



**HEALTH ECONOMICS
LECTURE NOTES – LEVEL II**

Dr Diana Kimani - Macharia

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CHAPTER ONE



INTRODUCTION TO ECONOMICS

LEARNING OBJECTIVES

At the end of this chapter, the student will be able to:

1. Understand the meaning and purpose of economics
2. Know the major branches and approaches of economics
3. Understand choice, scarcity and opportunity cost
4. Know the three basic economic questions
5. Understand the four economic systems
6. Explain the circular flow of income and expenditure

1.1 DEFINITIONS OF ECONOMICS

- The study of how men and society end up choosing to employ scarce resources that could have alternative uses” (Samuelson)
- Economics is the study of how people allocate their limited resources in an attempt to satisfy their unlimited wants.
- As such, economics is the study of how people make choices.
- It is also the study of scarcity and choice, and how to manage the scarce or limited resource.
- The subject matter of economics lies on the production, distribution and consumption of economic goods. How much to spend on education, health, books, travel, food or clothing are choices that have to be made. Once society chooses to have more health services, for example, it thus chooses to have less leisure or less to spend on education.

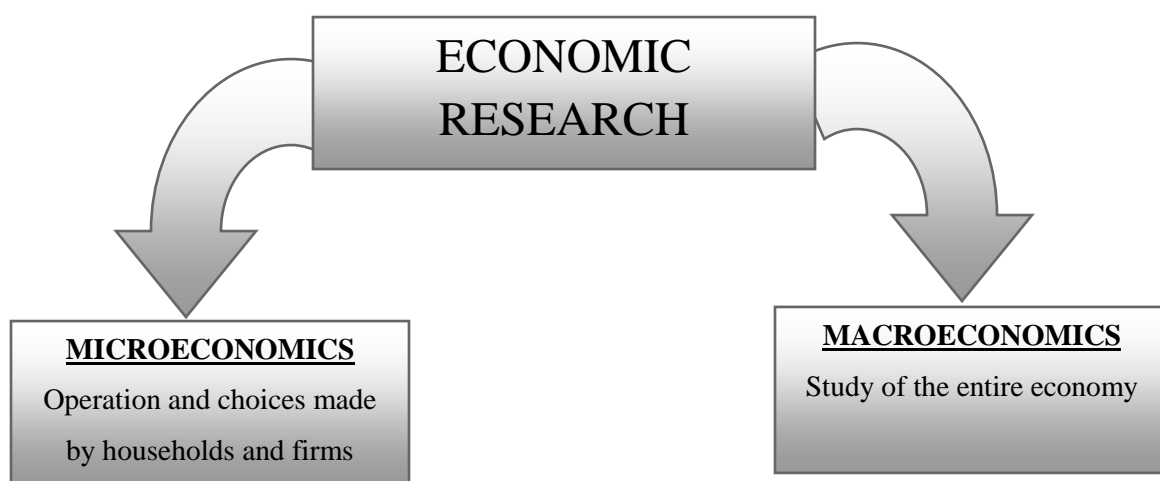
1.2 BRANCHES AND APPROACHES OF ECONOMICS

1.2.1 Macroeconomics versus microeconomics

Macroeconomics involves study of the entire economy. It focuses on sectors and variables with wider scopes such as national production and income, aggregate demand and supply, movement of general price level, and problems such as unemployment and inflation.

Microeconomics focuses on the operations and choices made by the decision making units namely household, firm and industry. Deals with the behavior of individual prices and quantities (i.e. issues at individual level).

Figure 1.1: Macroeconomics versus microeconomics



1.2.2 Positive versus Normative economics (Fact or opinion?)

Economists usually distinguish between normative statements (or value judgments) and positive (or factual) statements. A statement such as “Specialist in heart-lung transplants resigns from the national health system in protest at lack of funding” is a **positive statement**: it can be shown to be true or false and is not dependent upon the value system of the observer. In contrast, “Health care is a basic right and should be provided free” is a **normative statement**. It cannot be proved true or false: our view of it depends on our value system.

One of the things which make the debate over the provision of health care difficult to resolve is that positive and normative issues are very much intertwined. Sorting out fact from opinion is a

first step, but it does not explain why there are not enough beds in hospitals or why people might be refused treatment, for example.

Positive economics describes the facts and behavior in the economy. What percentages of teenagers are unemployed? How many people earn less than Ksh 120,000 a year? What will be the effect of higher cigarette taxes on the number of smokers? These are questions that can be resolved only by reference to facts; they are all the realm of positive economics.

Normative economics: involves ethics and value judgments. Should the government give money to poor people? Should the public sectors (government) or the private sector (business) provide extra jobs for unemployed teenagers? Should higher taxes or lower spending reduce the budget deficit? These are questions involving deeply held values or moral judgments. They can be argued about, but they can never be settled by science or by appeal to facts. There simply is no right or wrong answer to how high inflation should be, whether society should help poor people or how much the nation should spend on defense. These questions are best resolved by political decision, not by economic science.

1.3 SCARCITY, CHOICE AND OPPORTUNITY COST

As a student, you may sometimes face the problem of wanting more than what you can afford. This is known as the basic economic problem. You might have to postpone your plan of buying new things or not eating in your favourite restaurant in order for you to pay your tuition fees and buy text books. You may also need more time for studies, meeting friends or sleeping. Limited income and time force you to make choices on the best way to divide your income and time. It is the same with the society; they also have to choose from various feasible alternatives.

1.3.1 Problems of Scarcity

Individual and societal needs for consumer goods, capital goods and others are endless and unlimited. However, the ability to fulfill all the needs, that is, the goods and services able to be produced, is limited. This is caused by scarcity of resources needed to produce the particular goods. Scarcity problem emerges when our material needs exceed the ability to fulfill them due to limited resources.

The problems of scarcity can partly be resolved by:

- (a) fully utilizing all resources;
- (b) upgrading the capacity of resources and technology;
- (c) upgrading the administration efficiency for production and distribution;
- (d) redistributing goods or income among the members of the society

1.3.2 Choice and opportunity cost

As concluded from the definition of economics, two basic issues in economics are:

- (a) The need to make choices; and
- (b) Identifying the opportunity cost for making a specific choice.

Cost and benefit evaluation is the basis for making choices. In economics, cost and benefit evaluation is not an easy task because it requires accurate measurement. However, the concept of opportunity cost is suitable to be used as an accurate method of measuring cost and benefit in economics. The opportunity cost for carrying out a specific activity is the best benefit that had to be foregone for carrying out the particular activity. The foregone benefit is the benefit that could have been enjoyed if the best alternative was chosen. To pursue benefit from one best activity, we have to sacrifice the other alternative which is the next best alternative. All choices with alternatives involve opportunity cost.

Example:

You have been given a choice by your father whether to go for an overseas tour or to have a car as a prize for your success in obtaining first-class honours degree. You consider your options as you have always craved for both alternatives. If you choose to have an overseas tour, then the opportunity cost for the overseas tour is the value of a car. On the other hand, if you choose the car, the opportunity cost is the opportunity to go on an overseas tour.

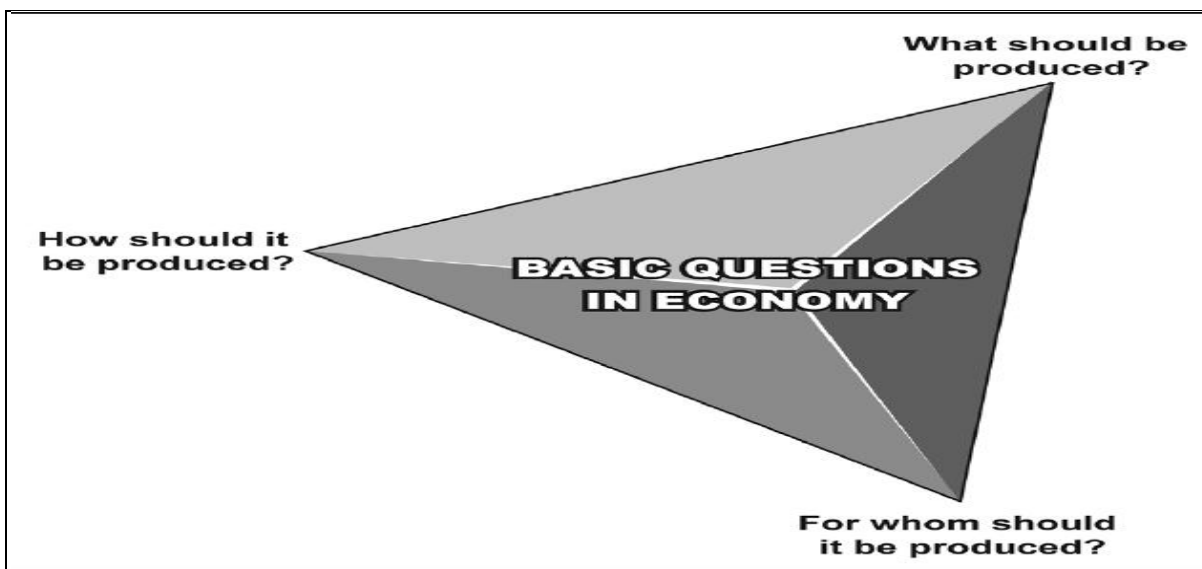
1.4 BASIC ECONOMIC QUESTIONS AND ECONOMIC SYSTEMS

The problem of resource scarcity forces the society to make choices. There are three basic questions to be answered in the process of making choices.

- (c) What Should be Produced?

- (d) How Should it be Produced?
- (e) For Whom Should it be Produced?

Figure 1.2: The Three Basic Questions in Economics



1.4.1 What should be produced?

The society needs to determine the types of goods and services to be produced using limited resources to maximize their satisfaction. The selected combination must be the efficient production combination. When the type of output required has been identified, the society has to determine the production amount for every output chosen. The indifference curve of the society indicates the relative importance for every product in the society's point of view. If the society chooses to produce more consumer goods, then the consumer goods for current use will give more satisfaction compared to the capital goods that can increase production in the future.

1.4.2 How should it be produced?

After deciding on the type and quantity of the output to be produced, then comes the question of how it should be produced. Here arises the need for a mechanism that can transfer resources from low-demand industry to the industry with higher demand. In free-market economy, this task is carried out by the market mechanism. Resources are distributed through the process of demand and supply. In this process, resources will shift into the industry that offers the highest pay. Meanwhile firms in the industry have to utilize resources efficiently to avoid wastage.

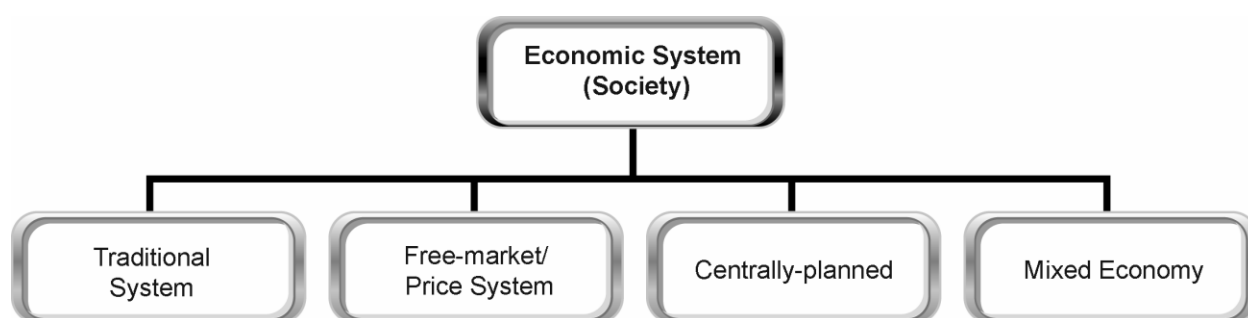
1.4.3 For whom should it be produced?

After being produced, goods and services have to be distributed. Consumer goods will be disseminated to consumers while capital goods to firms. A mechanism should be available for this purpose. In the free-market economy, this task is carried out by the price mechanism. All consumers and producers who can afford to buy the economic product at the stated market price will be able to obtain what they require.

1.5 ECONOMIC SYSTEMS

As stated earlier, society needs to answer three basic economic questions of what to be produced, how and for whom it should be produced. These questions are answered based on the economic system chosen by the particular society. Here we will look at the four basic economic systems. Even though most society may not be clearly included into any of the systems, we can categorize them depending on the main characteristics that they possess. Figure 1.3 shows the society's choice of four economic systems.

Figure 1.3: Economic Systems



1.5.1 Traditional system

This is the oldest and most influential system. The world's early civilizations are mostly characterized by this system. In today's modern economic system, it is almost unnoticed that the three basic economic questions are resolved based on the traditional system.

1.5.2 Free Market or Price System

Free market system or price system is a system where decisions are made based on market needs. Matters such as labour, land, goods and services, including time, have its own value or market

price. It is also through the market that decision to the three basic problems of economy is made: what, how and for whom. Even though there is no organization or central coordinator making these decisions, this system does not create chaos but becomes organized instead.

Society uses price as an indication to producers on what should be produced. Price competition ensures production to answer the question of “how” by using efficient production method to face competition. The question of “to whom” also can be resolved by price because those with money and willingness to spend are the ones who will acquire what they want.

The main characteristics of free market system are:

- (i) private ownership;
- (ii) self-interests;
- (iii) without government intervention; and
- (iv) price system

The advantage of free-market system is in terms of resource allocation. Free-market gives rise to efficiency of resource allocation because resources will be distributed to the sector that gives the highest evaluation towards resource.

Whereas the downside of it is that, it causes unequal distribution of wealth, since those who are unable to compete will be left behind. This system also hardly promotes the production of public goods because public goods do not maximize personal profit.

1.5.3 Centrally-planned System

In the centrally-planned economic system, the answers to the three basic economic questions are done by the central planning coordinator. All economic and social activities of the people are controlled and regulated by the particular body.

The main characteristics of this system are:

- (i) Property Ownership by the Government

All economic resources such as land, natural resources and public facilities like transportation, industrial communication and bank system are owned by the government.

(ii) Centrally-planned Economy

All economic plans are determined by the government to ensure mutual well-being. Planning will determine what will be produced by the economy, how production will be carried out and ensuring equality of distribution.

(iii) Limited Freedom

Producers do not have the freedom in choosing goods and services to be produced because the use of resources controlled by the government has been determined. However, consumers are free to choose products and services that have been produced.

1.5.4 Mixed Economy System

Mixed economy system is commonly practiced by most countries today. However, the level of mixture varies depending on the level of government intervention in the economic system. Even though the Kenya is considered as a free-market country or capitalism, the government also has its own roles due to the existence of tax and social welfare systems.

The purpose of government intervention in economic system is to patch up weaknesses of the free-market system. The government applies directive power and rules such as collecting tax and providing subsidies. The same applies with the production of public goods that are less appealing to private bodies such as electricity supply, water supply and transportation. Besides that, the government also plays a role in stabilization and economic growth.

