well stipulated and strictly followed or reinforced. Such policies prevailed in China where the limit in number of children was set and incentives were given to those who could follow and those who did not follow were given penalties.
Other countries with explicit policies are Sweden and England, hence the explicit policy is the elaborative statement which spells out its rationale, objectives goals, targets, policy programs and implementation.

Implicit Policy

This refers to particular laws, regulation or statements which may have direct or indirect effect on population growth. Implicit policy is not as elaborate as explicit since it is some how unclear and cannot be easily understood leading to failure in terms of implementation. All in all the population policy whether explicit or implicit has the ultimate aim of influencing a country's population size, composition, distribution and growth.

Case Study of Population Policy

Population Policy in Tanzania

Foreword

The revised version of the 1992 national population policy (NPP) has been necessitated by the need to accommodate new developments that have taken place nationally and internationally and which have direct bearing on population and development Domestically the economy moved significantly away from being centrally planned to a market economy with increasing dominance of the private sector which plays a more active role in population and development issues. Furthermore in April 1997 the government unveiled a new development vision.

The country's population growth rate of 2.8 per annum has had an adverse effect on development though not the obstacle to development; it aggravates the situation and renders remedial measures more difficult. Rapid population growth has tended to increase outlays on consumption, drawing resources away from savings for productive investments and therefore retarding growth in national output through slow capital formation.In particular, rapid population growth has aggravated the problems of poverty, environment degradation and poor social services. Furthermore the problems of sexually transmitted diseases including HIV/AIDS and those facing specific segments of the population like the children, youths, elderly and persons with disabilities have become widespread.

The policy has the goal of influencing other policies strategies and programs that ensure sustainable development of the people and promoting gender equality and empowerment of women .It will be implemented through a multi-sectoral and multi-

dimensional integrated approach .In this regard the government will collaborate with non-government organizations (NGOs), the private sector, communities with other agencies within and outside Tanzania in implementing the policy. Indeed, individuals political parties and other organized groups in the civil society are expected to play an active role to ensure attainment of policy goals and objectives. The principal objective of the country's development vision is to move Tanzanians away from poverty and uplift their standard of living .The policy therefore, gives guidelines for addressing population issues in an integrated manner .It thus recognizes the linkages between population dynamics and quality of life on one hand and environment protection and sustainable development on another hand .Its implementation will give a new dimension to development programs by ensuring that population issues are appropriately addressed.

It is my expectation that with full support and participation of the people, the implementation of this policy will be a success. Hon. late Nassoro Malocho (MP) Former Minister of state, President's Office (planning)

Preamble

Prior to the adoption of the explicit national population policy in 1992, Tanzania pursued implicit population policies and programs. These policies and programs were reflected in actions taken by the government in dealing with various issues pertaining to population These included policies and programs such as settlement schemes of early 1960s,villagisation program of mid 1970s,provison and expansion of free social services (health, education and safe water), literacy campaigns, provision of family planning services as part of Muhimbili college of health sciences (MUCHS) services, limiting employment related benefits (such as tax relief) to four children and paid maternity leave of 84days at most once in every three years and Census taking place after every ten years .As the economic crisis became severe during the 1980s the gains achieved earlier ,especially in social sectors could not be maintained.

It is part of this context that in 1986 the government started the process of formulating a national population policy. By 1988 a draft policy document was ready for discussion by various sectors of the population. This process was finalized in 1992 when the final version of the population policy was adopted and was followed by the program of implementation in 1995.

The thrust of the policy was to provide a framework and guidelines for the integration of the population variables in the development process. Moreover it provided policy guidelines, which determined priorities in population and development programs. These were designed to strengthen the preparation and implementation of socio- economic development planning.

To some extent, the1992 national population policy took on board goals and objectives of the past population programs. However new developments that have taken place nationally and internationally have necessitated its revision.

Principles

The principles which guide the implementation of the policy are as follows:

1. Consideration of regional and district variations with regard to the level of socio-economic development;

2. Adherence to the development vision, which among other things emphasizes role of the market in determining resource allocation and use.
3. Continued democratization of the political system with its attendant political pluralism as symbolized mass media.
4. Thrift exploitation of the country's non-renewable resources taking into consideration the needs of future generation.
5. Recognition and appreciation of the central role of the government, NGOs, private sector, communities and individuals in population and development.
6. The policy also reaffirms the ICPD principles as embodied in the plan of action to the effect that:
   (i) All human beings are born free and equal in dignity and rights. Thus, every human being has the right to life, liberty, security and responsibility;
   (ii) People are the most important and valuable resource of any nation and all individuals should therefore be given the opportunity to make the most of their potential. As such, all individuals have the right to education and health;
   (ii) The family is the basic unit of society and, as such, it should be strengthened. It is also entitled to receive comprehensive protection and support; and
   (iv) All couples and individuals have the basic right to decide freely and responsibly the number and spacing of their children as well as to have accessibility to information, education and means to do so.

Justification of the Population Policy

This policy takes cognizance of the achievements, constraints and limitation of implementing past population policies as well as developments and continuing challenges.

Achievements

The achievements of both implicit and explicit past population policies included the following:

(i) Considerable awareness of population issues particularly those related to reproductive health and child survival by the masses of the people. For example, fertility, infant and child mortality has declined overtime.
(ii) The adoption of an explicit population policy in 1992, which recognized the links and interrelationship between population, resources, the environment and development;
(iii) Expansion and/or introduction of population studies in institutions of higher learning in the country.
(iv) Increased number and capacity of NGOs engaged in population related activities including advocacy and social mobilization, service delivery and capacity building.
(v) High knowledge and the use of contraceptive methods among both men and women and male involvement of family planning which has increased contraceptive prevalence from about 10 in 1980s to 16 in 1996.

Constraints and Limitations

The constraints and limitation that were encountered during the implementation of the past population policies included the following:

(i) Inadequate human and financial resources.
(ii) Poor information communication systems.

(iii) Non-establishment of planned institutional arrangements.
(iv) Policies which mainly addressed family planning and child spacing activities coupled with reliance on the government for implementation.
(v) Placing more emphasis on meeting demographic targets rather than the needs of individuals, male and female.
(vi) Inadequate recognition of the causal relationship between poverty, population environment, gender and development.

New Developments and Continuing Challenges

Since the adoption of the population policy in 1992, there have been new developments arising from national and international developments. These include the Tanzania development vision 2025 and international conferences including the 1992 conference on environment and development, the 1994 International Conference on population and Development (ICPD), The 1995 fourth World Conference on women (FWCW), Copenhagen social summit of 1995, the Istanbul city summit of 1996 and the 1997 World food summit. These new developments have necessitated changes in approaches and policy orientation. So as to address:

(i) Population issues in a holistic manner in development plans as well as recognizing the roles of other partners-civil society, NGOs, and the private sector.
(ii) Poverty in its broad dimensions including inequalities in resource use and allocation between women and men and various social groups
(iii) Discriminatory and harmful socio-cultural practices against men and women.
(iv) Issues related to reproductive health and rights.
(v) Interrelationships between population and sustainable development.
(vi) Basic needs of the people.
(vii) Problems of crime, poverty, unemployment, poor infrastructure etc. associated with growing levels of urbanisation.

Other challenges, which have also necessitated review of the policy include:

(i) Increased forms and levels of female violence: sexual abuse, neglect and abandonment of children.
(ii) Need for more and high quality education and training at all levels;
(iii) High prevalence of STDs including HIV/AIDS;
(iv) High levels of adolescent pregnancies
(v) Increasing unemployment due to poor economic performance and labour force growth;
(vi) High maternal, infant and child mortality.
(vii) Rapid and unplanned urban growth.
(viii) Low status accorded to women in society.

Major Concerns in Population and Development

The major concerns of the population policy encompass the following:
Areas: population and development planning issues; equality, equity and social justice; natural resources and food production; information and databases; and advocacy. In this regard there is need:

(i) To allocate more resources for literacy, health and education services with a view to increasing their quality, accessibility and availability;

(ii) To fully sustainable exploit the natural resources in order to boost the economy and also to ensure sustainability of the resources and environment
(iii) To expand the agricultural production to meet the demanding food requirement;
(iv) To ensure availability of up to date and comprehensive data and information for rational and effective planning as well as for programme formulation and implementation.
(v) To adopt gender perspective in development planning and to formulate programmes that enhances full participation of special groups in society.

TOPIC TEN

UNEMPLOYMENT AND EMPLOYMENT

UNEMPLOYMENT OF LABOUR

It is a situation whereby people are willing and able to work but cannot find jobs or works.

Causes of Unemployment

Unemployment is brought about by the following factors:

1. *Technological changes:* When technology changes or when a new technology is introduced in the production process it causes unemployment of labour. For example introduction of computers in offices and the use of conveyor belts to lift cargo in factories, has replaced the use of labour force and cause unemployment.
2. *Fall in demand:* A fall in demand for the product produced by a certain industry will affect production of an industry producing the products. Consequently the industries will collapse and therefore caused unemployment to workers working in that particular industry. Also it may cause unemployment to people who work in an industry, which supplies raw materials, or other inputs to the affected industries. For example the fall in demand for sisal in world market in the late 1970's affected workers in sisal plantation and sisal industries in Tanzania.
3. *Climatic changes:* Bad weather can affect various economic activities such as mining, agriculture, construction out door trading activities. As a result, people who work in these sectors lose their jobs.
4. *Education and training:* This causes unemployment if people get kind of education which does not prepare them for self employment. As a result those who finish school and colleges become unemployed if they fail to get jobs. Also, education causes unemployment because educated people tend to choose only certain kinds of jobs. So they are sometimes said to be affected by voluntary unemployment. That is they are unemployed not because there are no jobs but because they do not want to do certain kinds of jobs.
5. *Lack of capital goods or investment:* Lack of capital goods or investment in an economy results into low production capacity, under utilization of many economic resources and few chances of employment.
6. *Rural urban migration:* Movement of people from rural areas to urban areas for the purpose of searching for jobs in urban areas causes unemployment in case these people do not find jobs in urban areas.
7. *Lack of supplementary activities in rural areas:* People in rural areas become unemployed when they have completed farming activities and when weather is unfavourable for farming activities.
8. *Monetary and fiscal reasons:* Monetary and fiscal policies can also cause unemployment. For example decline in money supply will cause decline in investment and cause unemployment because of the decrease in government expenditures in public works such as road construction, educations, health, security, research, electricity water etc will cause unemployment.

9. *Population pressure:* Population leads to unemployment. When the economy has reached a full employment level ie when there are no idle resources then an increase in population leads to unemployment.

Types of Unemployment or Forms of Unemployment

Unemployment can be grouped into the following types:

1. *Structural Unemployment:* This is a type of unemployment which occurs due to decline of an industry caused by decrease in demand for the product produced by the industry or change in the technology of producing the product that is when competitors emerge with a new technology which the industry cannot cope with.
2. *Frictional Unemployment:* Frictional unemployment results from friction in the labour market; which creates a delay or time lag during which a worker is unemployed when moving from one job to another. This is caused by the fact that labour is not perfectly mobile it means labour cannot move quickly from one employment to another employment. Either in geographical or in occupational sense. As a result labour can not shift quickly from a declining industry to the expanding industry. Frictional unemployment may be caused by the following reasons:
   (i) Old age which prevent unemployed workers from shifting from one occupation or place to another occupation or place.
   (ii) Kind of skills a person has can be an obstacle of moving from one industry to another industry. For example a trained doctor cannot easily fill the post/vacancy of a pilot in case he or she is unemployed.
   (iii) Social reasons such as religious, family problems, tradition and customs can also prevent one from moving from one industry to another industry.
3. *Casual Unemployment/Erratic:* This is a type of unemployment which occurs when workers are laid off in some economic activities which occur in short time basis or temporarily. Example of such activities are tourism, catering, construction, docking and some type of agriculture activities such as horticulture. These activities occur temporarily, workers who work in these activities become unemployed in some periods of time.
4. *Seasonal Unemployment:* This is a type of casual unemployment which is caused by regular fluctuation in weather conditions. For example, peasants become unemployed after the agricultural seasons have past.
5. *Disguised Unemployment (Hidden Unemployment):* This occurs when labour is under utilized It means a work given to a certain worker is insufficient not (enough) to make the worker fully employed. For example, if ten workers perform a work which could be done by only two workers, then these workers are said to be disguised unemployed.
6. *Technological Unemployment:* This can be regarded as a special case of structural unemployment which results from the improvement of the level of technology example when a labour serving technology is introduced in a factory then many people lose their jobs.
7. *Mass Unemployment/Cyclical Unemployment:* This occurs when there is a general decline in the whole economy. It means during period of economic depression. During this period almost all the workers lose their jobs.

8. *Classical/Real Wage Unemployment:* This occurs when there is excessive increase in real wages. As a result demand for labour decrease while supply of labour increase. Hence workers become unemployed. This happens when the level of wages is greater than what the market forces can offer. As a result demand for labour declines and unemployment occur. This can be explained by the help of the following diagram.

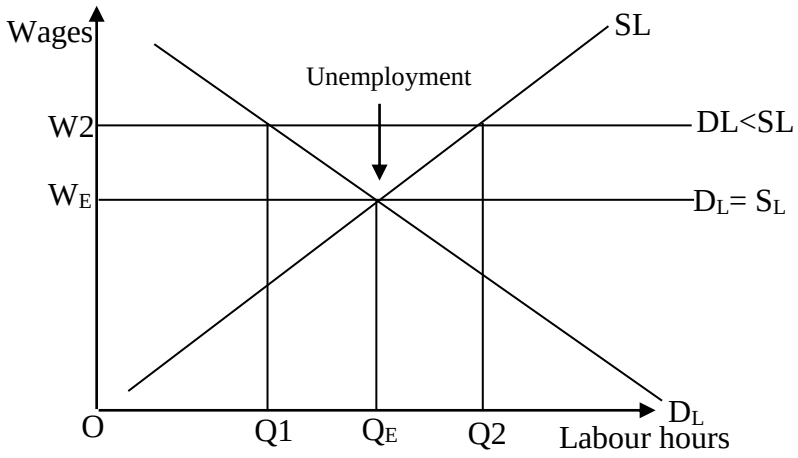


Figure: 10.1 Equilibrium wage rate/market wage rate

In figure 10.1:

- W_E is an equilibrium wage rate at which the Demand for labour equals supply of labour.
- DL and S_L are demand and supply of labour respectively.

Unemployment will occur if wage rate is increased to W_2, because when wages increase to W_2 supply of labour will increase from the equilibrium point to Q_2 while the demand for labour will decrease from the equilibrium point to Q_1. This means that supply of labour will be greater than demand for labour leading to surplus of labour hence unemployment.

9. *Residual unemployment:* This is catching all categories covering any other possible cause of unemployment. This may include the unemployable people e.g. people with physical disabilities and the work - shy.

Voluntary and Involuntary Unemployment

Types of unemployment can be grouped into either voluntary or involuntary unemployment. Voluntary unemployment means that a person is unemployed because she/he is not ready to do a certain work at the existing wage rate. For example, a trained doctor refusing to be a garbage collector.

Voluntary Unemployment

Causes of Voluntary Unemployment

Voluntary unemployment is caused by the following factors

- Low wage rate.
- The desire to live on personal income or family income.
- Poor working conditions.

- The desire for leisure.
- One's mere choice.
- The proposed job may be unpleasant.
- Desire to live on accumulated savings.
- Peoples mere laziness.

Involuntary Unemployment

This occurs when a certain labour is able and willing to work but cannot find a job. Involuntary unemployment is caused by several factors:-
such as:

- Residual unemployment.
- Casual works.
- Technological changes.
- Climatic changes.
- Lack of skills.

Keynesian Unemployment.

This type of unemployment was named after the Lord Keynes as a type of unemployment which is caused by lack of sufficient demand. i.e. when demand falls short of supply. Labour becomes unemployed because the demand for the products produced by labour has fallen, since the demand for labour is a derived demand. When the demand for the products produced by labour falls it causes a fall in the demand for labour.

Solutions to Keynesians Unemployment.

According to Keynes, unemployment problem can be solved by applying the following measures.

Use of Expansionary Fiscal Policy

In this policy, the government can increase government expenditures in areas such as construction of roads, education, medical care, defence, subsidies to producers such as farmers. By doing so the government is able to create employment opportunities and incomes to the people. The government can also reduce tax in order to encourage investments and therefore create employment opportunities.

1. *Use of Expansionary Monetary Policy*
   In this policy, the Central Bank can stimulate investment and thus create employment by increasing money supply through reduction of the rate of interests.
2. *Encourage Export*
   The government can apply various measures such as reduction of export tariffs and provision of incentives to exporters in order to boost the sector and thus create more employment opportunities in the sector.
3. *Increase in Investment Environment*
   The government can stimulate more investments in a country by taking some measures which create conducive environment for the growth of investments. Such measures are:
   - Establishment of good infrastructure
   - Security
   - Good governance

- Political stability
- Sound economic policies
- Investment protection laws

Applicability/Relevance of Keynesian Unemployment Theory

Keynesian unemployment theory has the following uses:

1. In less developed countries unemployment is from the supply side not from the demand side.
2. Increase in government expenditure may cause inflation due to lack of supply of commodities.
3. People in fewer developing countries keep their wealth in form of properties such as land and cows. These do not expand employment.
4. People in less developed countries have a tendency to hoard money due to ignorance and poor investment climate therefore increasing government expenditures may not lead to increase in demand.
5. This type of unemployment affects more industrialised countries while most of less developed countries are agro based.