1.6 CIRCULAR FLOW OF INCOME AND EXPENDITURE

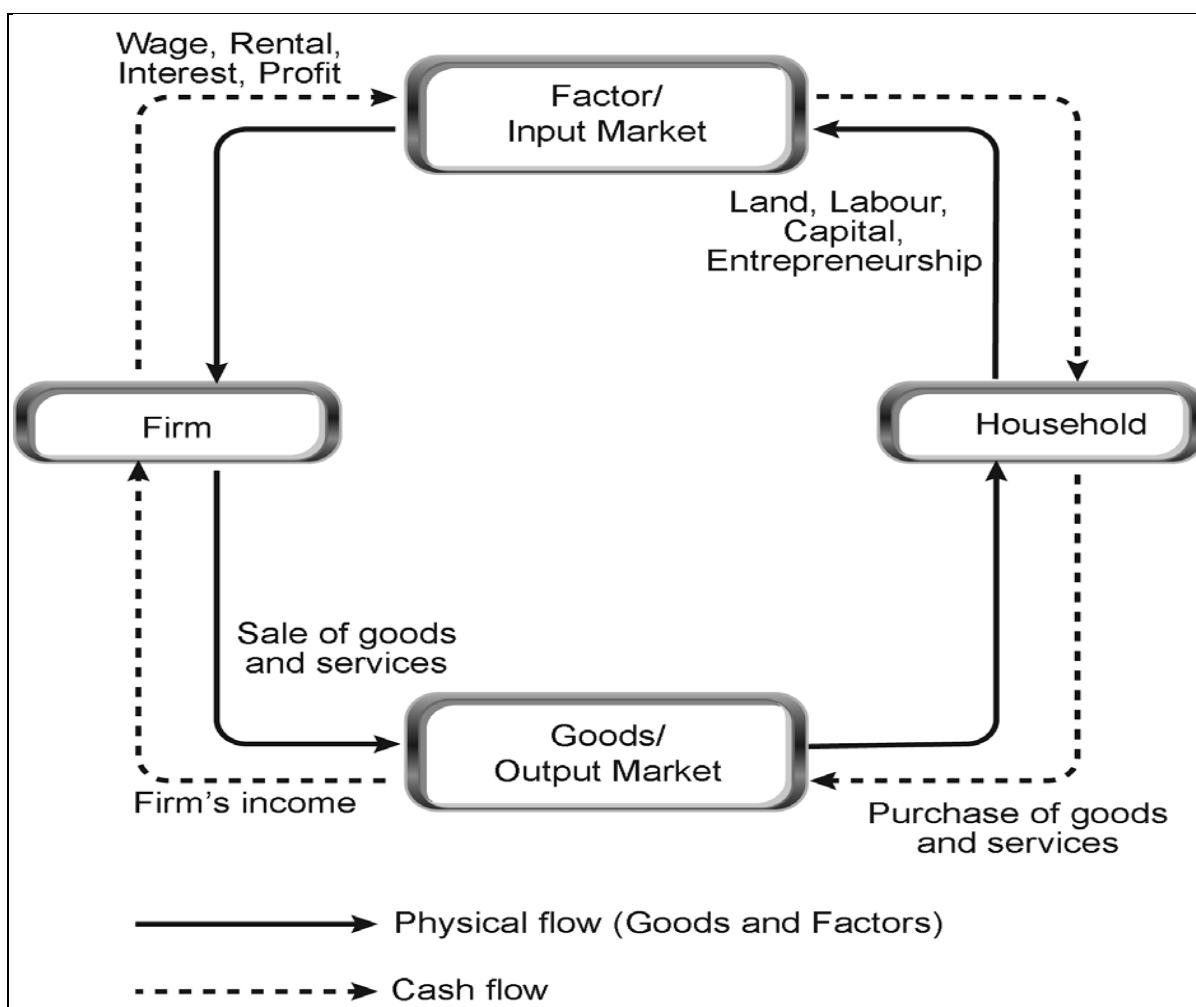
In market economy, the society is divided into two main groups - the consumers and producers. Recall the definition of “economy” as a group of people having unlimited wants and needs while producers are the group that utilizes limited resources in the production process in order to fulfill those unlimited needs. However, both groups are not separate entities since a consumer may be a producer at the same time and vice-versa.

The concept of consumers and producers are related to the circular flow of utilization that is, the utilization of end products and the utilization of resources. On the other hand, in the circular flow

of income, household is classified as resource supplier and firms as the supplier of consumer goods. Households will earn income from the sales of resources such as labour, land and capital to firms and use their earnings to buy goods and services produced by the firms. While firms will use the earnings from the sale of goods and services to pay for the resources utilized. Figure 1.4 depicts both the circular flow.

In a nutshell, households make two main decisions. Firstly in determining the total amount of production factor owned that will be sold in the factors market to earn income, and secondly, determining the quantity of goods and services that will be bought using the earnings. Firms instead, will make decision on the goods and services to be produced and determine the amount of inputs that will be bought from household.

Figure 1.4: Circular flow of income and expenditure



SUMMARY

- Economics is a study of how individuals and society distribute limited resources to fulfil unlimited wants. Economic research focuses on choices made by the society.
- Choices have to be made as a result of the problem of scarcity. Thus, choices involve opportunity cost. Opportunity cost is the value of the best alternative foregone.
- Problem of scarcity arises because of limited resources and insatiable wants and needs. Thus, emerges the questions of what should be produced, how the production process is being carried out and who will obtain the goods. These three questions are resolved based on the economic system chosen by the society.
- Economics consists of micro and macro branches. Microeconomics involves the study towards individual units while macroeconomics views the economy as an aggregate.
- There are four main types of economic system; the traditional system, free market system, centrally-planned system and mixed economy system. However, most economies are based on the mixed economy system due to the intervening roles of the government.

CHAPTER TWO



DEMAND, SUPPLY, MARKET EQUILIBRIUM AND ELASTICITY

LEARNING OBJECTIVES

At the end of this chapter, you should be able to:

1. State the law of demand and supply;
2. Draw and interpret demand and supply curves;
3. Identify demand and supply determinants;
4. Differentiate between the shifts of demand and supply curve with the movement along a particular curve.
5. Demonstrate how equilibrium quantity and price is achieved using diagrams;
6. Explain elasticity of demand and supply;

2.1 INTRODUCTION

In a free market economy, there is no central body responsible for making decisions on production and utilization. Instead, each individual has the freedom in making purchase decision that can provide maximum satisfaction, and producers have the freedom to sell based on the needs to maximize profit. The concept of demand and supply is the basic concept in market economy. The price system will determine how resources, products, and services are distributed. Distribution is made based on wants and the ability to pay. Anyone who has wants and is willing to pay will obtain what is required.

2.2 THE DEMAND CURVE

The relationship between price and quantity demanded allows us to define demand as the quantity of a good or service that buyers are willing and able to buy at every conceivable price. It is commonly observed that the quantity of a commodity that people will buy at any one time depends on its price. The higher the price charged for an article, the less of it people will be

willing to buy; and other things remaining equal, the lower its market price, the more units will be demanded.

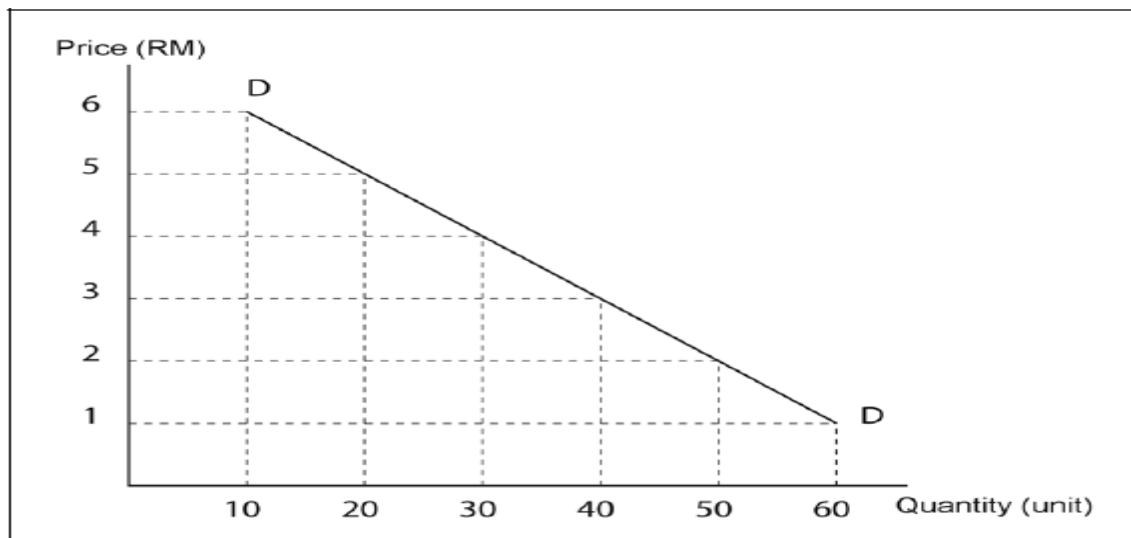
2.2.1 The law of demand

A downward sloping demand curve indicates an inverse relation between demand quantity and price level. When price increases, demand quantity decreases, and when price decreases, demand quantity increases. This inverse relationship is referred to as the Law of Demand. Table 2.1 below presents a demand schedule and Figure 2.1 illustrates the negative relationship between price and quantity demanded.

Table 2.1: Demand Schedule

Price (Ksh)	Demanded Quantity (Unit)
1	60
2	50
3	40
4	30
5	20
6	10

Figure 2.1: Demand curve



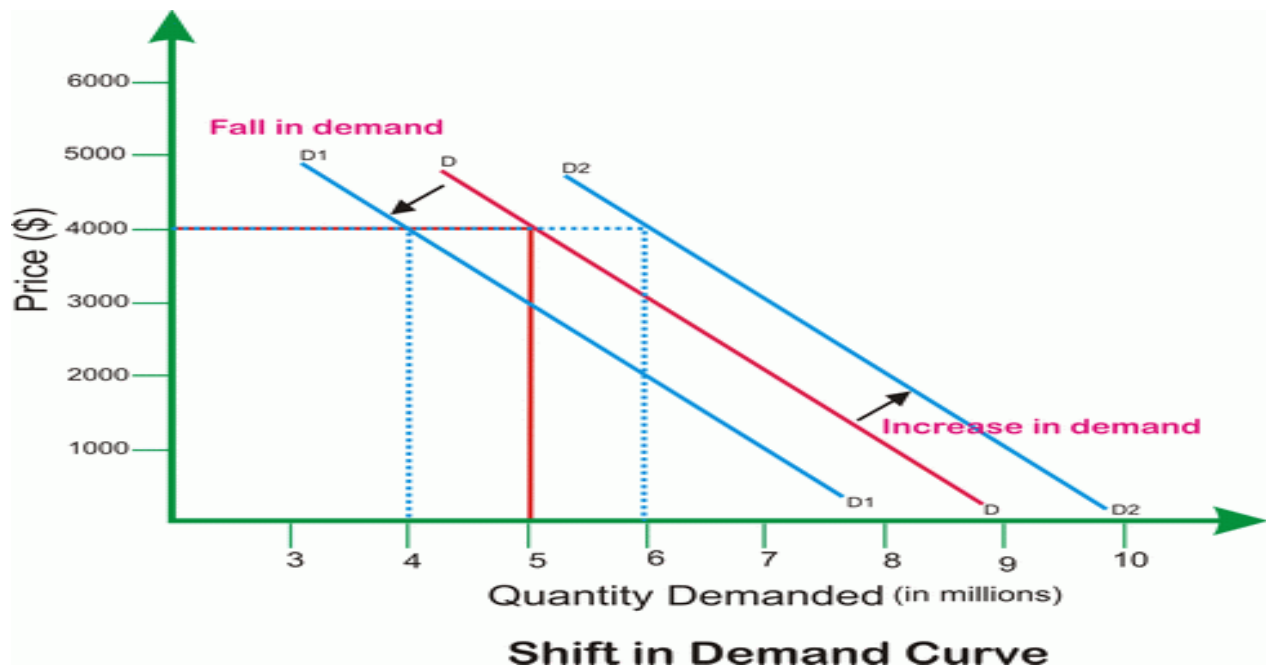
2.2.2 Movements along and shifts of a demand curve

Apart from the price of a given commodity there are a number other factors affecting the demand for that commodity, average levels of income, the size of the population, the prices and availability of related goods, individual tastes and other special factors.

Movements along the demand curve are due to a change in the price of a good, holding constant other variables. If the price of a good or service changes the consumer will adjust the quantity demanded based on the preferences, income and prices of other factors embedded within a given curve for the time period under consideration. Movement along the demand curve therefore indicates the changes of demanded quantity caused by the good's own price change.

Shifts in the demand curve are related to non-price events that include income, preferences and the price of substitutes and complements. An increase in income will cause an outward shift in demand (to the right) if the good or service assessed is a normal good or a good that is desirable and is therefore positively correlated with income. Alternatively, an increase in income could result in an inward shift of demand (to the left) if the good or service assessed is an inferior good or a good that is not desirable but is acceptable when the consumer is constrained by income.

Figure 2.2: Shifts in Demand Curve



Demand curves shift inwards from DD to D1 D1 as a result of:

1. A fall in income
2. A fall in preferences
3. A fall in price of substitute
4. A rise in price of complement

Demand curve shifts outwards from DD to D2 D2 as a result of:

1. A rise in income
2. An increase in preferences
3. A rise in price of substitute
4. A fall in price of complement

2.2.3 Demand Determinants

Income: The average income of consumers is a key determinant of demand. As people's incomes rise, they tend to buy more of almost everything.

The size of the market- measured, say, by population clearly affects the amount demanded at each price

Price of related goods: The price and availability of related goods will influence the demand for the commodity. A particularly important relationship exists among substitute goods-ones which tend to perform the same function, such as pens and pencils, cotton and wool or oil and natural gas. Demand for product 'A' tends to be low if the price of substitute product 'B' is also low.

Subjective factors: These include factors such as tastes or preferences

2.3 THE SUPPLY CURVE

Supply can be defined as table or curve that relates various quantities of goods to be sold at a certain time at various price levels, while other variables remain unchanged. We relate the quantity supplied of a commodity to its market price, holding other things to be equal, such as the cost of production, the price of substitute goods and the organization of the market. The supply schedule of a commodity refers to the relationship between its market price and the amount of that commodity that producers are willing to produce and sell. The supply curve slopes upward and to the right.

2.3.1 Law of Supply

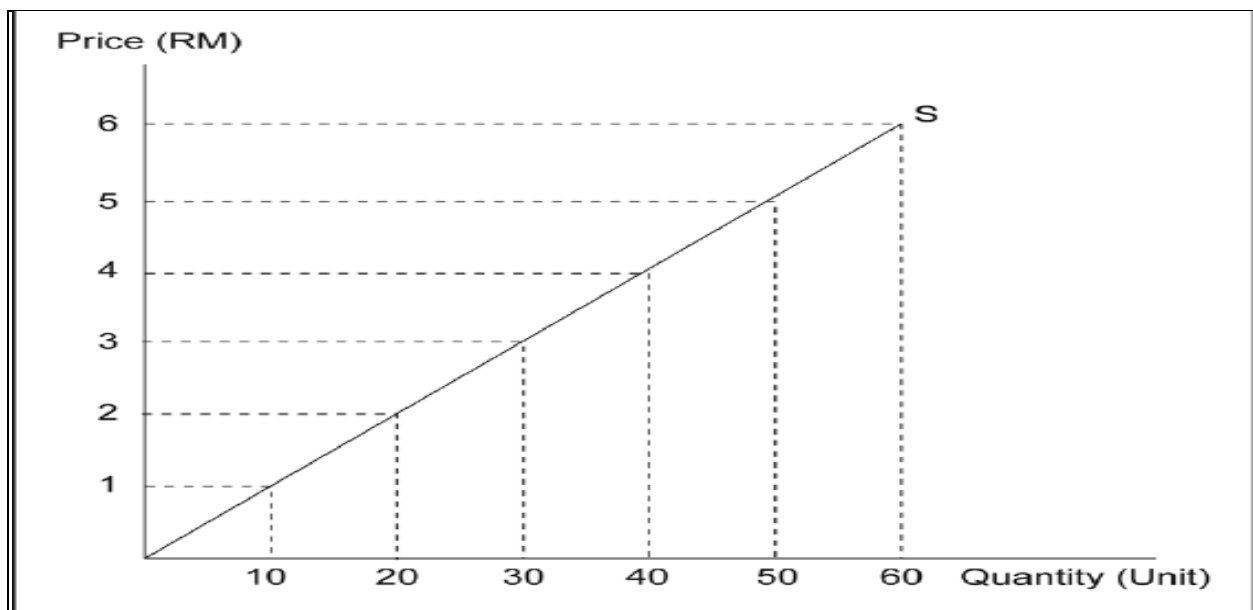
If you are a seller or a producer of a commodity, you may earn a higher profit if selling price increases, and the opposite if the price decreases. Therefore, the quantity of goods you sell will increase with the increase in price and the contrary if the price decreases. The positive relationship between price and supply quantity is known as the **Law of Supply**.

Table 2.2 below presents a supply schedule and figure 2.3 illustrates the positive relationship between price and quantity supplied.