Solutions of Unemployment

The following are the solutions for the unemployment problem:

1. *Application of Labour Intensive Technique of Production*
   Labour intensive technique can be applied to enable employment of large number of people.
2. *Establishment of Irrigation Schemes*
   In areas where rainfall is not adequate, irrigation scheme can be applied in order to solve the problem of seasonal unemployment.
3. *Diversification of the Economy*
   The country can diversify the economy by establishing many economic sectors like agriculture, industry, mining, trade, tourism etc in order to employ many people.
4. *Expansionary Monetary Policy*
   The government can apply expansionary monetary policy to solve the problem of unemployment. This can be done by reducing the rate of interest because when the rate of interest is low, investors are encouraged to borrow money from banks for investment. An increase in investments creates more employment opportunities.
5. *Expansionary Fiscal Policy*
   The government can use expansionary fiscal policy to reduce the level of
   Unemployment. There are two fiscal policy measures that can be used to solve the problem of unemployment.
   (i) *Increase in government expenditure:* The government can increase its expenditure in public works such as health, education, roads, water, road and railways construction. Such spending create employment and income to the people and also stimulate other economic activities such as agriculture and industry.
   (ii) *Reduction of Tax:* The government can reduce the amount of tax to encourage both production and consumption which lead to increase in employment.

6. *Establishment of Supplementary Activities in Rural Areas*
   In order to solve seasonal unemployment in rural areas the government can assist establishment of other economic activities such as small scale industry (hand crafts), mining, tourism, trade etc, such activities will help to occupy peasants during the dry season or when there is a severe drought.
7. *Provision of Education which Gives Job Skills to Learners*
   In order to assist school leavers to employ themselves after completion of their education the ministry responsible for education should prepare kind of curriculum which prepare learners to employ themselves after completion of their education.
8. *Export Promotion Measures*
   The growth of export sector can help to increase employment opportunities. Exports can be promoted by reducing export tariffs, providing export incentives, and eliminating transportation bottlenecks.

Costs and Benefits of Unemployment

Unemployment has both costs and benefits:

A: Cost of Unemployment (Negative Impact of Unemployment)

1. *Decline in the size of national income:* Unemployment causes a decline in the size of the national income. National income is reduced by the proportion that could be produced by the unemployed people if they were employed.
2. *Increase in the dependence ratio:* A large number of unemployed people increase the number of dependant people.
3. *Decline in saving capacity of income earners:* Savings by income earners decline due to large burden of helping unemployed people who are close relative.
4. *Emergence of classes:* Unemployment creates classes of people between those who are employed and those who are unemployed.
5. *Emergence of social evils:* Unemployment makes unemployed people liable for engage in social evils such as robbery, prostitution and theft in order to survive.
6. *Increase in government burden:* In countries where unemployed people are paid unemployment benefits the government bears the burden of paying them. This burden may be transferred to tax payers; an increase in tax will increase prices of goods and discourage consumption.

B. Benefits of Unemployment (Positive Benefits of Unemployment)

Unemployment has some positive benefits; these benefits normally go to firms.

1. *Increase in the supply of labour:* A large number of unemployed people may increase the supply of labour and therefore reduce the level of wages and the cost of production.
2. *Increase in work discipline:* Unemployment may increase the discipline of work to those who are employed; they become disciplined for fear of losing jobs due to existence of a large number of unemployed people who are searching for the same job.
3. *Firms can pick the best employees:* Large number of unemployed people enables firms to pick best worker from a large basket of unemployed people.
4. *A remedy for demand pull inflation:* Unemployment reduces disposable incomes of income earners and their purchasing power; a decline in the purchasing power may be a remedy for demand pull inflation.

5. *Development of informal sector:* Unemployment in formal employment encourages the development of informal sector and a self employment which can largely contribute to the growth of the national income.

Full Employment

By full employment it means the situation whereby all people who are willing and able to work are employed. However when there is full employment it does not mean that every single adult in a country has a work to do this is due to the following reasons

- There are always individuals who are physically incapable of doing normal works.
- There are full time home workers (house keepers)
- There are those lucky people with private incomes which is sufficient to enable them to live without any work.
- There are some adults who are in full time education, therefore they can not go to the labour market to look for employment
- There are those individuals who are affected by frictional unemployment, due to immobility of labour. i.e. inability of labour to move from a declining industry to an expanding industry due to factors such as age, illness, social ties and differences in skills.
- Due to the above reasons the concept of full employment is theoretical.

How to Achieve Full Employment

Unemployment can be achieved by applying the following measures:

1. Increase in government expenditure to stimulate demand and investments hence create more jobs.
2. Expansionary monetary policy through reduction of the rate of interest to encourage investments and thus create more jobs.
3. Appropriate manpower allocation to ensure that all the available labour force is absorbed in employment opportunities available.
4. Delocalization of industries to ensure employment opportunities in all areas of the country.
5. Provide skills to workers so that they can improve their productivity.
6. There must be organised mobility of labour, since in a progressive economy there will always be some industries which are expanding while others are declining. As a result some workers will be faced with frictional unemployment due to lack of mobility of labour. Therefore the government or trade unions will have to do some organisation to make easy mobility of labour from declining industries to expanding industries.

Problems of Full Employment

Experience has shown that the maintenance of full employment produces problems of its own:

1. The danger of Inflation is increased

There are two reasons for this:

(a) Over-Investment is Likely to Occur: It is impossible to calculate exactly how much public investment is required to yield full employment. In its anxiety to ensure full employment, a government may be inclined to undertake too much investment, and

so a condition of inflation will be induced, in which the demand for labour is greater than the supply.

(b) *The Wages Policy of the Trade Unions:* Full employment puts the trade unions in a strong bargaining position. During the era of depression, trade unions had to submit to some reduction in money wages, and had to wait for times of boom to secure wage increments for their members. If full employment is permanently maintained the situation becomes quite different conditions are favourable to the trade unions all the time. If over-full employment exists, the problem will be intensified, for shortages of labour in many occupations will lead to proposals being put forward for raising wages in those occupations in order to attract more labour to them. Since in these conditions, however, labour can be drawn only from other occupations, wage increment will be demanded elsewhere as a means of retaining labour! Increased wages in one occupation lead to increased wages in others. In these conditions, costs can generally be passed on to consumers, and so rising wages are followed by rising prices, which in turn give rise to further demands for wage increases. In this way the inflationary spiral is kept in motion, and is difficult to arrest.

2. Mal Distribution of Resources May Occur

Another serious danger is that economic resources will not easily move from one occupation to another. Changing conditions may reduce the demand for factors in one employment and increase the demand for factors in another. Instead of a transfer of factors taking place, there will be demand by the declining industry to be subsidised, especially if it happens to be a nationalised industry. Such as the railways-or protected by a tariff if foreign competition is severe. If economic forces are not allowed to determine the distribution of factors among different occupations, the assortment of goods produced will differ from that which the community as a whole prefers.

3. The Quality of Labour May Fall

There are three reasons for this:

(a) The high demand for labour makes it possible for the least efficient workers to secure employment.

(b) The removal of the fear of losing ones job may, often subconsciously, cause many workers to put forward less effort, and

(c) Labour turnover tends to increase as many workers find it easy to change jobs. In spite of all this, however, most countries in recent years found productivity rising as a result of the employment of more efficient capital.

Underemployment

Under employment exists when a person's capacity to work is under utilized; it is a situation when the marginal productivity of labour is less than what it is supposed to be or tends to be zero. it is a situation when somebody does less work than he should either monthly, weekly or daily.

Over Full Employment

This is a situation which occurs when the available job vacancies are more than the available number of unemployed. Over full employment is therefore a characteristic of

an inflationary situation where the demand for labour tends to run ahead of the supply of labour.

Unemployment and Inflation

Inflation and unemployment are related as follows:

- An increase in wages causes an increase in the supply of labour and therefore reduces unemployment but it leads to increase in the cost of production and thus a reason for cost push inflation.

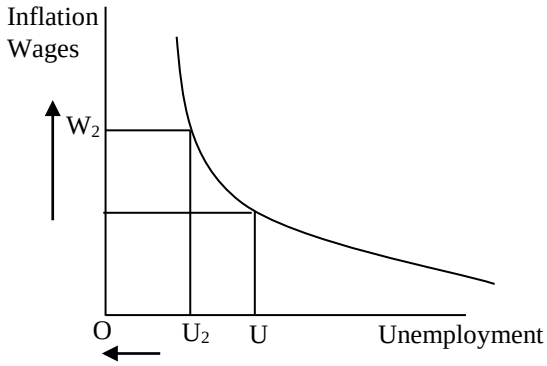


Figure: 10.2 Relationship between unemployment and inflation

In figure 10.2 above, an increase in wages from 0W1 to 0W2 lead to more supply of labour. An increase in the supply of labour leads to fall in unemployment. In figure 10.2, unemployment has fallen from U1 to U2 as a result of the increase in wages from W1 to W2

Unemployment Rate

This is a ratio between the number of people who are employed and the number of people who are unemployed.

TOPIC ELEVEN

PRIVATISATION

Privatisation

Privatisation is the transfer of ownership of state enterprises into private ownership.

Forms of Ownership.