Table 2.2: Supply Schedule

Price (RM)	Quantity Supplied (Unit)
1	10
2	20
3	30
4	40
5	50
6	60

Figure 2.3: Supply curve

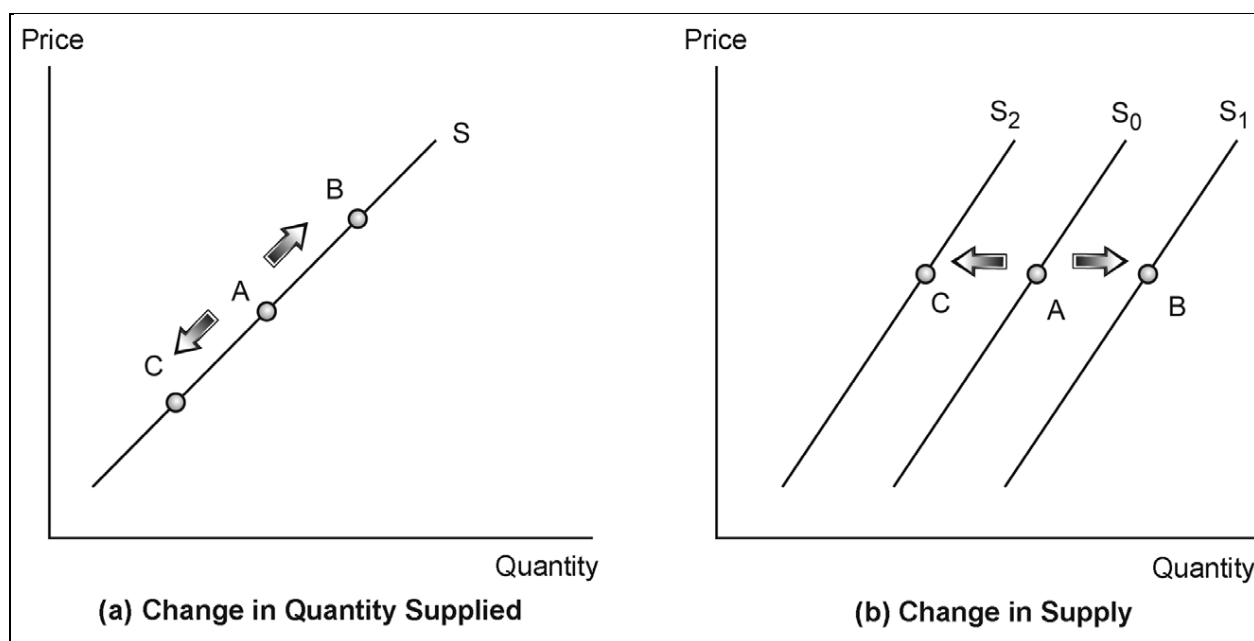


2.3.2 Movements along and shifts of a supply curve

Change in quantity supplied occurs when there is a change in the price of the goods itself. Price of goods positively influences quantity supplied. Increase in price will increase the quantity supplied, and vice-versa. Change in goods supplied triggered by change in price will show movement along the same supply curve.

Shifts of the supply curve are caused by changes in supply determinants. The determinants include production cost, predictions and price of other goods. Figure 2.4 show movement along and shifts of a supply curve.

Figure 2.4: Movement along the curve and shifts in supply



2.2.3 Supply Determinants

Cost of production: When the cost of production of a particular commodity is low relative to the market price, then it will be profitable for producers to produce a great deal. When production costs are very high relative to price producers will produce little or may quit production altogether. Among the forces affecting production costs are technology and input cost. Technological advances will certainly affect costs.

Prices of production of substitutes: these goods are ones that can be readily substituted for one another in the production process. If the price of one production substitute rises, this will decrease the supply of the other substitute. Farmers can produce wheat as well as corn; when the price of corn raises many farmers are attracted towards the production of corn and tend to produce more corn and less wheat, since the inputs that may be used for wheat production are shifted to the production of corn.

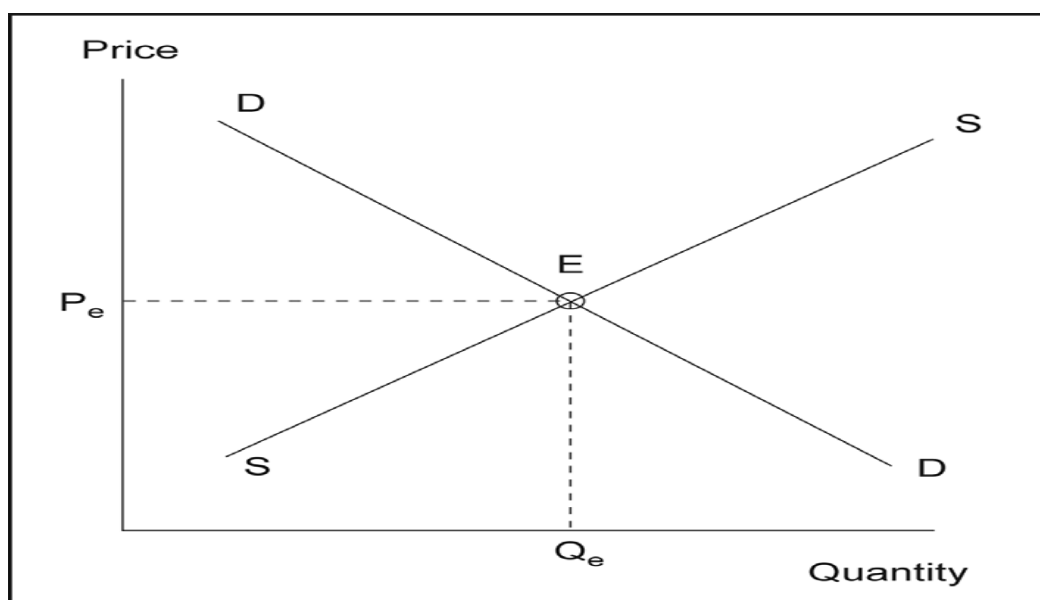
Market organization: If a market becomes monopolized this would tend to raise the price at each level of output.

2.4 MARKET EQUILIBRIUM

The term equilibrium is used in economics to explain a condition when all variables have reached an established position with no tendency to change any further. Equilibrium change will only happen if there is change in other influence or determinants.

The point of intersection between the demand and supply curves is the market equilibrium point. At the point of market equilibrium, the need of buyers is equal to the need of sellers, that is, quantity demanded is equal to quantity supplied at a certain price level. The particular quantity and price are known as equilibrium quantity and equilibrium price.

Figure 2.5: Market equilibrium



Excess in demand is referred to shortage, while excess in supply is known as surplus. Shortage occurs when quantity demanded exceeds quantity supplied at a certain price level. Surplus occurs when quantity supplied exceeds quantity demanded at a certain price level. Hence, equilibrium will be achieved when there is no shortage or surplus.

2.5 ELASTICITY

Elasticity provides a way of measuring how sensitive demand or supply is to factors such as a change in price. Take the relationship between price and quantity demanded. We know that if price rises, then people will buy less, but we do not know how much less. Price elasticity of demand allows us to calculate this.

2.5.1 Elasticity of demand

Elasticity of demand measures the degree of responsiveness of demand to the changes in its determinants. The formula for elasticity is given by:-

$$\text{Elasticity} = \frac{\text{Percentage change in Quantity}}{\text{Percentage change in Price}}$$

Demand can be elastic, inelastic or unit elastic. If Elasticity > 1 then Demand is elastic – implying that a one percent increase in Price will lead to >1 percent decrease in quantity demanded and vice versa; If < 1, then its inelastic and if =1, it's unit elastic.

Features of price elasticity of demand

Feature	Elastic	inelastic
A rise in price means	A large fall in demand	A smaller fall in demand
No of substitutes	Many	Few
Type of good	Luxury	necessity
Price of good	Expensive	cheap
Example	holiday	Food items

The concepts of demand elasticity used in economics are :-

1. Price-elasticity of demand
2. Cross-elasticity of demand
3. Income-elasticity of demand

1. Price elasticity of demand

Price elasticity of demand is generally defined as the responsiveness or sensitiveness of demand for a commodity to changes in its price. More precisely, elasticity of demand is the percentage change in demand for a commodity due to a one percent change in one of the independent variables. The price-elasticity of demand for a product is thus the percentage change in the quantity demanded that results from a one percent change in its price. The formula for price elasticity of demand (PED) is:-

$$\text{Elasticity} = \frac{\text{Percentage change in Quantity Demanded}}{\text{Percentage change in price of the good}}$$

For example, if the price of eye tests fell by 20% and the quantity of eye tests bought rose by 30% then, the value of PED would be $+30\%/-20\% = -1.5$. In this case, the demand for eye tests is **price elastic**, i.e. sensitive to changes in price.

2. Income elasticity

The concept of elasticity can be applied to the impact of both income and changes in the prices of other goods on quantity demanded. Income elasticity of demand (YED) measures how demand reacts to changes in income. The formula for income elasticity of demand is:

$$\text{Elasticity} = \frac{\text{Percentage change in Quantity Demanded}}{\text{Percentage change in income}}$$

If the result is positive, then the goods are normal, if it is negative then they are inferior. All the evidence suggests that health care is not only a normal good, but that it is income elastic, i.e. rising income leads to a greater % rise in demand for health care. Income-elasticity of demand is

always positive because of a positive relationship between income and quantity of product demanded.

3. Cross price elasticity of demand (XED)

Cross price elasticity of demand measures how demand reacts to changes in the price of other goods. The formula for Cross price elasticity of Demand is:-

$$\text{Elasticity} = \frac{\text{Percentage change in Quantity Demanded}}{\text{Percentage change in price of other good}}$$

If cross price elasticity of demand is positive then this indicates that the goods are **substitutes**. If it is negative, then the goods are **complements**.

2.5.2 Price elasticity of supply (PES)

Price elasticity of supply measures how sensitive quantity supplied is to a change in the price of the good. The formula for price elasticity of supply is:

$$PES = \frac{\text{Percentage change in quantity supplied}}{\text{Percentage change in price of the good}}$$

Price elasticity of supply is always positive, reflecting the positive relationship between price and quantity supplied. PES becomes more elastic over time. This reflects the time it takes to switch resources into a market. For instance, in health care the PES is likely to be fairly inelastic in the short run, but much more elastic in the long run. Even if price rises significantly, it will take time for firms to react and to produce more health care. For instance, to deliver more health care new hospitals will need to be built or existing hospital extended and extra doctors and nurses will need to be trained. All of this takes time.

CHAPTER THREE



UTILITY ANALYSIS

LEARNING OBJECTIVES

At the end of this chapter, the student should be able to:

1. Define the concept of utility;
2. Differentiate between cardinal utility and ordinal utility;
3. Explain the concept of total utility, marginal utility and rule of consumer equilibrium;
4. Describe the concept of indifference curve

3.1 INTRODUCTION

The theory of consumer behaviour is crucial in the market economy because producers who compete with each other to attract consumers to buy their products need to know the motives underlying consumers' demand. In addition, the theory of consumer behaviour will further analyze the consumption motives, consumer behaviour and decision making process of consumers.

3.2 WHAT IS UTILITY?

Utility is the satisfaction gained by consumers from consumption of goods and services. It can also be defined as the ability of a good to provide satisfaction to its consumer. According to the theory of utility, consumers use satisfaction level as the basis to make consumption choices and evaluate goods based on satisfaction. Basically, there are two approaches of utility theory analysis namely, the **cardinal approach** and **ordinal approach**. **Cardinal approach** assumes that utility can be measured with utility as the unit of measurement while the **ordinal approach** assumes that level of satisfaction is determined by means of comparison only.

3.3 CARDINAL UTILITY THEORY

Cardinal utility theory is a method which assumes that **satisfaction can be measured** using the unit of 'util'. For instance, eating a piece of cake will give 8 utils, while eating biscuits will only give 4 utils. This reflects that a cake gives two-times the utility compared to biscuits. Utility level is normally reflected by the willingness of a person to pay based on the value of money. The higher the price willing to be paid, the higher the level of satisfaction gained.

There are two basic concepts of utility, namely, **total utility and marginal utility**. **Total Utility (TU)** is the **total satisfaction gained from a given level of consumption** of a good. **Marginal utility (MU)** is the **increase in total utility when consumption increases by 1 unit**. The formula for marginal utility is as follows:

$$MU = \frac{\text{Change in } TU}{\text{Change in } Q}$$

Table 3.1 shows the relationship between the consumption of goods with total utility and marginal utility. Observe that total utility for the first unit is 10 utils. When consumption level is increased to 2 units, total utility increases to 22 utils, and so on. MU for the first unit is 10 utils while for the second unit is 12 or (22 - 10) utils, and so on.

Table 3.1: Total Utility and Marginal Utility

Quantity (Q)	Total Utility (TU)	Marginal Utility (MU)
1	10	10
2	22	12
3	30	8
4	36	6
5	38	2
6	38	0

When we sum up marginal utility up to 5 consumption levels, we will obtain 38 utils, that is, equivalent to the total utility of the unit.

Figure 3.1: Total utility and marginal utility

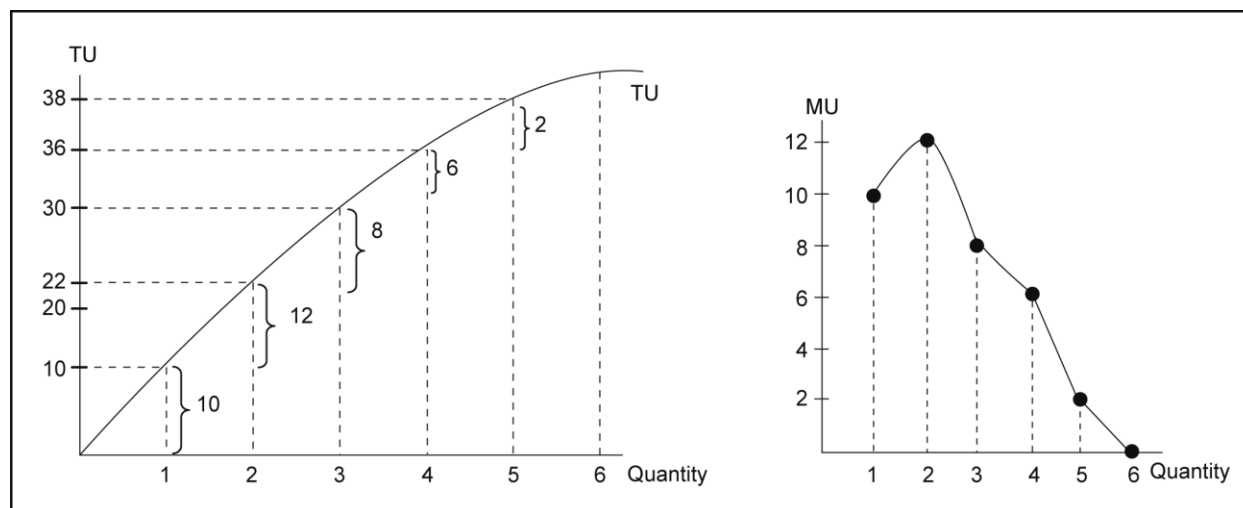


Figure 3.1 is the illustration of total utility and marginal utility derived from Table 3.1. Observe that marginal utility is equivalent to the gradient of total utility at each unit of consumption. Total utility reaches maximum when marginal utility is zero.

3.3.1 The Law of Diminishing Marginal Utility

Recall we defined marginal utility as an increase in satisfaction gained from consumption of one additional unit of good. We have seen from Table 3.1 and Figure 3.1 that marginal utility shows small increase in the beginning but later decreases until it reaches zero. This condition is referred to as diminishing marginal utility. **The law of diminishing marginal utility means that the marginal utility obtained from the consumption of additional unit will start to decrease after a certain level of consumption when the amount consumed increases.**

For example:

When you are so thirsty on a hot day, a glass of cold water might give a certain amount of satisfaction. Since you are still thirsty, a second glass will give higher satisfaction increase than the first. But the third glass will give a decreasing additional satisfaction because you are becoming less thirsty. From Table 3.1, marginal utility is starting to decrease by the consumption of the third unit. You might achieve a negative marginal utility when consumption no longer gives satisfaction but discomfort.

If we measure satisfaction in terms of shillings, then the marginal utility, MUs, for a glass of cold water is the sum of shillings you are willing to pay to get that drink. Therefore, when marginal utility decreases, your willingness to pay for an extra glass also decreases. If MU becomes negative, then somebody else will have to pay for you in order to encourage you to drink. The concept of diminishing marginal utility gives the reason why individuals have various goods in their shopping carts.