1. *Liberalisation or deregulation*
   This refers to the complete removal of barriers of entry of private individuals to certain investment undertakings, so as to increase competition. This is often done in the export sector, foreign exchange markets, etc.
2. *Divestiture*
   This involves the complete sale of all shares of government to private sector.
3. *Partial Privatisation*
   Also known as joint venture ownership. This occurs when both government and the private sector own shares in any given undertaking though the private sector may dominate in the ownership of shares.
4. *Repossession*
   It is the return of property or enterprises to their former rightful owners e.g the NRM government returned, to their rightful owners, all the properties under the Departed Asian Custodian Board.
5. *Cost Sharing*
   This is where government removes or withdraws its financial support from an enterprise and leaves it to the direct beneficiaries; e.g. hospitals, schools, etc.
6. *Contracting-Out*
   This occurs when the provision of goods or services is transferred from the government to the private sector, but the state still retains the sole authority over ownership. E.g. it could involve privatising only management, but not ownership; therefore, management contracts, leases, concessions, etc; have to be signed.
7. *Leasing*
   It involves the renting or leasing out of a state owned enterprise to private Individuals. In Tanzania, for example, this has been done in toilets, markets, parks, taxi and bus parks, etc.

Arguments in Favour of Privatisation

There is a popular view by some economists that market forces tend to allocate resources optimally and more efficiently. The privatization exercise is deep rooted in a number of arguments usually advanced in its favour.

1. The government is often faced with the problem of inadequate capital to finance and maintain state owned enterprises.
2. Corruption and embezzlement by government officials, consequently results into mismanagement. This, therefore, calls for the privatization drive.
3. There is the argument that state enterprises require a lot of protection, which is not often common with the private sector undertakings.
4. The privatization programme is vital as it can increase the contribution of the private sectors to the Gross Domestic Product (GDP).

5. State firms require a lot of subsidies from the government, which is not always the case with the private sector.
6. There is urgent need to reduce the monopolistic tendency, which often creates inefficiencies. Privatisation can help to avoid this.
7. Capital inflow. Privatisation of state enterprises can encourage foreign investment. This will in turn lead to foreign capital inflow.
8. Privatisation leads to optimum utilization of the domestic resources, because government control is often characterized by excess capacity resource utilization.
9. Reduction of bureaucratic tendencies of the state sector. With privatization quick decision making is made possible.
10. Accountability. Management of firms under private individual on profit motive promotes efficiency and accountability.
11. To raise revenue. The government can raise adequate revenue by transferring its enterprises or assets into the hands of the private sector.
12. Employment. Privatisation tends to create employment opportunities in the private sector.
13. A wide tax base. Public sector enterprises being transferred into the hands of private individuals can help to widen the tax base.
14. Reduction of a public debt. Privatisation helps to reduce the country's indebtedness especially when the government incurs a reproductive (self liquidating) debt.

Arguments against Privatization

Privatization has the following disadvantages:

1. *Capital and Profit Outflow*
   When state enterprises are sold to foreign investors, excessive capital flight (outflow) is possible. Also most, of the profits can be swindled to outside the country.
2. *Social Costs*
   The society is likely to suffer from negative externalities such as pollution, noise, poor and quality of products.
3. *Difficulty in Planning*
   Privatization may cause difficulties in planning since the private sector tends to make its own plans and decisions some of which may contradict those of the government.
4. *Widening of Income Inequality*
   Privatization shift wealth of the society from the public/ government hands to few individual hands that become richer than other individuals in the society hence income inequality.
5. *Production of Essential Goods May Be Ignored*
   Private sector prefer producing luxury expensive and profitable goods to essential but low profit goods such as social services and therefore lead to fall in the living conditions of the poor majority.
6. *Unemployment Problem May Increase*
   Private sectors prefer applying capital intensive technique of production to labour intensive because of its efficiency.

7. *Inefficient Supply of Public Services*
   The private sector may fail to provide public services sufficiently due to reasons such as heavy investment required like construction of railways and ports.
8. *Emergence of Private Monopolies*
   Privatization may transfer state monopolies, which are more accountable to both the public and the government, to private monopolies which are less considerate to the public interests.

TOPIC TWELVE

ENVIRONMENTAL ECONOMICS

Environmental economics is a subfield of *economics* concerned with environmental issues:

Environmental Economics undertakes theoretical or empirical studies of the economic effects of national or local environmental policies around the world particular issues include the costs and benefits of alternative environmental policies to deal with air pollution, water quality, toxic substances, solid waste, and global warming

Central to environmental economics is the concept of market failure. Market failure means that markets fail to allocate resources efficiently. As stated by Hanley, Shogren, and White (2007) in their textbook *Environmental Economics*-"A market failure occurs when the market does not allocate scarce resources to generate the greatest social welfare. A wedge exists between what a private person does, given market prices and what society might want him or her to do to protect the environment. Such a wedge implies wastefulness or economic inefficiency; resources can be reallocated to make at least one person better off without making anyone else worse off." Common forms of market failure include externalities, non excludability and non rivalry.

Externality: the basic idea is that an externality exists when a person makes a choice that affects other people that are not accounted for in the market price. For instance, a firm emitting *pollution* will typically not take into account the costs that its pollution imposes on others. As a result, pollution in excess of the 'socially efficient' level may occur. A classic definition is provided by *Kenneth Arrow* (1969), who defines an externality as "a situation in which a private economy lacks sufficient incentives to create a potential market in some good, and the nonexistence of this market results in the loss of efficiency." In economic terminology, externalities are examples of *market failures*, in which the unfettered market does not lead to an *efficient* outcome.

Common property and non-exclusion: When it is too costly to exclude people from accessing a rivalries environmental resource, market allocation is likely to be inefficient. The challenges related with common property and non-exclusion has long been recognized. Hardin's (1968) concept of the *tragedy of the commons* popularized the challenges involved in non-exclusion and common property. "Commons" refers to the environmental asset itself, "common property resource" or "common pool resource" refers to a property right regime that allows for some collective body to devise schemes to exclude others, thereby allowing the capture of future benefit streams; and "open-access" implies no ownership in the sense that property everyone owns nobody owns. The basic problem is that if people ignore the scarcity value of the

commons, they can end up expending too much effort, over harvesting a resource (e.g., a fishery). Hardin theorizes that in the absence of restrictions, users of an open-access resource will use it more than if they had to pay for it and had exclusive rights, leading to environmental degradation. See, however, Ostrom's (1990) work on how people using real common property resources have worked to establish self-governing rules to reduce the risk of the tragedy of the commons

Public goods and non-rivalry: Public goods are another type of market failure, in which the market price does not capture the social benefits of its provision. For example, protection from the risks of climate change is a public good since its provision is both non-rival and non-excludable. Non-rival means climate protection provided to one country does not reduce the level of protection to another country; non-excludable means it is too costly to exclude any one from receiving climate protection. A country's incentive to invest in carbon abatement is reduced because it can "free ride" off the efforts of other countries. Over a century ago, Swedish economist Knut Wicksell (1896) first discussed how public goods can be under-provided by the market because people might conceal their preferences for the good, but still enjoy the benefits without paying for them.

GLOBAL GEOCHEMICAL CYCLES CRITICAL FOR LIFE

Nitrogen Cycle

Water Cycle Carbon Cycle

Oxygen Cycle

Assessing the economic value of the environment is a major topic within the field. Direct use and indirect use are tangible benefits accruing from *natural resources* or *ecosystem services* (see the *nature section* of ecological economics). Non-use values include existence, option, and bequest values. Those are also called "*Intrinsic value"* in "*Deep Ecology*". For example, some people may value the existence of a diverse set of species, regardless of the effect of the loss of a species on ecosystem services. The existence of these species may have an option value, as there may be possibility of using it for some human purpose (certain plants may be researched for drugs). Individuals may value the ability to leave a pristine environment to their children.

Use and indirect use values can often be inferred from revealed behavior, such as the cost of taking *recreational trips* or using *hedonic methods* in which values are estimated based on observed prices. Non-use values are usually estimated using stated preference methods such as *contingent valuation* or *choice modelling.* Contingent valuation typically takes the form of surveys in

which people are asked how much they would pay to observe and recreate in the environment (*willingness to pay*) or their willingness to accept (WTA) compensation for the destruction of the environmental good. Hedonic pricing examines the effect the environment has on economic decisions through housing prices, traveling expenses, and payments to visit parks.[4]

Solutions for externalities

Solutions advocated to correct such externalities include:

- *Environmental regulations*: Under this plan the economic impact has to be estimated by the regulator. Usually this is done using *cost-benefit analysis*. There is a growing realization that regulations (also known as "command and control" instruments) are not so distinct from economic instruments as is commonly asserted by proponents of environmental economics. E.g.1 regulations are enforced by fines, which operate as a form of tax if pollution rises above the threshold prescribed. E.g.2 pollution must be monitored and laws enforced, whether under a pollution tax regime or a regulatory regime.