3.3.2 Consumer Equilibrium

As a rational consumer, you will maximize your satisfaction from consumption. However, from the definition of demand, we know that wants must be in balance with the ability to pay. Therefore, in maximizing utility, consumers are restricted by limited income and price of goods. Consumers are said to have achieved equilibrium when maximum utility can be attained with a certain sum of expenditure or income.

(a) Consumption Equilibrium for One Good

We can gain maximum utility from limited income is by measuring it in monetary value. Measured this way, marginal utility then becomes the sum of money a consumer is willing to pay to obtain one additional unit of good. If you are willing to pay Kshs 50 for an additional cup of coffee, then the cup has $MU = \text{Kshs } 50$. In this case, consumer will maximize satisfaction when marginal utility from the consumption of the good is equivalent to price.

Satisfaction/utility is therefore **maximized when price is equivalent to marginal utility** because marginal utility indicates the willingness to pay. Therefore, if marginal utility obtained from the consumption of an additional unit is much higher than the price that needs to be paid, consumers will still be able to increase satisfaction with additional purchases.

In the example of the glass of cold water mentioned before, assume that the first glass costs Kshs 30, but since you are evaluating it at more than Kshs 30, you are definitely willing to buy it. The same goes for the second glass. But for the third glass, if the price does not change at Kshs 30, you will not want to buy it because the value you place for that glass is less than Kshs 30.

This equilibrium concept actually describes why demand curve has a negative gradient. Value or the willingness you dedicate for the following unit becomes lower when you obtain more units. Along the demand curve, marginal utility is equivalent to price ($MU = P$), where consumers are at an optimum condition.

Table 3.2: Utility and Price

Quantity (Q)	Total Utility (TU)	Marginal Utility (MU)	Price (Kshs)
1	10	10	10
2	22	12	10
3	32	10	10
4	40	8	10
5	46	6	10
6	44	-2	10

Table 3.2 shows total utility, marginal utility and price for good X. From the table, consumers achieved equilibrium at the third unit, that is, when marginal utility is equal to price ($MU = P$).

What if you can obtain the particular good free-of-charge? When a good is free-of-charge, there are no more budget constraints and you are not restricted by the willingness to pay. Therefore, you will use the good until total utility is maximized at the fifth unit. The sixth unit will not be considered because it decreases the total utility. If you purchase the sixth unit, you will feel uncomfortable or reluctant due to excessive consumption.

(b) Consumer Equilibrium for Two Goods

Assume that you have a sum of income (I) to be divided for the purchase of food (X) and text books (Y). As a rational consumer, you will spend all the money to choose a combination where marginal utility per shilling for both goods are the same, that is:

$$\frac{MU_X}{P_X} = \frac{MU_Y}{P_Y}, \text{ where } MU = \text{Marginal utility, } P = \text{price}$$

If $\frac{MU_X}{P_X} > \frac{MU_Y}{P_Y}$, a rational consumer will increase consumption of good X because for every shilling spent, consumer will obtain additional satisfaction (that is, marginal utility) that is bigger. At the same time, consumer will reduce the consumption of good Y. Increase in demand of good X will cause price of X (PX) to increase and $\frac{MU_X}{P_X}$ becomes smaller. At the same time, $\frac{MU_Y}{P_Y}$ becomes larger due to decline in demand of good Y. This condition will prolong until $\frac{MU_X}{P_X} = \frac{MU_Y}{P_Y}$. In this condition, consumer is not inclined to change the combination of goods.

Example

Table 3.3: Marginal Utility Per Shilling

Quantity	MU _X	MU _X /P _X	MU _Y	MU _Y /P _Y
1	30	15	20	10
2	29	14.5	19	9.5
3	28	14	18	9
4	26	13	16	8
5	24	12	14	7
6	22	11	12	6
7	20	10	10	5
8	18	9	8	4
9	16	8	5	2.5

Table 3.3 shows the marginal utility (that is, MU_X and MU_Y) and marginal utility per Shilling (that is, MU_X/P_X, and MU_Y/P_Y) obtained by a consumer for the consumption of two goods (X and Y), when price X and Y are Ksh 2 respectively (P_X = 2, P_Y = 2). It is assumed that the consumer's income of Ksh 22 is only spent for these two goods.

The rule $\frac{MU_x}{P_x} = \frac{MU_y}{P_y}$ is achieved at the combination of (X,Y) = (7,1), (8,3) or (9,4).

However, selection must be made based on the total expenditure allocated (that is Kshs 22). Hence, the total expenditure needed for the three combinations is.

$$A = (7,1) = (7 \times 2) + (1 \times 2) = 16$$

$$B = (8,3) = (8 \times 2) + (3 \times 2) = 22$$

$$C = (9,4) = (9 \times 2) + (4 \times 2) = 26$$

Since combination B meets the rule of expenditure, combination B is the equilibrium combination.

(c) Consumer Equilibrium for more than Two Goods

When consumption involves more than two goods, we still apply the same rule. To achieve equilibrium for 3 goods, namely X, Y, and Z, the rule is:-

$$\frac{MU_x}{P_x} = \frac{MU_y}{P_y} = \frac{MU_z}{P_z}$$

If 'n' types of goods are consumed, equilibrium is achieved when:-

$$\frac{MU_1}{P_1} = \frac{MU_2}{P_2} = \dots = \frac{MU_n}{P_n}$$

3.4 ORDINAL UTILITY THEORY

According to the ordinal utility theory, the benefit or satisfaction gained by consumers cannot be measured in quantitative form, but in terms of comparison to the consumption of other goods. Consumer behavior in maximizing satisfaction is depicted by indifference curve. This approach

also stresses on comparison with consumption of other goods to determine the level of satisfaction.

3.4.1 Indifference Curve

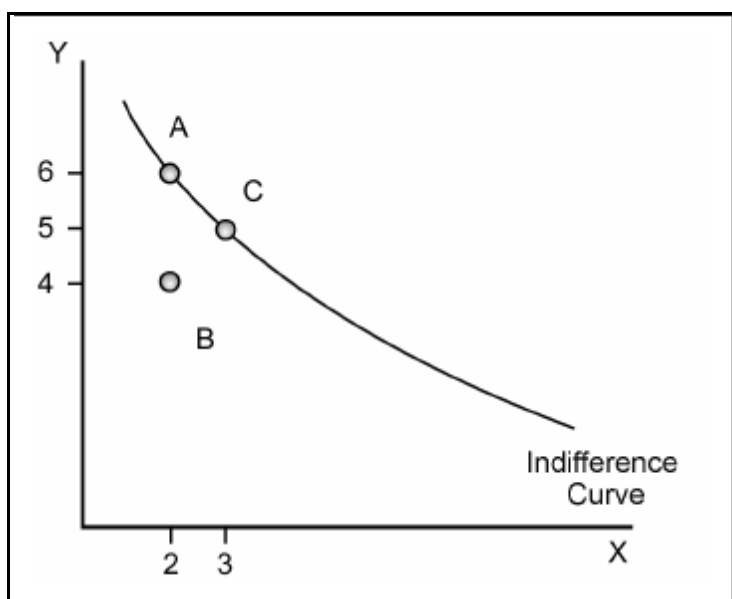
When choice involves only two goods, that is, good X and good Y, indifference curve will show various combinations of good X and good Y that can give equal satisfaction to the consumer. Assume that you seek out the help of a friend to choose his preferred combination of the two combinations of good X and good Y.

Combination A = 2 units of X + 6 units of Y

Combination B = 2 units of X + 4 units of Y

Your friend will definitely choose combination A because although the quantity of X is the same in both combinations, combination A has more of good Y. If we assume that combination A is chosen, then we know that any other combination with more of good X or Y or more of both goods, will definitely be preferred than combination A. On the other hand, combination with less of X or Y or less of both, will be less preferred compared to A. Figure 3.2 illustrates the choices.

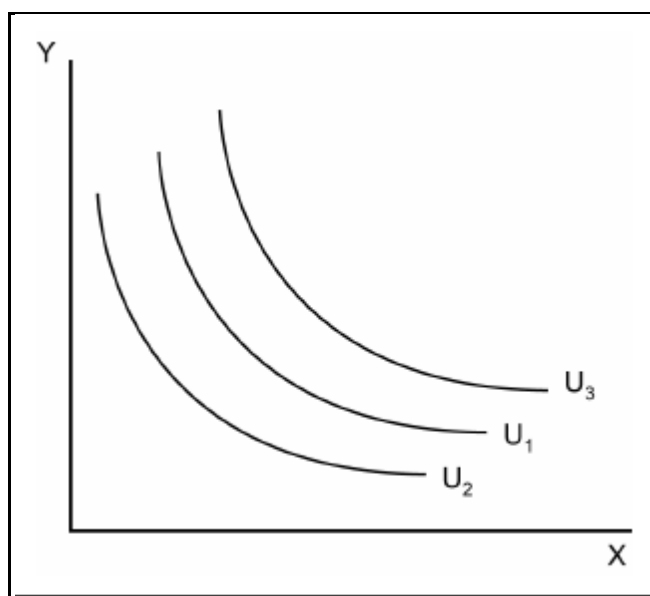
Figure 3.2: Indifference curve



What if the choices involve combination C with 3 units of X and 5 units of Y? Even though the quantity of Y in combination C is less compared to combination A, quantity X is larger. Your friend may not be able to make a choice because he may feel that both combinations (A and C) can give equal satisfaction.

When you are able to identify all the combinations that can provide equal level of satisfaction and connect those combinations together, then we will obtain an indifference curve. Further, if you are able to identify other combinations that can give higher or lower level of satisfaction and build the particular curve, you have already formed an indifference map.

Figure 3.3: Indifference map



An indifference map consists of a series or groups of indifference curves showing various levels of satisfaction of consumers. The higher the indifference curve is from the origin, then the higher the level of satisfaction is. For example, curve U₃ in Figure 3.3 gives a higher level of satisfaction compared to curve U₂ and U₁. The same goes for curve U₁, the satisfaction gained is much higher than curve U₂, but lower than curve U₃.

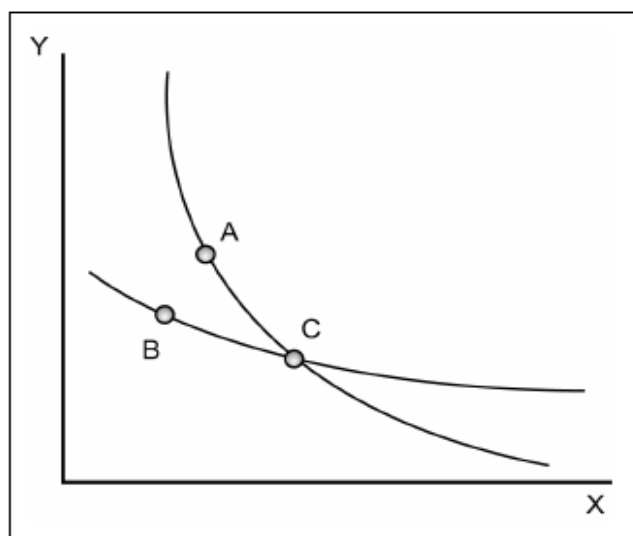
(a) Assumptions

The assumptions that we will use to ensure an accurate consumer analysis are:

- i) Every combination of goods must be on the same indifference curve.

- ii) Indifference curve has a negative gradient because you must obtain more of good X if you give up a part of good Y to ensure satisfaction remains unchanged.
- iii) Higher indifference curve is more preferred because it represents a bigger consumption cart.
- iv) It is not possible for an indifference curve to intersect, because if it does, it contravenes the assumption that consumers are rational. For a rational consumer, if A is more preferred than B, and if B is more preferred than C, then A is more preferred than C. According to Figure 3.4, we see that $A > B$, $B = C$, but $A = C$ and $A \neq B$. Hence, indifference curve cannot intersect.

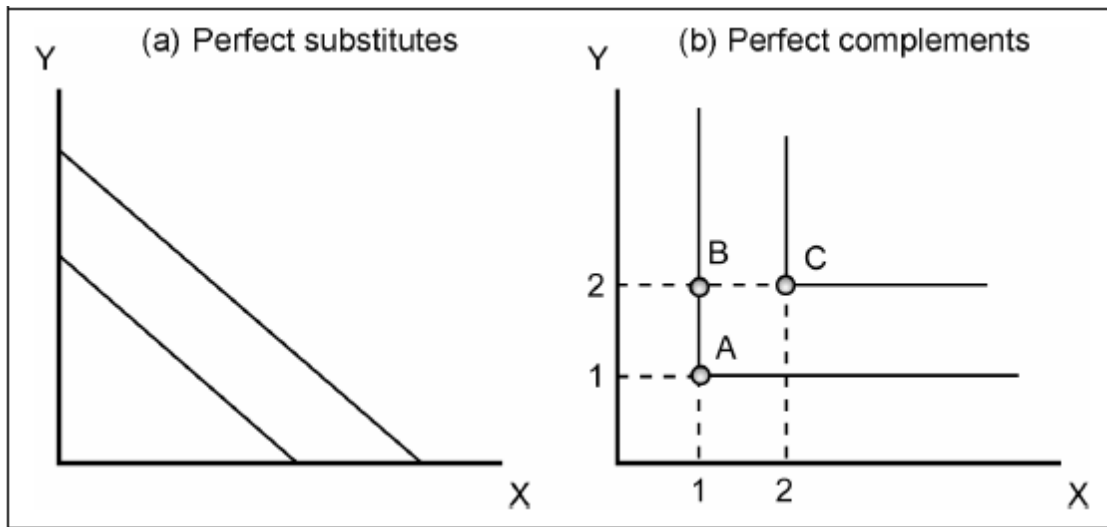
Figure 3.4: Indifference curve is non-crossing



Indifference curves normally used in analyses are convex in shape. However, there are some exceptions. For example, for two goods that are perfect substitutes, indifference curve is linear, as in Figure 3.5(a). A linear indifference curve indicates that the consumer does not mind whether he consumes only good X or good Y or any other combinations because both will give the same level of satisfaction.

Figure 3.5(b) shows the indifference curve for goods that are perfect complements. For example, if you already have a pair of shoes (at point A), an addition of the right pair of shoes (Y) only will not increase satisfaction (point B), because the complement is missing. Satisfaction will only be increased when you have both right and left pair of shoes (point D).

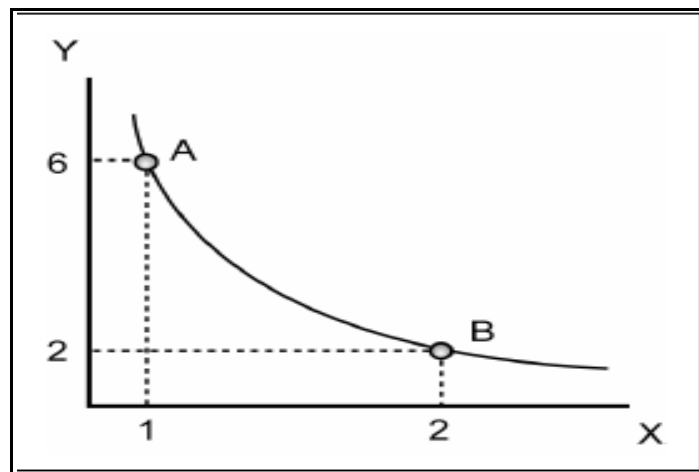
Figure 3.5: Indifference curves for perfect substitutes and perfect complements



(b) Marginal Rate of Substitution

The gradient of the indifference curve is obtained from $-(\Delta Y / \Delta X)$. The gradient of the indifference curve (in example = - 4) is referred to as marginal rate of substitution of Y for X [MRS_{XY} = $-(\Delta Y / \Delta X)$]. This gradient indicates the rate where the consumer is willing to give up Y to obtain an additional unit of X and utility remains unchanged. Since an indifference curve has a negative gradient, we will definitely obtain a negative value; however, the negative sign is ignored.

Figure 3.6: Marginal rate of substitution



Diminishing marginal rate of substitution is related to the law of diminishing marginal utility that we have discussed earlier. Individuals will obtain diminishing satisfaction from every addition of consumption units. Therefore, when we move downward along the indifference curve, consumption of X increases while consumption of Y decreases, hence, marginal utility of X decreases and marginal utility of Y increases. Willingness to give up Y for every additional unit of X becomes lesser and MRS_{XY} will decrease further. In short, MRS depends on the consumption level of consumers, the lower the rate of good consumption; the harder it is to be substituted with other goods.