  The main difference an environmental economist would argue exists between the two methods, however, is the total cost of the regulation. "Command and control" regulation often applies uniform emissions limits on polluters, even though each firm has different costs for emissions reductions. Some firms, in this system, can abate inexpensively, while others can only abate at high cost. Because of this, the total abatement has some expensive and some inexpensive efforts to abate. Environmental economic regulations find the cheapest emission abatement efforts first, then the more expensive methods second. E.g. as said earlier, trading, in the quota system, means a firm only abates if doing so would cost less than paying someone else to make the same reduction. This leads to a lower cost for the total abatement effort as a whole.
- *Quotas on pollution*: Often it is advocated that pollution reductions should be achieved by way of *tradeable emissions permits*, which if freely traded may ensure that reductions in pollution are achieved at least cost. In theory, if such tradeable quotas are allowed, then a firm would reduce its own pollution load only if doing so would cost less than paying someone else to make the same reduction. In practice, tradeable permits approaches have had some success, such as the U.S.'s sulphur dioxide trading program or the EU Emissions Trading Scheme, though interest in its application is spreading to other environmental problems.
- *Taxes and tariffs on pollution*/*Removal of "dirty subsidies"*: Increasing the costs of polluting will discourage polluting, and will provide a "dynamic incentive", that is, the disincentive continues to operate even as pollution levels fall. A pollution tax that reduces pollution to the socially "optimal" level would be set at such a level that pollution occurs only if the benefits to society (for example, in form of greater production) exceeds the costs. Some

advocate a major shift from taxation from income and sales taxes to tax on pollution - the so-called *"green tax shift"*.

Advantages of pollution taxes it can be argued that using pollution to alter the behaviour of economic agents in the economy is preferable in some respects to the use of environmental standards imposed through legislation. consider the following claimed advantages of population taxes.

(a) Incentive to reduce pollution. if a producer has to pay a tax based on the quantity of pollution created, the producer can pay less tax as result of emitting less pollution. it is argued, therefore, that a pollution tax can give a producer a continuing incentive to reduce pollution. whether or not the producer choose to pay the tax or to incur expenditure on installing pollution abatement equipment depends on which option is cheaper. producers for whom the cost of reducing pollution is high are more likely to choose to pay the pollution tax.

(b) Demonstration affect. if the pollution taxes are well publicized to consumers then there may be a demonstration affect where by consumer's attention is drawn to the pollution effects of the relevant products. it is possible that some environmentally conscious consumers may cut back on their usage of these products to a greater extent than suggested by estimates of shor-run elasties of demand.

Cost of pollution taxes. It can be argued that pollution taxes imposed some costs. Consider the following.

(a) Inflation impact. By pushing up prices, it said that pollution taxes are inflationary. Clearly there is some truth in this view as far the short-run impact on the price level is concerned. But pollution taxes should not be a source of continuing inflation. Indeed over time the total amount paid in population taxes should fall as the level of population diminishes.

(b) Monitoring costs. it is the that the effective implementation of pollution taxes will required continuous monitoring of pollution emission. such monitoring may prove costly. But it should be noted that such monitoring is also required may proved costly . But implementation of physical limits on pollution.

- *Better defined property rights*. The Coase Theorem states that assigning property rights will lead to an optimal solution, regardless of who receives them, if transaction costs are trivial and the number of parties negotiating is limited. For example, if people living near a factory had a right to clean air and water, or the factory had the right to pollute, then either the factory could pay those affected by the pollution or the people could pay the factory not to pollute. Or, citizens could take action themselves as they would if other property rights were violated. The US River Keepers Law of the 1880s was an early example, giving citizens downstream the right to end pollution upstream themselves if government itself did not act (an early example of bioregional democracy). Many markets for "pollution rights"

have been created in the late twentieth century-see *emissions trading*. The assertion that defining property rights is a solution is controversial within the field of environmental economics and environmental law and policy more broadly; in Anglo-American and many other legal systems, one has the right to carry out any action unless the law expressly proscribes it. Thus property rights are already assigned (the factory that is polluting has a right to pollute).

Relationship of environment economics to other fields

Environmental economics is related to *ecological economics* but there are differences. Most environmental economists have been trained as economists. They apply the tools of economics to address environmental problems, many of which are related to so-called market failures-circumstances wherein the "*invisible hand"* of economics is unreliable. Most ecological economists have been trained as ecologists, but have expanded the scope of their work to consider the impacts of humans and their economic activity on ecological systems and services, and vice-versa. This field takes as its premise that economics is a strict subfield of *ecology.* Ecological economics is sometimes described as taking a more pluralistic approach to *environmental* problems and focuses more explicitly on long-term environmental sustainability and issues of scale.

Environmental economics is viewed as more pragmatic in a *price system*; ecological economics as more idealistic in its attempts not use *money* as a primary arbiter of decisions. These two groups of specialists sometimes have conflicting views which may be traced to the different philosophical underpinnings.

Another context in which *externalities* apply is when *globalization* permits one player in a market who is unconcerned with *biodiversity* to undercut prices of another who is - creating a "race to the bottom" in regulations and conservation. This in turn may cause loss of *natural capital* with consequent erosion, water purity problems, diseases, desertification, and other outcomes which are not *efficient* in an economic sense. This concern is related to the subfield of *sustainable development* and its political relation, the *anti-globalization movement.*

The three pillars of sustainability

Environmental economics was once distinct from *resource economics*. Natural resource economics as a subfield began when the main concern of researchers was the optimal commercial exploitation of natural resource stocks. But resource managers and policy-makers eventually began to pay attention to the broader importance of natural resources (e.g. values of fish and trees beyond just their commercial exploitation;, externalities associated with mining). It is now difficult to distinguish "environmental" and "natural resource" economics

as separate fields as the two became associated with *sustainability.* Many of the more radical *green economists* split off to work on an alternate *political economy.*

Environmental economics was a major influence for the theories of *natural capitalism* and *environmental finance,* which could be said to be two sub-branches of environmental economics concerned with *resource conservation* in production, and the *value of biodiversity* to humans, respectively. The theory of *natural capitalism* (Hawken, Lovins, Lovins) goes further than traditional environmental economics by envisioning a world where natural services are considered on par with *physical capital*.

The more radical *Green economists* reject neoclassical economics in favour of a new *political economy* beyond *capitalism* or *communism* that gives a greater emphasis to the interaction of the human economy and the natural environment, acknowledging that "economy is three-fifths of ecology" - *Mike Nickerson.*

These more radical approaches would imply changes to *money supply* and likely also a *bioregional democracy* so that political, economic, and ecological "environmental limits" were all aligned, and not subject to the *arbitrage* normally possible under *capitalism.*

Professional bodies

The main academic and professional organizations for the discipline of Environmental Economics are the *Association of Environmental and Resource Economists (AERE)* and the European Association for Environmental and Resource Economics (EAERE). The main academic and professional organization for the discipline of Ecological Economics is the International Society for Ecological Economics (ISEE).

TOPIC THIRTEEN

CONSUMER AND PRODUCER EQUILIBRIA

Consumer equilibrium

When a good is consumed a consumer presumably derives some benefit or satisfaction from the activity. Economists have called this benefit or satisfaction **utility**, and have assumed that, in choosing among goods, a consumer will attempt to gain the greatest possible utility, subject to the size of his or her income.

Some nineteenth–century economists thought that utility might be measured as if it were a physical quantity. In other words, just as coal can be measured in tones they believed that utility could similarly be measured in its own units (like utils) these economists (among whom Alfred Marshally figure prominently) have become known as cardinalist because they believed that cardinal numbers could be used to express utility measurements. For example, a consumer may obtain 20 utils from a heap of carrots, but only 10 utils from a helping of beans. The cardinalists would conclude from this that the consumer obtains twice as much utility from the carrots as from the beans and that the absolute difference between the utility derived from the carrots and that derived from the beans is 10 utils.

Utility, however is an abstract, subject concept and there are two major problems involved in trying to measure if for an individual.

(a) It is difficult to find an appropriate unit of measurement. If we call the unit a util, what is util? How do we calculate the number of utils enjoyed by an individual at a moment in time? are 10 utils enjoyed by one individual equivalent to 10 utils enjoyed by another -in other word, can we make interpersonal comparisons of utility?

(b) To measure the utility derived by an individual in consuming a good requires that all the other factors which affect his or her level of satisfaction be held constant and it is clearly impossible to carry out such a controlled experiment. There are too many other factors (economic, social and psychological) which influence an individual's level of utility.

By the 1930s, many economists were coming to the view that utility could not be measured cardinally and that cardinally measurement was not essential for a theory of consumer behavour. These economists (who include Hicks and Allen who in turn were influenced by the earlier works of Pareto and Slusky) have become known ordinalists. This because they claimed that an individual can rank bundles of goods in order of preference and say that he or she derives more utility from one bundle

than from another , or that the consumer derives equal utility from two or more bundles. It is impossible though, to measure by how much one bundle is preferred to another. For example, a consumer my prefer carrots to beans but, according to the ordinalist will be completely unable to attach a numerical measure to the degree.

of preference. In case only ordinal number (first second third and so on) can be used to "measure" utility and these say nothing about the absolute difference or any other relationship between utilities. Indifference curves and budget lines are the means of illustrating this ordinalist approach to demand theory and are now widely used in all branches of modern economics.