Let us look back at Figure 3.6. Consumption at point A gives equal satisfaction with consumption at point B. Therefore, the drop in satisfaction caused by the 4 units decrease of Y must be balanced with the addition of satisfaction gained from one additional unit of X. Marginal utility from one additional unit of X must be 4 times bigger than the marginal utility of one unit of Y sacrificed (because consumer had given up 4 units of Y).

Hence
$$\frac{MU_X}{MU_Y} = MRS_{XY} = 4$$

CHAPTER FOUR



THEORY OF PRODUCTION AND COSTS

LEARNING OBJECTIVES

At the end of this chapter, you should be able to:

- 1) Explain the concept of production, plant, firm and industry;
- 2) Differentiate the concept of long-run and short-run in production;
- 3) State the concept of diminishing marginal returns;
- 4) Define several concepts of economic costs;

4.1 INTRODUCTION

Recall that there are two main sectors in the circular flow of income namely the household sector and the firm sector. In the previous chapters, we discussed about the household sector, touching on the theory of consumer behavior. The theory of consumer behavior explains the behaviour of rational consumers who make decisions based on consideration of cost (price), and benefit (utility). In this chapter, we will look at the rationale that underlies the behavior of producers that influences the theory of supply.

4.2 PRODUCTION PROCESS

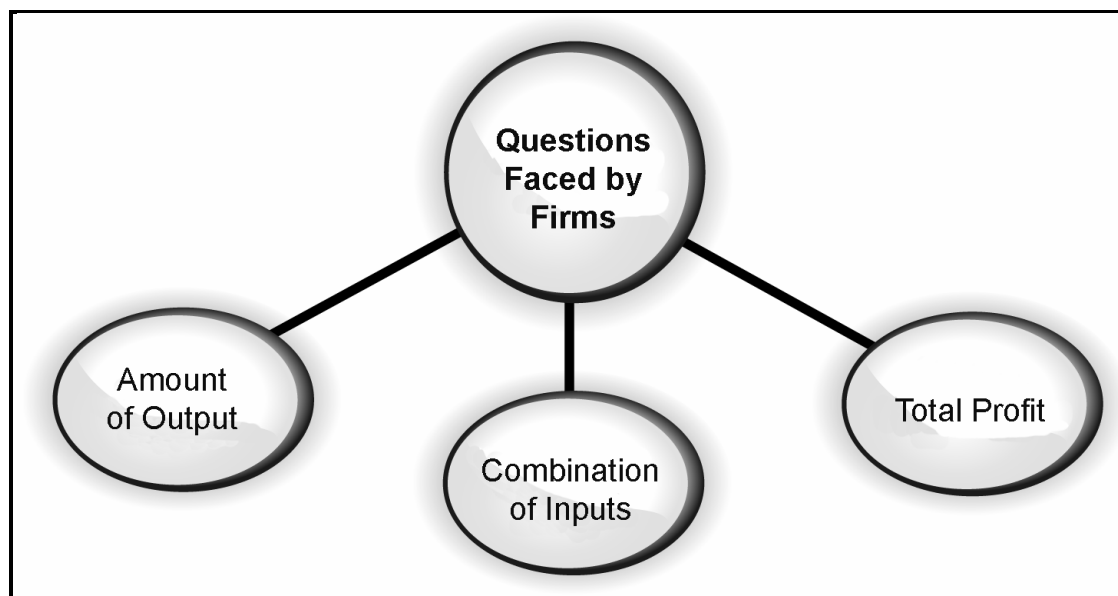
Production is very important in an economy; in fact many economists consider the success in production activities as an indication of progress of a country. Production is important due to its role in changing inputs into more valuable materials. The value enhancement will result in higher consumption satisfaction. In connection with that, we can define:

Production as any activity or process of combining inputs to transform into outputs that produce utility at present time or in the future.

Firms are organizations that perform production processes, by combining inputs in the production process to produce outputs.

The behavior of firms is important in determining the type of goods and services to be produced for the society, price, and its quantity. In short, firms have to face questions as shown in Figure 4.1.

Figure 4.1: Questions of firms



The behavior of firms is influenced by consumers, competitors and the environment. How the production process is carried out and the combination of input used depends on technology. Hence, technology determines the form of production function. Production function shows the technical relationship between inputs and outputs. It explains the method used by firms to change inputs into outputs. The general production function is

$Q = f(L, K, M, \dots)$, where Q = output, L = labour, K = capital, M = raw materials.

We can summarize the firm's decision making process into three steps:

- 1) Choosing the quantity to be produced and listing all efficient methods in producing the specified quantity;
- 2) Choosing the economically efficient method, that is, the method of lowest cost to produce the specified quantity; and
- 3) Repeat step 1 and 2 for all the other quantities.

Firms are expected to choose the most efficient production technology. An efficient production technique is the production method that does not waste resources, that is, one of the inputs cannot be reduced without the addition of other inputs. If an input can be reduced without adding other inputs, the method is still considered inefficient. Basically, production technology can be divided into two, namely:

Labour-intensive technology - If production process uses more labour force compared to capital.

Capital-intensive technology - If more capital is used compared to labour.

Firms will definitely take into account the cost and profit in choosing technology besides determining the level of efficiency. Thus, the technology chosen is a technology that is able to minimize production cost. For example, if a firm operates in a country which has abundant cheap labour but lacking in capital goods, the most optimal production method will be the one that is labour-intensive.

4.3 INDUSTRY, FIRM AND PLANT

The three prime movers in a production process are industry, plant and firm.

(a) Firm

A firm is an organization that buys resources from the household or other firms to be used in the production of goods or services that will be sold to consumers. Firm size may vary, from a peddler selling snacks by the sidewalk to multinational firms operating worldwide. Firms exist because households have various needs which cannot be fulfilled by the household itself due to various constraints such as the lack of resources, lack of expertise, or high cost. Firms have substantial benefits in the use of inputs in production processes due to specialization, economies of scale, among others.

(b) Plants

Plant is the unit of production, while the firm is the unit of ownership and control. Most firms have more than one plant, that is, an area, machine or tools and equipments used in the production process. Plants owned by a large firm may consist of a number of factories with high-

tech production equipments in a few areas or countries. For a small firm such as a tailor, the plants owned may consist of a few sewing machines.

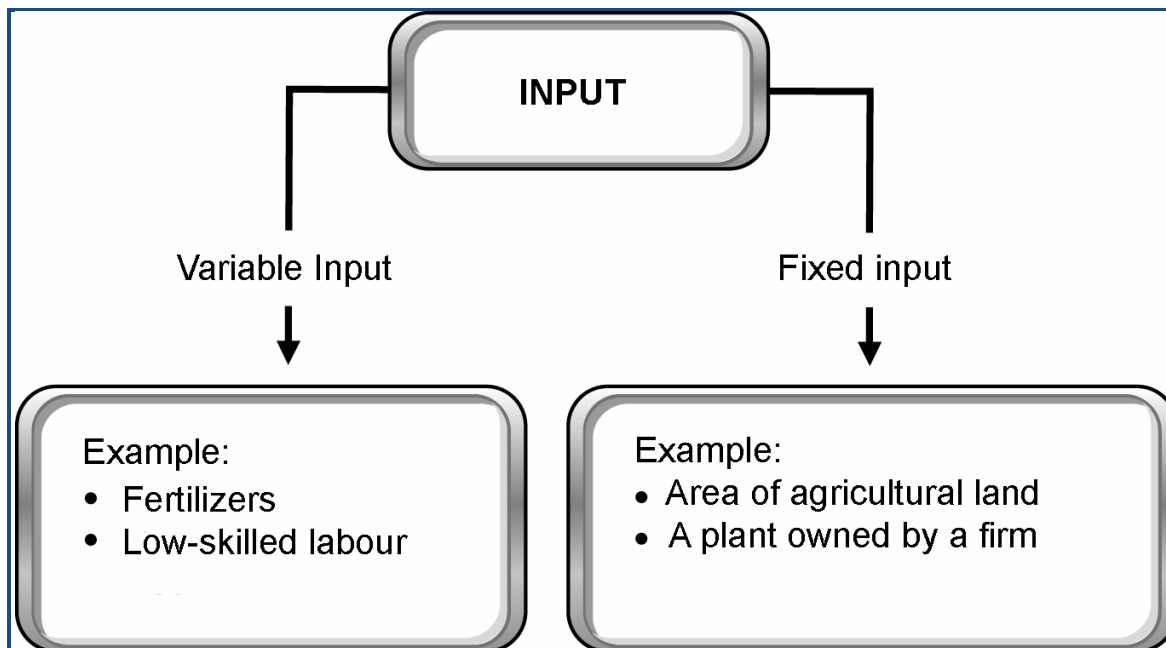
(c) Industry

An industry consists of all firms that are competing in one market. Examples of industries are such as the fast-food industry, clothing industry and automobile industry. The interaction of firms within an industry determines the form of market structure that gives different implications towards the level of output and price. Examples of market structure are the perfect competition market, monopoly, monopolistic competition and oligopoly.

4.4 INPUT AND OUTPUT

Resources used in the production process are known as **inputs**. They include raw materials, labour, area of production, machines and intermediate goods purchased from other firms. Inputs can be categorized into variable inputs and fixed inputs, as shown in Figure 4.2.

Figure 4.2: Types of input



Variable inputs are inputs that can be added or reduced within a short period of time. Variable input will change according to the change in output. Its quantity is influenced by the change in output. **Fixed inputs** are inputs that cannot be added or reduced within a short period of time.

They usually provide service for a long period of time. Factories built can be used for years; land can be used endlessly if not sold. Skilled work force is also considered as fixed input that are paid monthly salary; it may be quite difficult to change the number of these workers in a short time since advertising and interview process are required.

Output is a good or service that is produced from the production process. Output produced by a firm might be purchased by consumers, other firms or the government.

4.5 LONG-RUN AND SHORT-RUN

Fixed input and variable input are closely related to the concept of production period.

(a) Short-run in production is a period where at least one of the inputs is fixed and a firm cannot enter or leave the industry.

(b) Long-run is the period of production where all inputs are variable, and firms can increase or reduce its production capacity, and also enter or leave the industry. Production period is not an absolute time concept such as days, weeks, months or years. It is a relative concept and refers to the rate of changing fixed input into variable input.

4.6 LAW OF DIMINISHING MARGINAL RETURNS

Law of diminishing marginal returns states that if variable input is added into a production process that uses at least one fixed input, increment in total output may increase at an increasing rate initially, but the rate of increase will decline after one level of input.

This law is very rational and can be used in various fields. In the health field for example, hospital is a fixed input. When the first doctor is hired, he might not be able to treat all patients available in one day. When the second doctor is added, the number of patients treated will increase, but if more doctors are added continuously, it will reach a stage where the number of patients treated increases but at a lower rate compared to the initial rate of increase. Sooner or later, the hospital will become congested with doctors until some of them will not have the chance to treat.

Some say that through the concept of diminishing marginal returns, there are predictions that at one time, a large number of world population will die of starvation due to shortage of agricultural land. However, this condition is yet to happen because technology enables the fixed input of agriculture, which is land, to increase its capacity.

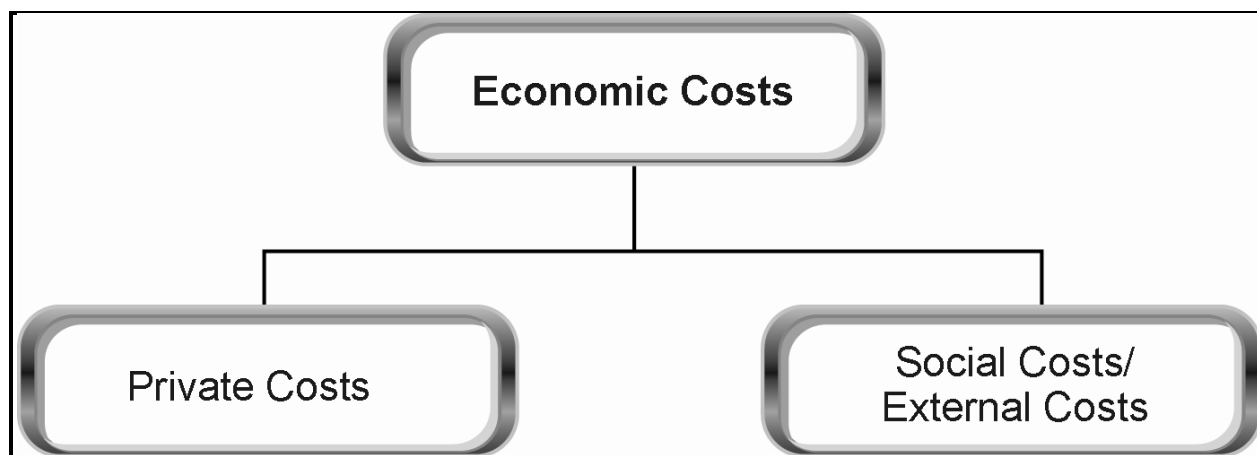
4.7 CONCEPT OF COST

Cost is what is exchanged or sacrificed in order to obtain something else in return. It can be in the form of money, goods, time etc.

Economic Costs

The concept of opportunity costs is the basis of the concept of economic costs. Economic costs for a good can be defined as the value of the best alternative foregone in order to obtain the particular good. Therefore, to determine the economic cost of a certain good, economists must calculate the sacrifices that have to be made by the society in order to produce one additional unit of that particular good. Figure 4.3 illustrates the components of economic costs.

Figure 4.3: Components of Economic Costs



Private cost is the cost that has to be paid by an individual who is directly involved in the production or consumption of a particular good. Meanwhile, social cost or external cost is the cost burden carried by individuals who are not directly involved in the production or consumption of that particular good.

We use the process of cooking oil production from oil-palm trees as an example. Private costs are costs that have to be paid by the manufacturer to the supplier of raw oil-palm, labour force, amount of electricity used and others.

However, this factory may produce industrial wastes that can pollute the river or drainage systems nearby. This pollution problem might cause some members of the society living around the area to lose their source of income or their recreation area. Meanwhile, the government is forced to use tax revenue money to clean up the pollution. All these costs are considered as external costs or third-party costs.

Private costs are further divided into explicit (tangible) costs and implicit (intangible) costs. **Explicit cost** is the market value of all inputs purchased by a producer. Meanwhile, **implicit cost** is the market value of inputs owned by the producer such as the value of his own building used, and the expertise possessed by the producer.

4.8 SHORT-RUN PRODUCTION COSTS

Recall that short-run production involves the use of fixed inputs and variable inputs. The cost that is related to fixed inputs is referred to as fixed cost, while cost related to variable inputs is the variable cost. **Fixed costs** are costs that do not change according to change in output. Meanwhile, **variable costs** are costs that change along with the change in output.