Total utility, marginal utility and diminishing marginal utility

Total utility refers to the total satisfaction that a person obtains by consuming certain units of a commodity.

Marginal utility is the additional satisfaction obtained by consuming extra money's worth of a good. Marginal utility is expressed as:

$$\text{Marginal utility} = \frac{\text{Change in total utility}}{\text{Change in quantity consumed}}$$

Diminishing marginal utility

This is the tendency of marginal utility to fall as a person consumes more and more units of a commodity.

These concepts can further be explained by the use of the following schedule

Table 12.1. Total utility and marginal utility

Quantity of X consumed per week	Total utility(units per week)	Marginal utility(units)
0	0	-
1	20	20
2	50	30
3	60	10
4	62	2
5	60	-2

From the table 12.1, as a consumer consumes more units of commodity X, marginal utility increases, but after certain units start to fall ie obeying the law of diminishing marginal utility.

Maximization of satisfaction (Consumer equilibrium)

One important decision to a consumer is at what levels of consuming different goods will he/she achieve maximum satisfaction?

Now consider a consumer who has to choose between two goods , X and Y which have prices P_X and P_Y respectively. Assume that the individual is rational and so wishes to maximize total utility subject to the size of his or her income.

The consumer will be maximizing total utility when his or her income has been allocated in such a way that the utility to be derived from the consumption of an extra Shilling's/Dollar's worth of X is equal to the utility to be derived from the consumption of one extra Shilling's/Dollar's worth of Y. In other words, when the marginal utility per unit of money of X is equal to the marginal utility per unit of money of Y. Only when this is true will it not be possible to increase total utility by switching expenditure from one good to the other.

This condition for consumer equilibrium can be written as follows.

$$\frac{MUX}{PX} = \frac{MUY}{PY}$$

Where MU_X and MU_Y are the marginal utilities of X and Y respectively and PX and PY are the prices of X and Y respectively.

In order to derive the individual's demand curve for good X, consider what happens to this condition when the price of X falls. It must be true (assuming that the price of Y remains unchanged that:

$$\frac{MUX}{PX} > \frac{MUY}{PY}$$

The consumer can now increase his or her total utility by consuming more units of good X. This will have the effect of decreasing the marginal utility of X (because of the hypothesis of diminishing marginal utility) and the consumer will continue increasing his or her expenditure on X until the equality is restored. We now have the result that a fall in the price of a good will, ceteris paribus, give rise to an increase in a consumer's demand for it, that is to say, the demand curve slopes downwards from left to right.

An illustration of this suppose initially that MU_X =20 utils, MU_Y =25 utils, P_X = 4p and P_Y = 5p, so that the condition is satisfied:

$$\frac{MUX}{PX} = \frac{MUY}{PY} = 5 \text{ utils per unit of money}$$

Now let the price of X fall to 2p. With consumption unchanged, the MU per unit of money of Y. How will the consumer respond to this?By spending an extra money on good Y, only 5utils are derived. Clearly, the consumer will buy more units of X, thus reducing their MU until the MUs per unit of money for X and Y are once again equal.

Indifferent curves

An indifferent curve is a curve that joins together all the different combinations of two goods which yield the same utility to the consumer. An example of indifferent curve is shown below.

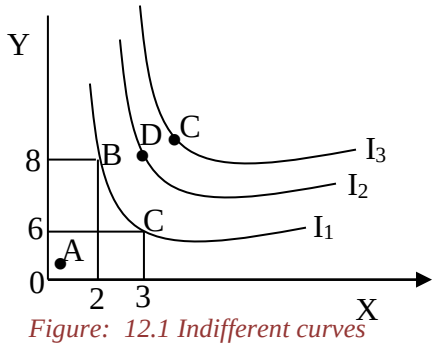


Figure: 12.1 Indifferent curves

This graph shows three of the infinite number of indifference curves which make up an individual's indifference map. The vertical axis measures the quantity of good Y and the horizontal axis measures the quantity of good X. thus, every point on the graph represents some combination of X and Y. Points very close to the origin, like point A represent small quantities of X and Y; points further away from the origin represent bigger quantities. Combination on the same indifferent curve give eg B and C gives same utility to the consumer.

Characteristics of indifferent curves

Indifferent curves have the following characteristics

(i) Indifferent curves can never intersect.

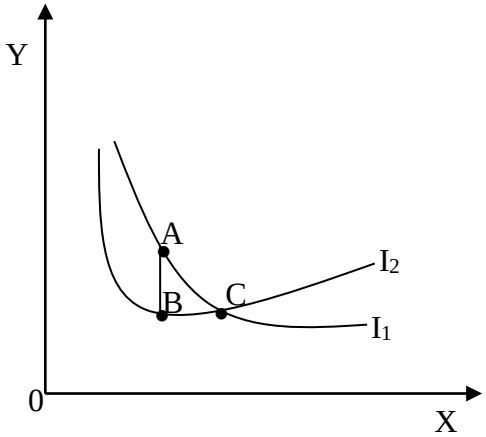


Figure: 12.2 Intersecting indifferent curves

In figure 12.2, the individual is indifferent between A and C, and between B and C and should, therefore, also be indifferent between A and B. But this would be irrational as A contains more Y than B and the same amount of X. We conclude that to be consistent with rationality, indifference curves cannot intersect.

(ii) Indifferent curves slope downwards from left to right

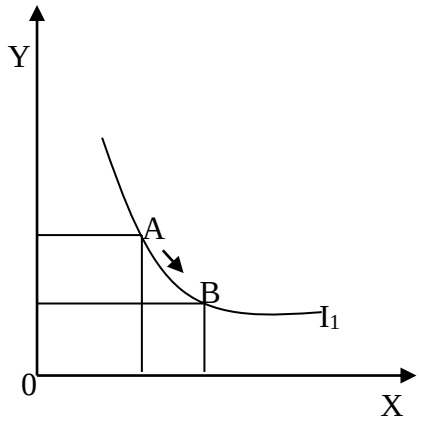


Figure: 12.3 The negative slope of an indifferent curve

In figure 12.3, if both X and Y are goods (so that the consumer derives utility rather disutility from them) and if the consumer is not satiated with either X or Y, then as some of the good is given up, more units of the other must be obtained if the consumer is to remain at the same level of utility. In figure 12.3. In moving from point A to B, as units of Y are given up, more units of X are obtained and the utility derived is unchanged. For this to be true, the indifference curve must slope downwards from left to right.

(iii)Indifferent curves are convex to the origin

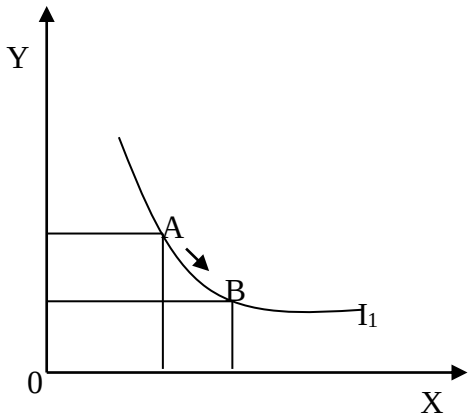


Figure: 12.4 The convexity of an indifferent curve.

In figure 12:4, as more and more units of Y are given up, successfully bigger quantities of X must be obtained to compensate the consumer for this loss.

BUDGET LINES AND CONSUMER EQUILIBRIUM

A budget line shows the different combinations of two goods that can be bought with a given money income.

Given a money income M and two commodities X and Y sold at price P, a budget of a consumer will be expressed as:
$M = P_X + P_Y$

Slope of the budget line(Marginal rate of substitution)

The slope of the budget line or the marginal rate of substitution shows units of one commodity which must be given up to buy extra units of another commodities. In the budget line $M=P_X +P_Y$, the slope of the budget line is P_X/P_Y.

Indifferent curves only tells about the consumer's preferences for the two goods. By themselves cannot tell us which combinations will be chosen. In addition to the consumer's preferences we need to know his or her income and prices of the two goods .Given this information and assuming that the consumer will choose the combination of the two goods which will yield the greatest utility(that is, put the consumer on the greatest attainable indifferent curve)we can determine the combination of X and Y that the consumer will choose. A consumer will choose a combination of commodities that will maximize his /her satisfaction.

As an example, suppose the price of X Tshs 20, the price of Y is Tshs 10, and suppose the consumer's income is Tshs 100. Table 9:2 shows the combinations of X and Y that he or she just afford to buy.