Total Costs

Total cost (TC) comprise of the total fixed costs (TFC) and the total variable costs (TVC) or

$$\text{Total Cost} = \text{Total Fixed Costs} + \text{Total Variable Costs}$$

$$\text{TC} = \text{TFC} + \text{TVC}$$

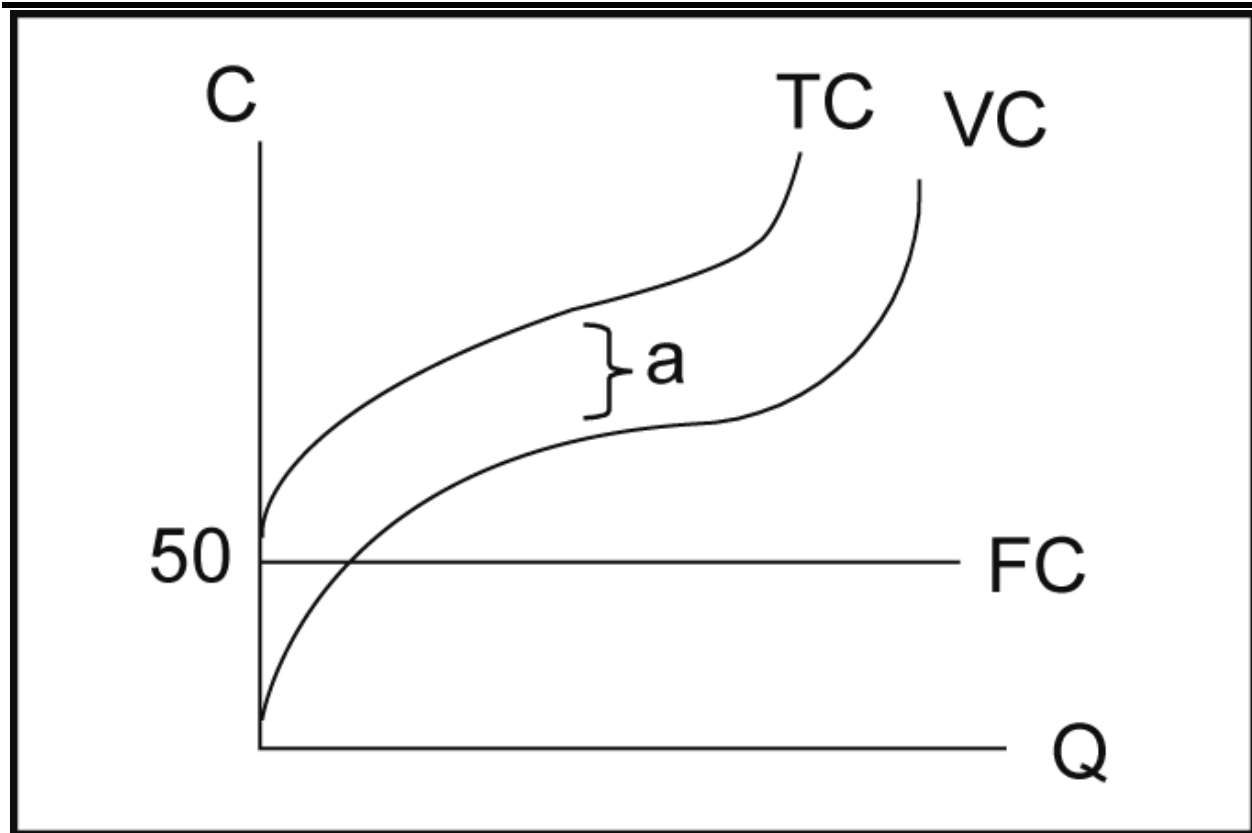
Total Fixed Cost = Total Cost - Total Variable Cost

$$\text{TFC} = \text{TC} - \text{TVC}$$

$$\text{Total Variable Cost} = \text{Total Cost} - \text{Total Fixed Cost}$$

$$\text{TVC} = \text{TC} - \text{TFC}$$

Figure 4.6 Types of total costs.



Observe that the total fixed cost curve is horizontal because fixed cost does not change along with the change in output. Meanwhile, the total variable cost curve increases at an increasing rate (curve becoming steeper) due to the law of diminishing returns in short-run. The total cost curve is the vertical sum of fixed cost and variable cost. Therefore, the distance between the total cost curve and the total variable cost curve (a) represents the total fixed cost.

Average Costs

Average fixed cost (AFC) is the total fixed cost divided by total output, or

$$\text{Average Fixed Costs} = \frac{\text{Total Fixed Costs}}{\text{Total Output}} \quad \text{or} \quad \text{AFC} = \frac{\text{TFC}}{Q}$$

Average Variable Cost (AVC) is the total variable cost divided by total output, or:

$$\text{Average Variable Cost} = \frac{\text{Total Variable Cost}}{\text{Total Output}} \quad \text{or} \quad \text{AVC} = \frac{\text{TVC}}{Q}$$

Total Average Cost (AC) is the total cost divided by total output;

$$\text{Total Average Cost} = \frac{\text{Total Cost}}{\text{Total Output}} \quad \text{or} \quad \text{AC} = \frac{\text{TC}}{Q} \quad \text{or} \quad \text{AC} = \text{AFC} + \text{AVC}$$

Marginal Costs

Marginal cost is the change in total cost caused by one unit of output change, or

$$\text{Marginal Cost} = \frac{\text{Change in Total Cost}}{\text{Change in Total Output}} \quad \text{or} \quad \text{MC} = \frac{\Delta \text{TC}}{\Delta Q}$$

SUMMARY

The production process involves industry, firm, plant, technology, input and output. The production function illustrates the form of technology used in production, that is, the process that combines inputs to produce output.

Firms are organizations that perform the production process. Firms may own several plants as the production unit. Meanwhile, industry consists of all firms competing in one market.

Inputs used by firms may consist of fixed or variable inputs. The use of fixed input will not change with change in output, while variable output changes according to the change in output quantity.

This law of diminishing returns states that if a variable input is added in a production process that uses at least one fixed input; the increase in total output will eventually diminish after a certain level of input.

Economic costs consist of private costs and social costs. Private cost is the cost borne by the producer, while social cost is the cost borne by the society.

Private costs consist of explicit costs and implicit costs. Explicit cost is the tangible cost such as payment to production factors purchased in market, while implicit cost is the cost for inputs owned by the producer.

Short-run total production cost consists of total variable costs and total fixed costs. When total cost, total fixed cost and total average cost are divided by total output, average cost, average fixed cost and average variable cost will be obtained. Meanwhile, marginal cost is the addition in cost caused by an addition of one unit of output.

CHAPTER FIVE



MARKET STRUCTURES

LEARNING OBJECTIVES

At the end of this chapter, you should be able to:

- 1) Explain the characteristics of a perfectly competitive market;
- 2) Describe the meaning of monopoly and sources of monopoly power;
- 3) Differentiate monopoly market from other market structures;
- 4) Describe the characteristics of a monopolistic market;
- 5) Differentiate a monopolistic market, perfectly competitive market and the monopoly market and
- 6) Describe the characteristics of the oligopoly market.

4.1 INTRODUCTION

The pricing and output decision does not only depend on demand of consumers and costs faced by firms. The pricing and output decision of the firm also depends on the structure of the market in which the firm is operating. We will begin this topic by first understanding the characteristics of the perfectly competitive market.

4.2 PERFECTLY COMPETITIVE MARKET

Generally, a perfectly competitive market can be defined as a market that consists of many firms selling homogeneous products, having perfect market information, and with no restrictions for firms to enter or leave the industry. A particular market is said to be operating under perfect competition if it has the following characteristics:

(a) A Large Number of Sellers and Buyers

The market consists of a large number of sellers and buyers. Therefore, any action by a single seller or buyer will not influence price. This is because the quantity produced (purchased) by a

seller (buyer) relatively is very small compared to the quantity produced (purchased) in the market. Therefore, sellers and buyers will only accept the price fixed by the market.

(b) Goods Produced are Homogeneous

Every firm in the perfectly competitive market produces homogenous goods. This means that buyers are not able to differentiate the goods sold in the market. The most important implication of this characteristic is firms are not given any power in determining the price. Therefore, firms act only as the “price taker”.

(c) Freedom to Leave or Enter Market

This means that there are no restrictions for a firm to enter or leave the market. If the existing firm experiences positive economic profit, it cannot prevent new firms from entering the market. On the other hand, if the existing firm faces loss, it is free to leave the market. Since firms are free to leave and enter the market, there is always a large number of sellers and buyers in the perfectly competitive market.

(d) Perfect Information

Every firm and buyer is assumed to have perfect information regarding the goods available in the market and the price fixed. With perfect information available, sellers will not sell goods at a price lower than the market price. Meanwhile, buyers will not purchase goods at a price higher than the market price.

4.3 MONOPOLY MARKET

The monopoly market (or usually referred to as the monopoly) can be defined as a market that consists of only one firm or seller. The main characteristics that differentiate a monopoly from a perfectly competitive market are as shown in Figure 4.1

(a) No Close Substitutes

Goods produced by a monopoly do not have close substitutes in terms of the consumption of the good. In Kenya, Kenya Power and Lighting Company (KPLC) is the best example of a monopoly. Electricity supplied by KPLC cannot be substituted with other forms of energy. Even

though there might be other goods that can substitute the use of electricity, the good may still be limited in terms of its use and nature.

(b) Barriers to Entry into Industry

Unlike the perfectly competitive market, monopoly has the power to restrict the entry of other firms into the industry. This restriction is due to several reasons such as:

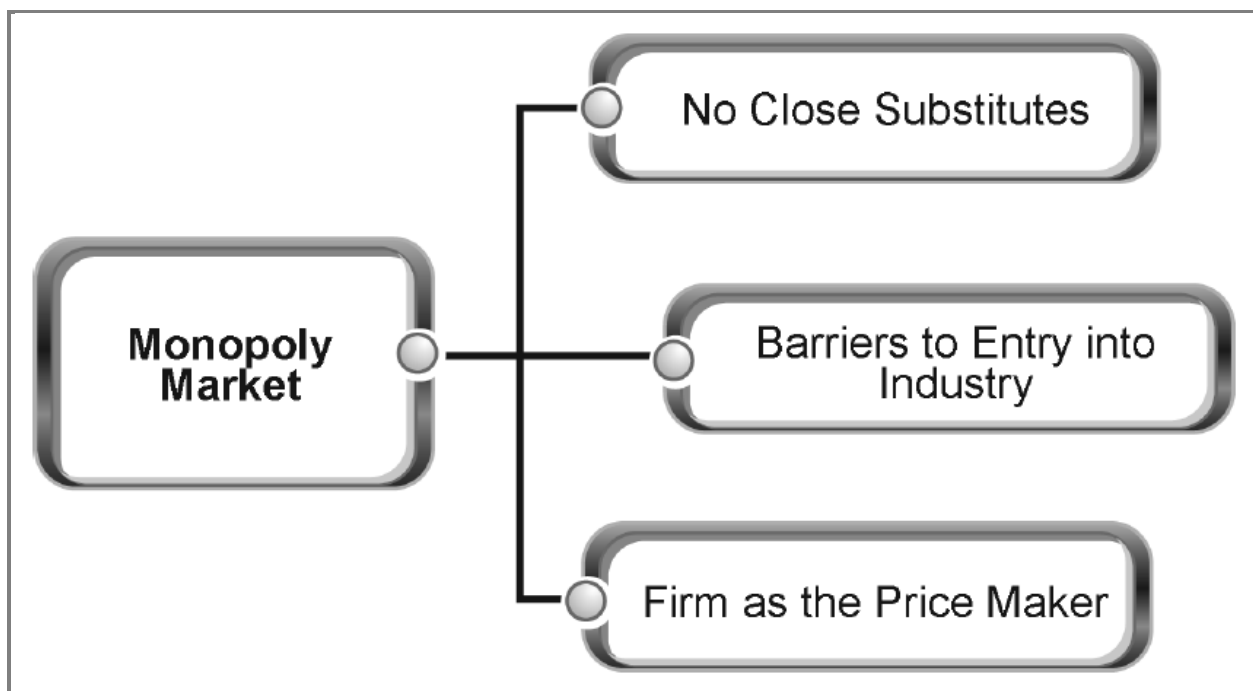
- (i) License given by the government;
- (ii) Control over production resources; and
- (iii) Having the benefits of economies of scale, and others.

This will create monopoly power in a particular industry.

(c) Firm as the Price Maker

A monopoly market consists of only one firm that controls the whole market. This enables the monopolist to solely determine the price of goods or services provided.

Figure 4.1: The features of a monopoly market



4.4 MONOPOLY POWER

There are several sources that cause monopoly power:

- (i) Control over certain production resources;
- (ii) Economies of scale; and
- (iii) Legal barriers

(i) Control Over Certain Production Resources

A monopoly can occur when a particular firm is able to control a large portion or the entire supply of raw material that cannot be afforded by other firms.

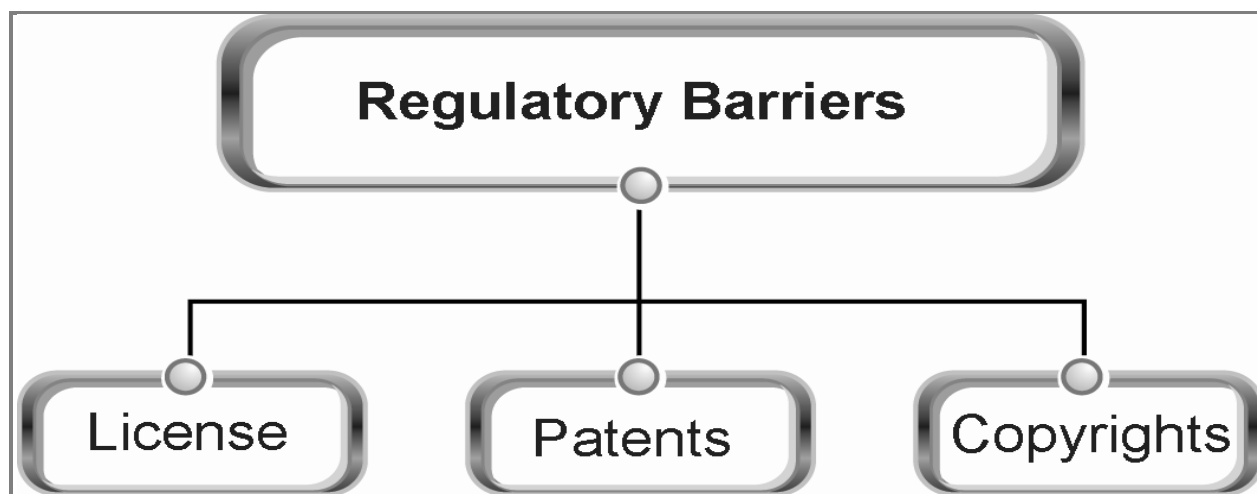
(ii) Economies of Scale

Economies of scale means a firm can produce output with a low average cost due to the large quantities produced. The output produced is able to accommodate almost all the demand in the market. This prevents new firms from entering the market because of the long time period needed to achieve economic scale. If a new firm intends to enter the market, it needs to sell its output at a price as low as the price of the firm experiencing economies of scale; this will probably result in a loss and the new firm will soon have to leave the market.

(iii) Legal Barriers

The government creates regulatory barriers to protect the interests of the monopoly. The regulatory barriers can be in the form of licenses, patents, and copyrights. Figure 4.2 illustrates the legal barriers present.

Figure 4.2: Regulatory barriers in the economy



(a) License

Public license is a legal right granted by the state government or the local government by imposing certain amount of payment onto the business owner. Without this license, the business operated is considered illegal and legal action can be taken towards it.

Any business such as the medical, food and other industries, will need to have a license. How can a license create monopoly power? License can create monopoly power because not all businesses will be granted license by the government.

However, granting of license seldom leads to monopoly power. In most situations, it will only reduce competition. The government will only provide license to a particular business which is considered to be more viable than other competitors. Any firm without license will be restricted from doing business.

(b) Patent

Patent is a form of special right given by the government to inventors or creators, with regard to their inventions or creations. This patent restricts other individuals from producing output similar to the invention that has been granted the patent right. Patent is vital in protecting new inventions and creations since it involves a very high cost.

(c) Copyrights

Copyright is also a patent that protects inventors from imitations. Copyright differs from patent as it is given to writings and publication of books, and song writing. Copyright only allows the particular writer to publish the particular book or song. Any unauthorized publication will be legally dealt with.

4.5 MONOPOLISTIC MARKET

Market is classified as a monopolistic market when it has the following characteristics:

- (a) A large number of sellers;
- (b) Unrestricted freedom of leaving or entering market; and
- (c) Different kinds of goods.

(a) A Large Number of Sellers

There are many sellers in a monopolistic market but not as many as in a perfectly competitive market. This means that the product of each firm is relatively small compared to the market product.

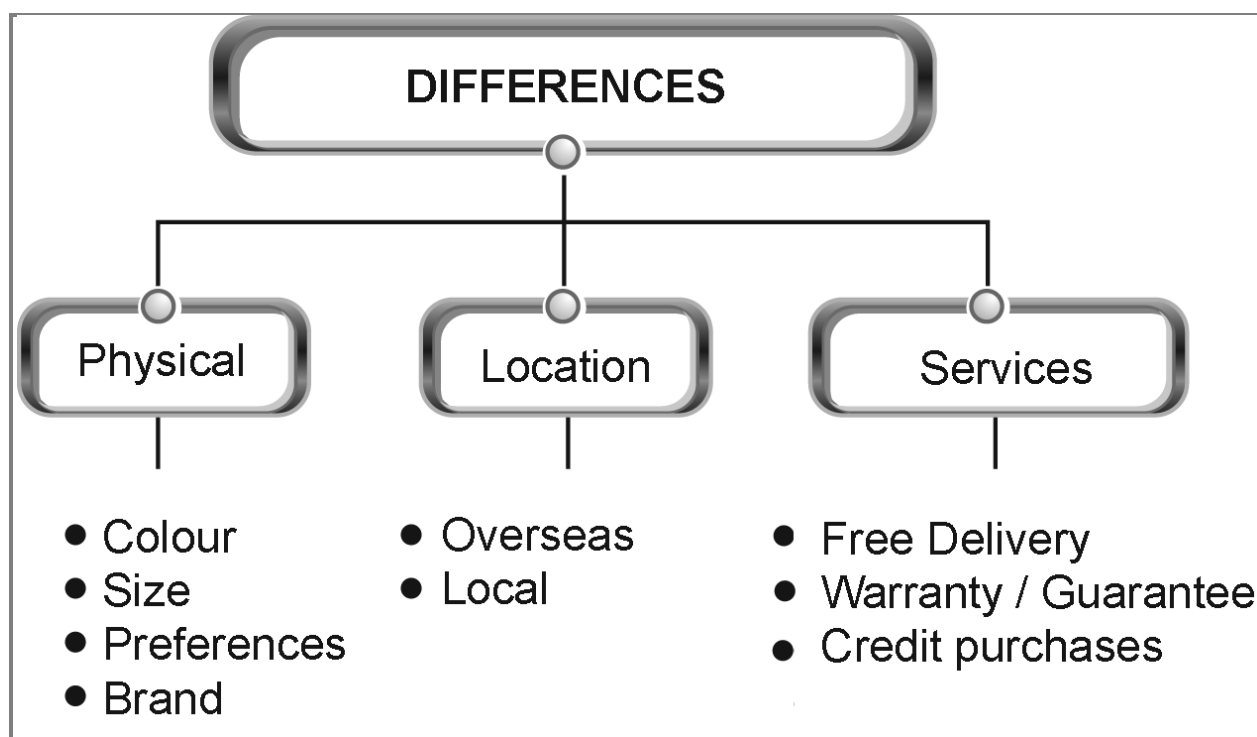
(b) Unrestricted Freedom of Leaving or Entering Market

Firms have the freedom to leave or enter market as with firms in a perfectly competitive market. The effect is that the number of firms in the industry is coordinated until all firms in the market gain normal profit.

(c) Goods that can be Differentiated

In a perfectly competitive market, goods produced are homogenous. In reality however, most goods have close substitutes, but not perfect substitutes. Therefore, goods produced by firms in a monopolistic competition market can be differentiated. Among the differences are as shown in Figure 4.3.

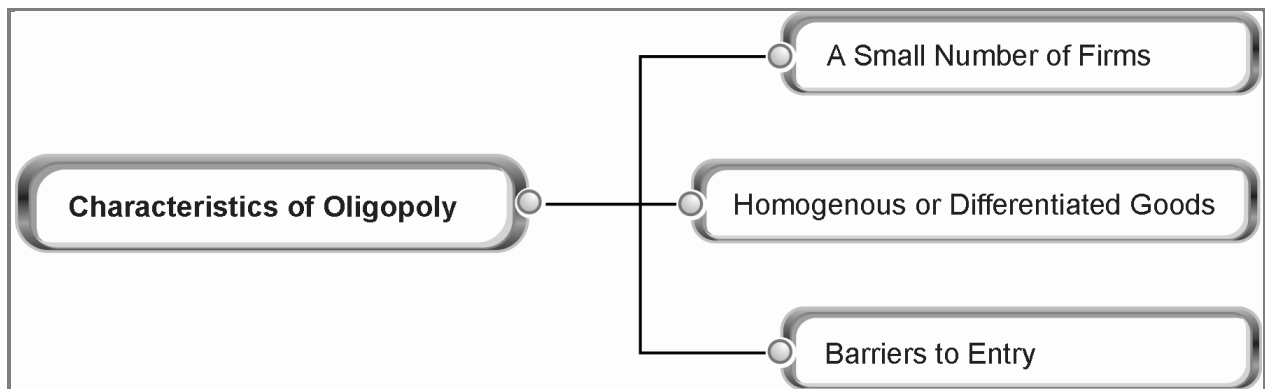
Figure 4.3: Differences of goods produced



4.6 OLIGOPOLY MARKET

Oligopoly is a market structure characterized by a few firms. This is different compared to the perfectly competitive market and the monopolistic market that consist of large number of sellers, whereas there is only one sole seller in the monopoly market. There are three main characteristics or features in the oligopoly market:

Figure 4.4: Characteristics of an oligopoly market



(a) A Small Number of Firms

Due to the small number of firms, an oligopoly firm is perceived to have the power to determine price but each firm must consider the action of competitors that is predicted to influence its decisions in determining price, output and carrying out advertising campaigns.

As a result, oligopoly firms are considered as mutually dependent since the profit of each firm not only depends on the strategies of price and sales, but also on the action of its competitors. The characteristic of mutual interdependence that exists among these firms in an oligopoly industry makes it hard to analyze the behaviour of a certain firm.

(b) Homogenous Goods and Goods that Can Be Differentiated

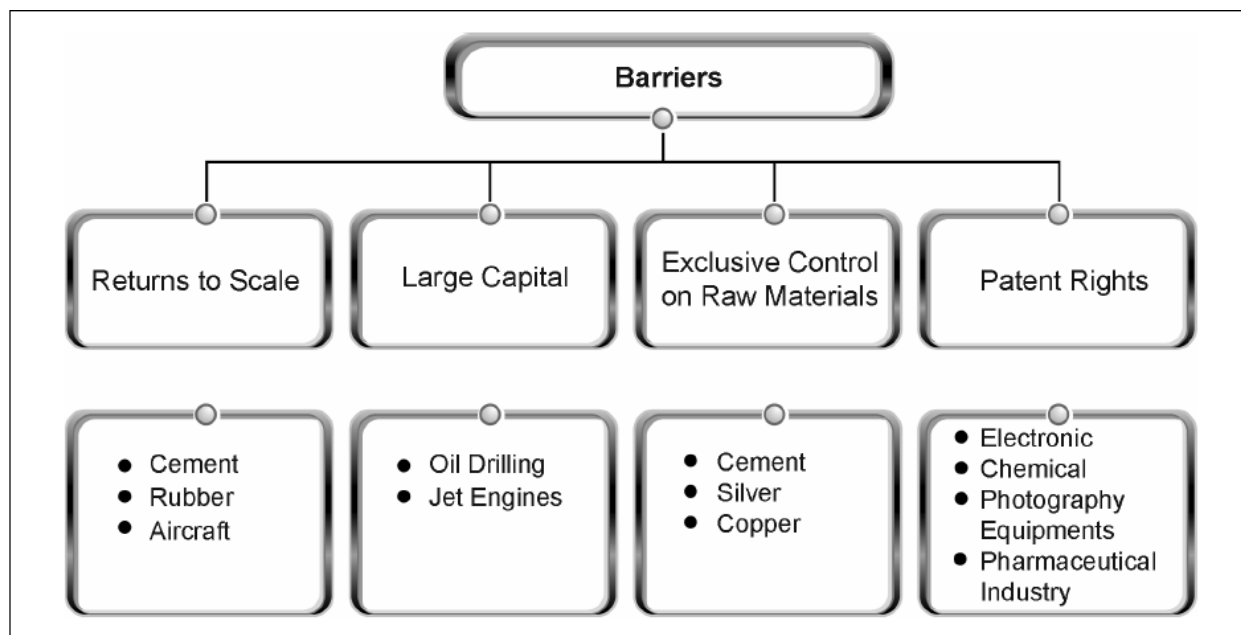
In terms of goods, oligopoly firms may produce either homogenous goods or differentiated goods. Most of the goods produced such as zinc, aluminum, cement and steel are homogenous goods.

Meanwhile, consumer goods such as automobile, tyres, electronic equipments, cigarettes, breakfast cereals and sports equipments are goods that can be differentiated. For goods that can be differentiated, firms will usually conduct non-price competition such as advertising.

(c) Barriers to Entry

Firms in an oligopoly market also face barriers as in the monopoly market. There are a few important barriers that influence the number of firms in market. The small number of firms enables each firm to make enough sales to achieve economies of scale. For new firms, they only control a small portion of market share and definitely will not be able to achieve economies of scale. This means they run production with a high average cost and eventually, they will not be able to sustain in the industry.

Figure 4.5: Barriers in an oligopoly market



SUMMARY

Market structures can be arranged in the sequence starting from the perfectly competitive market, monopolistic competition market, oligopoly market, and finally the monopoly market.

Perfect competitive markets consist of many firms selling homogenous products, perfect market information and n restrictions for firms to enter or exit the market.

Monopoly is a type of market that consists of only one firm producing output for the entire society. A few factors have been identified as the source of monopoly power such as control towards input, economies of scale, patents, and licenses granted by the government.

The understanding towards market structure of the perfect competition and monopoly is very useful in studying the behaviour of firms in a monopolistic competition. Even though the firm has the power to determine price, it is not able to maintain profit in the long-run since there are many producers. Besides that, there are no barriers of entry or exit for firms in the market, which finally will lead to firms gaining only normal profit in the long-run.

In an oligopoly market, the firm not only has to fulfill this condition, but must also consider the action of its competitors when determining the price and output that maximizes its profit.

CHAPTER SIX



APPLICATION OF ECONOMIC CONCEPTS TO HEALTH CARE MARKET

LEARNING OBJECTIVES

At the end of this chapter, the student is expected:-

1. To understand health as one of the social sectors with economic implication.
2. To understand the specific nature of the health care service in implementing economic principles and techniques.
3. To be able to know the implications of economic development to the health care services.
4. To understand the effect of some economic factors on health status of society.
5. To identify the ways through which improvement of the health system can create conducive conditions for economic development and vice versa.

5.1 INTRODUCTION

“**Health economics**” can be defined as the application of Economic theories, tools and concepts of economics as a discipline to the topics of health and health care. Since health economics is concerned with issues related to the allocation of scarce resources to improve health, this includes both resource allocation within the economy to the health sector and within the health care system to different activities and individuals.

In Kenya, the need for health care is increasing due to rapid population growth and changes in disease pattern. Related with this, health care costs are expected to be rapidly increasing. Apart from explosion of costs, inequity, misallocation and inefficiency are believed to be serious challenges to the health care system. These problems put a considerable strain on our limited health care resources. There are also very visible signs of change in the health care market. Attention is shifting from the “passive” funding and administration of systems, in which physicians identify and provide appropriate care, to concerns about the resource costs of care and the health outcomes achieved from providing care.

Why is this economic perspective useful in the context of health care? Health economics examines the problem of scarcity as it arises with respect to health and health care. It examines how we as individuals and societies confront the fact that while the resources available to us are limited, the alternative uses for these resources are unlimited. Thus, health economists are interested in some very important questions.

- » How is health produced?
- » What role does health care play in its production?
- » What is the value of health?
- » How do we go about measuring health status?
- » What influences demand for health and health care?
- » What influences the supply of health care?
- » How can equilibrium between demand and supply be achieved?

The discipline of health economics is the study of these questions and the answers to them that individuals and societies have put forward.

The principles of health economics consider supply and demand issues and how the two might interact given that the standard market solution generally fails due to problems such as:

- » Adverse selection,
- » Moral hazard,
- » Asymmetric information
- » Supplier induced demand.

Adverse selection: A situation often resulting from asymmetric information in which individuals are able to purchase insurance at the rates that are below actuarially fair rates plus loading costs. An event in healthcare whereby one party decides not to reveal the full extent of their risk profile to the other party (i.e. insurance model).

Moral hazard: the possibility of consumers or providers exploiting a benefit system unduly to the disadvantages of other consumers, providers or the financing community as a whole. It is an insurance term that represents the disincentives created by insurance for individual to take measures that would reduce the amount of care demanded. In the health services literature, it is

more commonly used to express the additional quantity of health care demanded, resulting from a decrease in the net price of care attributable to insurance. Moral hazard arises where the attitudes and behavior of a person or organization change once they are covered for potential costs or losses (e.g. healthcare consumption may be higher when insured.)

Asymmetric information: Situations in which the parties on the opposite sides of transaction have differing amounts of relevant information. Doctors have more knowledge and information about medicine than patients /consumers, the individual may not be the best judge of his/her own interests, the doctor acts as an agent of the patients demand.

Supplier-induced demand (SID) may occur when asymmetry of information exists between supplier and consumer. The supplier can use superior information to encourage an individual to demand a greater quantity of the good or service they supply than the Pareto efficient level, should asymmetric information not exist. The result of this is a welfare loss. Supplier-induced demand (SID) has commonly been alleged to arise when there is an increase in the number of doctors.

5.2 GENERAL FEATURES OF THE HEALTH CARE

There are different understandings of health – each with different implications for the roles of government. It is important to recognize, first, the difference between health and ‘health care’. The term health refers to a state either of an individual or of a community. A number of factors including ‘health care’ may influence this state of health. However, other factors that affect health are poverty, level of education, food intake, access to clean water and sanitary and housing conditions.

The narrowest concept of health sees it as a measure of the state of the physical body organs. In contrast, WHO defines health as “a state of physical, mental and social well-being and not merely the absence of disease or infirmity”. By this definition, WHO sees health of an individual or community as being concerned not only with physical (and mental) status, but also with social and economic relationships.

How one views health will affect the type of intervention and planning that is possible. The narrowest definitions are closely associated with a medical model of health in which the role of health services is seen as paramount in restoring the functioning of the unhealthy body. Wider definition of health suggests that broader interventions, including community empowerment and anti-poverty measures, are necessary to promote health.

5.3 PERSPECTIVES ON THE IMPORTANCE OF HEALTH

a) Health as a right

Health is viewed by some as a right analogous to justice or political freedom. Indeed, the WHO constitution states that ‘... the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition’. Although it is difficult to believe that equal health status is attainable in the same way that equal political freedom may be, health is seen as so fundamental that constraints to its full attainment must be minimized. In part, this involves ensuring access to health care. The government is seen as having a responsibility to ensure this, comparable with its role in ensuring equal justice. According to such a view, a government will be particularly concerned with issues of equity in health and health care.

b) Health as consumption good

For others, health is seen as an important individual objective that is not comparable with justice, but rather with material aspects of life. Such a view often refers to health as consumption good. The government here has no special responsibilities in the promotion of health, but leaves decisions as to its comparative importance to individual consumers. The role of the state under such a view might be limited to ensuring that the health care provided is of an adequate quality (such as ensuring professional standards in the same way that it would monitor the quality of any good or service, such as food).

c) Health as an investment

A third view of health is that it is important, but largely it affects the productive ability of the workforce. Illness may affect overall production, either through absenteeism or by lowering productivity through its debilitating effects.

5.4 DISTINCTIVE CHARACTERISTICS OF HEALTH CARE SERVICES FROM OTHER COMMODITIES

Why not leave health care to the market?

In theory, markets produce the goods and services we want in the right quantities and at the lowest possible cost. This is why markets are so powerful. Nevertheless, in the real world markets do not always work in the way theory predicts. Economists analyze this question of health care and markets from a theoretical perspective called market failure. Most people believe that you cannot buy and sell health care like other goods and services. They believe that health care is different.

For a market economy to allocate resources efficiently, the following set of conditions must be satisfied:-

- » All markets are perfectly competitive
- » Both consumers and producers have perfect information about prices and other relevant variables.
- » There are no externalities
- » All goods and services are private goods
- » All economic agents are maximizes

Market failure in health care can occur due to any or all of the following:

- » Imperfect market structures
- » Externalities,
- » Asymmetric information
- » Problems of Risk and uncertainty
- » Consumers as satisfaction maximisers
- » Equity and health care

5.4.1 Imperfect competition

The free market models predict large numbers of buyers and sellers - all of whom have no power individually to influence the market price. However, a significant proportion of health care is

delivered by hospitals and these hospitals can often exercise monopoly power within the health care market in the local area.

Why should hospitals be able to act like monopolies? The answer is that hospitals have an incentive to grow in size and in the range of services provided. This leads to the emergence of one large hospital in an area rather than a large number of small hospitals. The incentive to grow is the internal **economies of scale** and **economies of scope**. This also lends the hospital to be a **price maker** rather than a price taker as is the case in perfectly competitive markets.