Table 12:2. Combinations of X and Y that the consumer can just afford to buy with an income of Tshs 100

Quantity of X(price=Tshs 20)	Quantity of Y(price =Tshs 10)
0	10
1	8
2	6
3	4
4	2
5	0

Plotting these points on the same as the indifferent map, we obtain what is called the budget line. This is illustrated in figure 9.5; it shows the combinations of the two goods that can just be afforded with an income of Tshs 100. The (absolute) slope of the budget line (10/2=5) measures the relative price of X in terms of Y –that is, two units of Y must be given up in order to buy one unit of X. If we let P_X denote the price of X and P_Y the price of Y, then we can write the slope of the budget line as equal to $\frac{Px}{Py}$

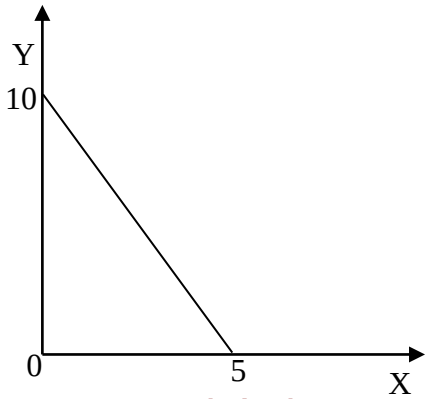


Figure: 12.5 A budget line

In figure 12.5, assuming that the consumer's income is Tshs100 and the prices of X and Y are Tshs 20 and Tshs 10 per unit respectively, this budget line shows the combinations of the two goods that the consumer can just afford.

Assuming that all the consumer's income is spent on X and Y, he or she will choose the combination represented by point A. This is the point where the budget line is just tangent to an indifferent curve. The indifferent curve I_2 is the highest one that can be reached. Point A is called the consumer equilibrium point. The consumer is said to be maximizing utility subject to budget constraint.

Since the budget line is tangent to the indifference curve at point A, it must be true that the slope of the indifference curve(the marginal rate of substitution) is equal to the slope of the budget line at that point. Thus we can write that, at the consumer equilibrium point,

Absolute slope of budget line $= \frac{Px}{Py}, = \frac{MUX}{MUY}$

A consumer is said to maximize satisfaction where the budget line is tangent to the indifferent curve.

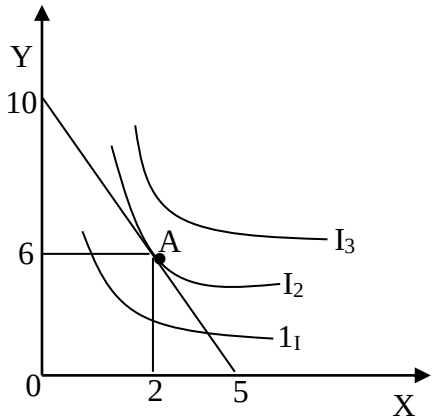


Figure: 12.6 Consumer equilibrium

In figure 12.6, the consumer maximizes utility subject to the budget constraints at point A where the budget line is tangent to the indifferent curve.

Producer equilibrium

A producer is said to be in equilibrium when He/she maximizes profit or minimizes cost.

An equilibrium point is at a point where the slope of the isocost is equal to the slope of the isoquant.

Iso-cost illustrates all combinations of input that can be bought for a given monetary outlay. Given capital (K) and labour(L), prices of these input as P and total financial outlay(M). The isocost function will be expressed as

$M = P_K K + P_L L$

The slope of the isocost is $\frac{Pk}{Pl}$

Where, Pk is the price of capital and Pl is the price of labour. For example, given the money outlay of Tshs 2000, price of labour of Tshs 200 per unit and price of capital of 100 per unit. The combinations of input will be as follows:

Labour	Capital
10	0
8	4
6	8
4	12
2	16
0	20

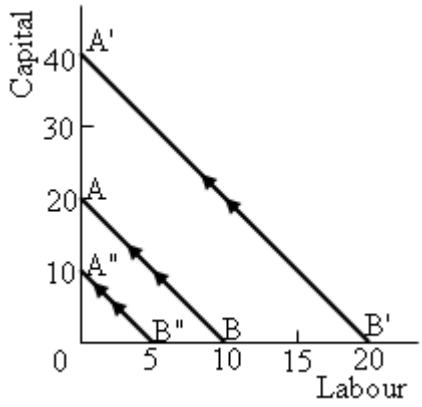


Figure: 12.7 Isocost lines

In figure 12.7 each isocost line shows combination of capital and labour that can be bought for a given outlay. The isocost line AB is drawn from the data shown in the table above.

Isoquant

Isoquant, sometimes called an isoproduct curve, it is a contour line which joins together the different combinations of two factors of production that are just physically able to produce a given quantity of a particular good.

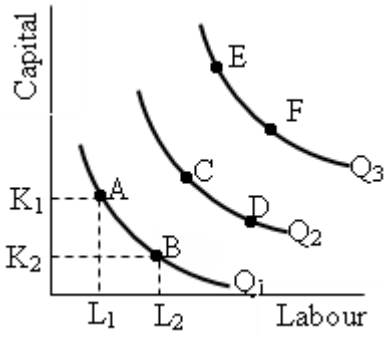


Figure: 12.8 Isoquant map for good X

Each isoquant shows different combinations of labour and capital which, when used efficiently, can produce a given level of output.

Features of Isoquant curves

(i) Isoquants cannot intersect

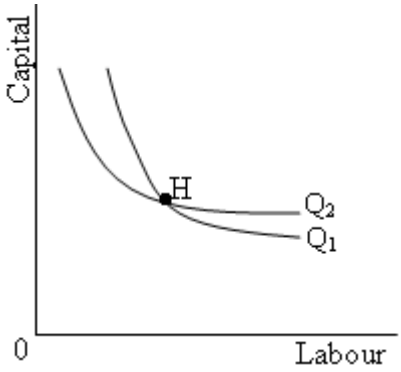


Figure: 12.9 Two intersecting isoquants for good X

In figure 9.4 point H is a combination of capital and labour which, when used efficiently can produce two different quantities Q_1 and Q_2 which is absurd.

(ii) An isoquant is convex to the origin.

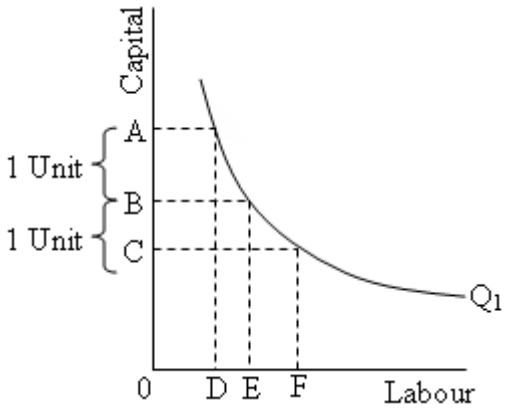


Figure 12.10. An isoquant convex to the origin

In figure 9.10 as units of capital are given up, successfully bigger quantities of labour must be employed to keep the output level unchanged. This makes the isoquant convex to the origin as shown .

(iii) Isoquants are negatively sloped

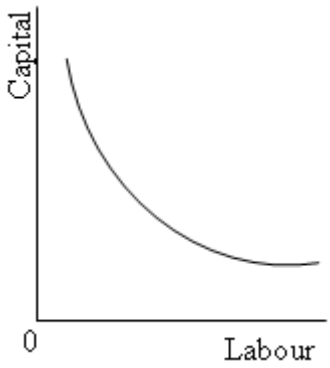


Figure: 12.11 Negatively sloped isoquant

In figure 12.11 if both capital and labour have positive marginal products (so that the employment of extra units increases total output), then it follows that to maintain a given level of output when the quantity of one factor is reduced, the quantity of the other must be increased.

Optimal Combination of Inputs

This is when the marginal product per unit of money of X is equal to the marginal product per unit of money of Y.

$$\text{Optimal} = \frac{MPk}{Pk} = \frac{MPL}{PL}$$

Where MPk =Marginal productivity of capital, MPL = Marginal productivity of labour, Pk = price of capital and PL = Price of labour.

This is the point of tangency between the isocost and the isoquant.

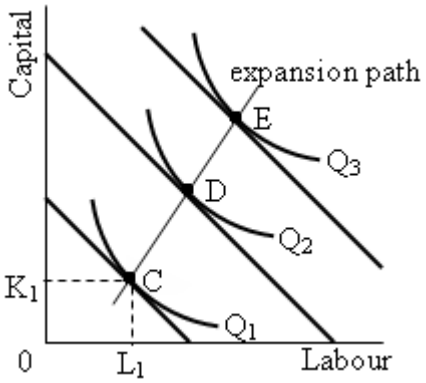


Figure: 12.12 Optimal combination of inputs

In figure 12.12, to produce given output X, say Q1, at minimum cost(optimal combination), a firm will produce at point where isoquant Q1 is just touching, or is tangent to, an isocost line. This is the isocost line nearest to the origin that can be achieved. Point C represents optimal combination, all other combinations of capital and labour along the isoquant Q1 would involve the firm in a larger monetary outlay. As the firm expands in the longrun, it will continue to attempt to minimize its costs. Thus, production of output Q2 would be at point D and production of output Q3 would be at point E. The locus of points CDE is referred to as the firm's longrun expansion path.

REVISION QUESTIONS

1 Explain three cases to show how a firm may gain from specialization and two cases to show how specialization may cause problems to the firm.
2. (i) What is land to an economist?
   (ii) Is land a free commodity?
   (iii) Is it fixed in supply.
3. Discuss the factors of production and their characteristics
4. Explain the various production techniques and explain which of these are ideal for Tanzania
5. Distinguish between production in economics and production in general usage. Discuss the different aspects that a nation may be living on its capital.
6. What are economies and diseconomies of scale?
7. Explain the advantages of mass production
8. Explain briefly labour productivity and a mode of production
9. Production is some times defined as a process of creating utility. Show how form, time and place utility may each lead to increment in production.
10. What is a production function, what factors affect a production function?
11. What are the main obstacles to the mobility of labour.
12. What are the benefits and costs of privatization of state monopoly?
13. Define a perfect market; explain the features of perfect competition
14 (a) Classify the following markets:
    (i) Market for beans
    (ii)Perfect market
    (iii)Capital market
    (iv)Market for shoes
    (v) Monopolistic market
    (b) Explain your classification.
15. (a) What is meant by monopoly
    (b) Explain how monopoly arises
16 In what ways are market types different from market structures?
17. Explain why perfect market is a theoretical concept
18. Explain how markets are classified. Give examples
19. Explain the essentials of for a market to exist; what factors may limit the size of the market
20. Explain the various concepts of the word market in economics.
21. Both perfect market ands absolute monopoly are theoretical concepts. Discuss.
22. With the aid of a graph explain the disadvantages of monopoly
23. Distinguish between the goods market and the factor market
24. What is the market period?
25. Examine the case for and against monopoly.
26. What are factors, which cause imperfection of market?
27. What are the necessary conditions for price discrimination.
28. Explain the kinked demand theory.
29. Distinguish between perfect oligopoly and imperfect oligopoly.
30. Draw a diagram to show how revenue can be maximized under price discrimination.

31. What is a natural monopoly?
32. Explain the possible solutions to the problems of monopoly.
33. Why is a monopoly a type of market failures?
34. State the laws of demand and supply
35. Which of the following is a demand function? And why?
    (i) $Q_1 = 5 + 2P$
    (ii)$Q_1 = 15 - 3P$. Calculate the equilibrium price and quantity given the two equations
36. You are given the following schedule

Price of Y shs /unit	**Quantity of X bought**
1	30
2	40
3	50
4	60
5	70

    (a) Draw a graph of the schedule, price of y on the y-axis and the quantity of x on the x-axis
    (b) Explain what your graph shows
    (c) Give the economic interpretation of the above information
    (d) Name the commodities x and y, give reasons for your answers
37. With reference to specific examples draw graphs to show two goods that are jointly supplied.
    (a) Regressive supply curve
    (b) Price determination by supply and demand when
        (i) Supply is perfectly inelastic
        (ii) Demand is perfectly elastic
38. The demand for food as a whole is inelastic but the demand for specific kind of food tends to be elastic. What does this statement mean?
39. While ones income is an important determinant of ones demand it is not an important an important determinant of ones supply. Discuss.
40. Calculate the cross elasticity of demand and comment on your answer given the following information, when the price of meat falls from shs. 200 to shs. 150 the amount of beans demanded by an individual decrease from 20kg to 15kg.
41. Differentiate between a change in demand and a change in quantity demanded
42. You are given the following information

Price of y Tshs	**Quantity of x bought in month**
10	70
15	60
20	50
25	40
30	30

    (a) Draw a graph to represent the above schedule
    (b) Explain what your graph shows

(c) Give the economic interpretation of the above information
(d) Name commodities x and y

43. What are the advantages and disadvantages of price mechanisms?
44. What are the arguments in support of price control?
45. Differentiate between planned demand and realized demand.
46. Explain how the price mechanism works to allocate resources of the society.
47. Why do the prices of agricultural goods fluctuate more than the prices of manufactured goods?
48. If demand is inelastic what effects might a unit sales tax have on the price of the good and the quantity bought and sold?
49. Contrast the income elasticity of demand for normal goods and inferior goods.
50. If demand is inelastic, what effects will a price fall have on a firm's total revenue?
51. List the determinants of price elasticity of supply.
52 Explain the marginal productivity theory of wages
53. As a general manager of a cargo handling company what wage system will you adopt? Why?
54. Why do wages differ among employees?
55 What are the determinants of wages in Tanzania?
56. Discuss the methods of payments of wages that are used in Tanzania.
57. How does the economist define interest explain the difference between interest and other forms of payments.
58. What are the effects of a trade union having successful negotiated a wage rate higher than the equilibrium wage rate
59. Explain the market theory of wages
60. Explain the impact and basis of raising the minimum wage in Tanzania
61. Describe the role and function of profit in a free enterprise economy.
62 ''Money is as money does''. Discuss
63. Briefly discuss barter system
64. During inflation all types of people are losers. Discuss
65. People find life difficult because they don't have money should the government
    (a) Stop using money
    (b) Print more and more money to make the life of the people happier?
66. (a) Define the motives why people hold money
    (b) Show clearly how one of the motive is related to the rate of interest
67. (a) Define money
    (b) Explain Keynesian motives for holding money
68. Why should money be scarce? Discuss other three motives of good money.
69. No profit no production. Does this mean interest and rent are not important payments.
70. How is the price of land determined?
71. Consider the effects of deflation.
72. What are the aims and effects of devaluation?
73. What is appreciation of a currency? Discuss.
74. Discuss the causes and types of inflation.

75. What is an optimum firm? Explain the different ways, which a firm may use to minimize its cost of production.
76. Distinguish, short run average cost curves from long run average cost curves.
77. What is meant by size of the firm? Mention five factors that determine the size of the firm.
78. Given the following schedule.

Output	**Total cost**	**Marginal cost**	**Average cost**
1	10	-	-
2	18	-	-
3	24	-	-
4	32	-	-
5	42	-	-

    (a) Complete the table
    (b) At what level of out put is average cost at a minimum?
79. Outline the necessary conditions for profit maximizing behaviour of the firm under perfect competition
80. Discuss factors affecting location of industries.
81. What is an optimum firm?
82. Are firms in Tanzania optimum firms?
83. Draw a graph to show advantages of advertising to an entrepreneur producing under conditions of imperfect competition, explain your graph.
84. Explain the various concepts of costs
85. Why should a distinction be made between equilibrium of a firm and that of an industry.
86. Given the following table about a firm

Output units	**Total cost (shs. 000)**	**AFC (shs.000)**	**AVC (shs.000)**	**MC (shs.000)**
0	50	-	-	-
1	70	-	-	-
2	80	-	-	-
3	85	-	-	-
4	90	-	-	-
5	120	-	-	-

    Where AFC = average fixed cost.
    AVC = average variable cost.
    MC = marginal cost.
    (a) Complete the blanks.
    (b) Show the point of output where the firm will maximize profit
87. If there are economies of scale, why should cost curves ultimately rise?
88. Explain the following internal economies of scale
    (a) Technical economies
    (b) Financial economies
    (c) Marketing economies
    (d) Welfare economies

89. Compare and contrast an optimum firm and an equilibrium firm.
90. A loss in short run should not stop a firm from producing.
91. Show the relationship between
(a) Short run and long run
(b) Economies of scale and laws of returns
92. Distinguish between normal and abnormal profit
93. Explain the difference between the way accountants and economists treats profits and costs.
94. Is perfect competition efficient? Why is the perfectly competitive firm's average revenue curve horizontal?
95. Distinguish between a plant and a firm.
96. What diseconomies and consequent problems may be associated with large-scale production?
97. What is the main economic problem? And how do human societies try to solve this problem?
98. Explain the term economy, which is more economical to travel by air from Dar es Salaam to Mwanza by train or by air?
99. Explain why there is no single definition of economics?
100. As an economics student analyse the statement that where scarcity exists, choice and opportunity cost are unavoidable.
101. The economic problems are results of the scarcity of resources. Discuss.
102. Economics is concerned only with goods, which have exchange value. Explain.
103. The basic economic problem is not so much about the amount of production from scarce resources but rather how the resulting products are distributed. Discuss
104. Distinguish between:-
    (i) A bad, and a good
    (ii) An economic good and a free good
105. Who is an economic man?
106. How does Economics differs from political economy?
107. What is the usefulness of studying economics?
108. Differentiate consumer and producer goods
109. Economics is literally the study of economizing, Discuss.
110. Is Tanzania a capitalist or socialist economy? Explain.
111. With examples explain why economic systems differ?
112. How does a mode of production differ from an economic system?
113. Tanzania is an example of a mixed economy. Cuba is an example of a socialist and United Kingdom is an example of capitalist economy. Explain.
114. What is a transition period? With reference to your study of economic system show why the transition is necessary.
115. What are the basic features of a socialist economy?
116. What is an economic system? Explain its functions.
117. How does a socialist economy differ from a capitalist economy.
118. What is the meaning of unplanned economy and a planned economy?
119. Explain the merits and demerits of planned and unplanned economies.
120. What justification would you advance for government intervention in a free market system?

121. All economic systems have the same broad objectives but differ in the way the objectives are met. Discuss
122. Discuss the place of socialism as an economic system in the world today.
123. How are resources allocated in a mixed economy.
124. Describe the main economic problems, which led to the decline in popularity of a command economy.

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