Economies of scale - is where the average cost of providing treatment falls as a hospital becomes larger? There are a number of reasons for this:-

1. A large institution is able to make more use of specialization. This can involve both people and capital. A large hospital is able to develop specialist medical units employing both highly skilled surgeons and specialist capital equipment. Such a hospital is also able to employ specialized managers and ancillary staff, which will allow it to operate more efficiently.
2. A large institution is able to achieve purchasing economies of scale through bulk buying.
3. A large hospital prevents wasteful duplication of facilities. There will only be a limited number of patients with a particular condition needing particular skills and equipment in any one area. Concentrating the treatment in one place allows the most efficient use of resources.

Economies of scope - It costs less to provide a range of services in a single hospital rather than have several hospitals each just producing one or two services. For example, emergency surgery and treatment of heart attacks are more cost effectively provided in a single hospital rather than two separate ones.

Price maker - In this situation, the hospital as supplier of health care services has considerable power to bargain over price. Instead of being a price taker, it is a price maker. In this situation, a free market does not lead automatically to a Pareto efficient outcome. In particular, if the hospital is profit maximizing then it will set price above marginal costs giving an allocative

inefficient outcome. In addition, it is likely that the hospital will be productively inefficient, since it lacks the incentive to reduce costs, which would be provided by competition.

5.4.2 Externalities

The economist defines external effects as involving positive and negative results for others that are the consequences of one's own actions. Externalities or spillover effects provide another source of market failure. Again the problem is related to information. This time the market price does not accurately contain all the information about the benefits and costs of the market transaction.

Example:

Suppose vaccination against infectious diseases were bought and sold through a free market. You are thinking about the benefits to you of not catching whooping cough – the price you are prepared to pay for vaccination will depend on your personal, private valuation of the benefits you receive. The amount of vaccination that private individuals will be prepared to buy at each price will depend upon their estimate of their personal benefit from being protected against whooping cough. However, when you are vaccinated against whooping cough you are not the only person to benefit. Other people also gain since they are now protected against catching whooping cough from you. This extra or externality benefit is missed by the free market. A free market will underprovide vaccinations and this in turn will impose a cost upon society.

5.4.3 Problems of Risk and uncertainty

If we are going to buy health care in a free market, then we have to have enough money to pay for it. Nevertheless, health care is expensive and we cannot predict when we are going to be ill. What makes this worse is that postponing buying health care is often risky. So, we face the problems of risk and uncertainty. The market response to this problem is to develop an insurance market to remove the uncertainty and risk from health care spending. We pay an agreed amount of money per year whether we need health care or not. Then, when we need care, the insurer pays the bills, however large they are. So, a free market in health care requires an effective health

care insurance market. Unfortunately, the health care insurance market itself is often not efficient. Moral hazard and adverse selection both cause significant market failure.

5.4.4 Consumers as satisfaction maximisers

Are consumers rational satisfaction maximisers? Market theory assumes that consumers know what is best for themselves - that is they can make choices, which will maximize their total satisfaction. If this assumption is wrong, then markets will not automatically produce efficient results. Economists call the satisfaction that consumers get from consuming a good or service utility. So, the extra satisfaction from consuming a bit more is called marginal utility, while the total satisfaction gained from consuming the whole amount is referred to as total utility. The satisfaction gained simply depends on the quantity and mix of goods and services chosen. The theory assumes that consumers get more satisfaction from more goods and services, but that the increase in satisfaction from consuming another unit – the marginal utility - diminishes as consumption rises.

In health care markets, consumers are unlikely to be in a position to appreciate the full range of possibilities available to them and so need expert help to guide them. This is particularly true as many situations affecting health are likely to produce cognitive dissonance. If utility is relative, then, this suggests that society would be better off with some form of universal provision rather than one based on individual health care purchases.

5.4.5 Information Asymmetry

In the health care market, information is not equally shared between buyers and sellers, instead, the seller, the doctor, has far more information than the buyer does, the patient does. This asymmetry of information undermines the separation of buyers and sellers. This situation is not unique to health care, but there are a number of factors, which make this information asymmetry particularly acute there.

Most medical information is technically complex and so not easily understood by a layman and this is made worse by the fact that many illnesses do not repeat themselves, so that the cost of gaining the information is very high.

The asymmetry of information makes the relationship between patients and doctors rather different from the usual relationship between buyers and sellers. We rely upon our doctor to act in our best interests, to act as our agent. This means we are expecting our doctor to divide herself in half - on the one hand to act in our interests as the buyer of health care for us, but on the other to act in her own interests as the seller of health care. In a free market situation where the doctor is primarily motivated by the profit motive, the possibility exists for doctors to exploit patients by advising more treatment to be purchased than is necessary – supplier induced demand. Traditionally, doctors' behaviour has been controlled by a professional code and a system of licensure.

5.4.6 Equity and health care

Equity is concerned with what is fair. If we had a market distribution of health care, then only those who could afford to pay would be able to purchase it. Most people regard that as unacceptable. This is a major reason why most societies regard health care as different from other commodities. As Donaldson and Gerard put it: “Within most societies there exists, in some form or another, a concern that health care resources and benefits should be distributed in some fair or just way”. William Beveridge, the architect of the welfare state, argued for a health service which would provide treatment “to every citizen without exception, without remuneration limit and without an economic barrier at any point to delay recourse to it”. Equity has remained a major goal within the developed nation's health system.

5.4.7 Demand for health services

As indicated above, most observers agree that consumers demand are affected by various factors such as more ignorant, taste and uncertain in their role as consumers of health services than as purchasers of most other commodities. They cannot assess the quality and character of the health services they consume and are generally unaware of the variety of health care alternatives available for treating a given illness. Ethical standards adopted by the health professions preclude advertising, so consumers are denied access to this form of information concerning the relative merits and costs of various forms of care and treatment.

Moreover, the reluctance of some physicians to discuss illness in non-ethical terms also tends to keep consumers ignorant of feasible treatment alternatives and makes it nearly impossible for them to exercise rational choice. While individuals can choose their physicians, doctors usually determine the kind and quantity of health services individuals consume. While doctors may have some knowledge of the individual's financial resources, these considerations are unlikely to have much influence on the type of care prescribed.

Consumers also generally lack knowledge concerning their actual need for care. Thus, the overall benefit of health services is generally uncertain from the consumer's point of view and the demand for a significant portion of health services is based on the doctor's judgment.

The demand and need for medical care is not always the same. For instance, an individual may demand more care than is required medically. Conversely, he may need medical care, but may not be aware of its value. Need is generated by the incidence of illness, while demand is generated by the interrelationship of illness with other factors. To plan for future use of facilities and personnel, demand rather than need for such resources must be projected.

Grover C. Wirick has identified five fundamental factors that can have an impact on the demand for health care services.

1. The first is need, when a person suffers from a condition that requires attention, or he/she has some other reason for seeking medical care or examination.
2. Secondly, there must be a realization of the need. Either the individual or someone acting in his/her behalf must know that the need exists. A number of psychological processes may be involved including awareness of the existence and availability of medical skills as well as the benefit likely to be gained through health services. In addition to these, the hopes, fears and beliefs of the individual, as well as the other personal factors such as his/her previous experiences, customs and religion play a significant role. For example, a person with a strong religious conviction against a particular kind of medical treatment may have a different realization of need for care from that of someone with other religious beliefs.

3. Third financial resources must be available to implement the care. This capability may take many forms, including the income and assets possessed by the individual or his/her family, insurance coverage, eligibility for free care under a group or government program and availability of care through welfare programs.
4. Fourth, there must be a specific motivation to obtain the needed care even with the availability of the other forces such as need, realization and resources, something must initiate the action.
5. Fifth is availability of service.

The first three forces are characteristics of the patient, while the fifth is a phenomenon of his environment. The fourth force is somewhat indistinct and could be characteristic of either or both.

5.5 HEALTH AND ECONOMIC DEVELOPMENT

Development is the concern of all developing countries. The health planner, manager, etc., is equally charged with that concern and must be knowledgeable about what development implies and the role health should play in the development of a given country. The following questions are of paramount importance for the health worker in a developing country such as Kenya:

- » What is development?
- » How does it differ from economic growth?
- » How can development be measured?
- » What role does health play in development?
- » What role should the health worker play in facilitating development?

5.5.1 The meaning of Economic Development

Development has been variously defined. The modern view of development perceives it as both a physical reality and state of mind in which society has, through some combination of social, economic and institutional processes, secured the means for obtaining a better life. The definition of “a better life” may vary from one society to another. Development in all societies, however, must consist of at least the following three objectives:

- 1) To increase the availability, distribution and accessibility of life-sustaining goods such as food, shelter, health, security and protection to all members of society;
- 2) To raise standards of living, including higher incomes, the provision of more jobs, better education and better health, and more attention to cultural and humanistic values so as to enhance not only material well-being, but also to generate greater individual community and national esteem.
- 3) To expand the range of economic and social opportunities and services to individuals and communities by freeing them from servitude and dependence on other people and communities and from ignorance and human misery.

5.5.2 Growth and Development

For a long time, Development and Economic growth were used interchangeably. Although the two are closely related they are, however, different. Economic growth can be defined as an increase in a country's productive capacity, identifiable by a sustained rise in real national income over a period of years. The main differences between growth and development can be outlined as follows:

- 1) Development encompasses the total well-being of the individual, a community or a nation, while economic growth is concerned with the increase in per capita earnings of the people making up the nation.
- 2) Economic growth is one characteristic of development, yet development must not be measured by the rate of economic growth. It is possible for a country to experience economic growth without becoming developed. A country, for example, may acquire a great wealth from its mineral deposits, but have a low level of health services. This is due to the fact that the wealth goes into the hands of a very small minority who might squander it on luxury goods instead of establishing a viable infrastructure.
- 3) Development is concerned with the total person, his economic, social, political, physiological, psychic and environmental requirements. If one of these is not fully cater for, development has not been achieved.

5.5.3 Measurement of Economic Development

The measurement of development has presented social scientists with a problem of finding the suitable tools and techniques to do so and of interpreting the results of such measurements. Several suggestions have been presented for measuring development. One line of research has suggested the use of so-called social indicators. The purpose of these is to measure the well-being of the population by examining factors such as health and nutritional status, level of education, housing conditions and so forth. However, it is easier to calculate GNP, per capita incomes and growth rates.

As a result, in most reports these variables are used as indicators of Development. Economic Development, in addition to a rise in per-capita income, implies fundamental changes in the structure of the economy characterized by:

- 1) Rising share of industry, along with the falling share of agriculture in GNP and increasing percentage of people who live in cities rather than the countryside
- 2) Passing through periods of accelerating, then decelerating population growth, during which the age structure of the country changes dramatically.
- 3) Changes in consumption patterns as people no longer spend all their income on necessities, but instead move on to consume durables and eventually to leisure-time products and services.
- 4) Meeting the needs of the present without compromising the ability of future generations to meet their own needs (sustainability)
- 5) Participation (mainly) by the citizens of the country in the process as well as the benefit, While economic development and modern economic growth involve much more than arise in per capita income, there can be no development without economic growth

5.5.4 Health Implications of Economic Development

The associations between health and national development are complex. The interaction is a two-way phenomenon with health being both influenced by and influencing economic development. Improved health has been considered solely a result of economic growth, a part of the product of growth rather than one of its causes.

Some development experts have maintained that health should have low priority in development funding and have tried to justify their opinions with comments such as “only a rich nation can afford the programs to assure its population’s health”, or “a poor nation cannot afford improved health”. The concern of development planners is accentuated by the fact that during the demographic transition, lower death rates are often associated with sustained high birth rates which results in rapid population growth.

While the supply of labor may increase as a result of improved health and reduced death rates, there may be no corresponding gain in per capita output. Thus, if economic growth is too slow to absorb the additions to the labour force associated with expanded health programs, greater unemployment, both open and disguised, may result. Thus, improved health in poor societies can be postulated to produce larger populations, greater poverty and ultimately deterioration in health.

However, other development planners and economists are more optimistic regarding the impact of health and nutrition programs on economic growth. There are three different ways by which improved health programs can accelerate development.

- » Improved health may increase productivity or efficiency of the labour force leading to greater output and reduced cost per unit of output
- » Better health conditions may serve to open new regions of a country of settlement and subsequent development.
- » Attitudinal changes towards achievement and entrepreneurship may be lined to health and nutrition programs. This linkage has a significant importance to stimulate entrepreneur ship in poor countries.

The following conclusions may be drawn from the discussions of the relations between health and development.

- 1) Development is not a simple process. It is a complex intermingling of economic, social, environmental, physiological, psychic, cultural and political factors.
- 2) The measurement of development is not an easy task. Economics provides certain tools which can be brought to bear on crucial areas of choice where decisions are required. Further

research is required in this area so as to develop tools and techniques for evaluation in those areas that are not readily quantifiable.

- 3) Development is linked not just to the improvement of economic indicators or the attainment of basic needs, but with wider aspirations such as high health status, and with social well-being and change. The Development process embraces not only the so-called “productive” sectors of the economy, but also the social sectors.

CHAPTER SEVEN



THE ROLE OF GOVERNMENT IN HEALTH

LEARNING OBJECTIVES

At the end of this chapter, the students will be able to:

- 1) Understand the role of government as affecting the resource allocation pattern in health & the extent to which it can influence the overall performance of the sector.
- 2) Analyze the possible measures that can be taken to alleviate the health problems of developing countries.
- 3) Understand the Kenyan health policy

7.1 INTRODUCTION

In recent years health reform has shot up to the top of political agenda throughout the world due to:-

- 1) Rapidly rising costs
- 2) The large number of people still not covered by health insurance
- 3) Fear of AIDS
- 4) A better understanding of the importance of health for improving the productivity of workers
- 5) Potential for enormous gains in health at very low cost

At the same time, governments all over the world have played a vital role in bringing about the great advances in health over the past many years such as:-

- 1) Public health measures are responsible for the reduction in deaths caused by vaccine-preventable childhood diseases.
- 2) Expanded and improved clinical care by government doctors and nurses.
- 3) Better prenatal and delivery services organized by governments have lowered the rate of serious complications of pregnancy and childbirth for millions of mothers.

Despite these remarkable improvements, however, enormous health problems remain. Absolute levels of mortality in developing countries are still unacceptably high; **child mortality rates are about ten times higher than those in developed economies**. In addition, every year seven million adults die of conditions that could be inexpensively prevented or cured; tuberculosis alone causes two million of these deaths. Over 400,000 women die from the direct complications of pregnancy and childbirth. Maternal mortality ratios are on average 30 times as high in developing countries as in high income countries.

There are several major problems with the way health systems are now run and financed and if solutions are not found, the pace of progress in reducing the burden of premature mortality and disability will be slowed.

7.2 PROBLEMS OF HEALTH POLICY

The appropriate nature and extent of government involvement will vary from country to country, in large part **depending on income levels**. Some of the common problems of most countries in their policy are misallocation, inefficiency and cost allocation.

a) Misallocation: one of the most important aspects of economics in making health policy is the appropriate allocation of scarce financial and human resources. This implies optimal disruption of economic resources among competing needs. This in turn calls for the proper identification of the need. Sometimes public money is spent on health interventions with low cost effectiveness such as foremost cancers, at the same time that critical and highly cost effective interventions such as treatment of tuberculosis and sexually transmitted diseases remain under funded.

b) Inequity: the poor lack access to basic health service and receive low quality care. Government spending for health goes disproportionately to the affluent in the form of subsidies to sophisticated public tertiary care hospitals and to private hospitals.

c) Inefficiency: much of the money spent on health is wasted because brand name pharmaceuticals are purchased instead of generic drugs, health workers are badly deployed and supervised and hospital beds are underutilized.

d) cost explosion: in some middle income developing countries health care expenditures are growing much faster than income as increasing number of specialists, the availability of new medical technologies and expanding health insurance linked with fee-for-service payments together generate a rapidly growing demand for costly tests, procedures and treatments.

7.3 WHAT CAN GOVERNMENTS DO?

Based on the problems mentioned, it makes sense for governments to be involved. The poor cannot always afford the health care that would improve their productivity and well being. Some actions to promote health are pure public goods with large positive spillover effects. Market failures in health insurance also mean government intervention can raise welfare by improving the way those markets function.

Clearly, governments have a responsibility to spend wisely and to evaluate carefully exactly what form their involvement should take. The World Bank recommends four main policies to overcome the existing weakness of health systems in developing countries.

- 1) Governments should finance a nationally defined package of essential public health and clinical care, especially for the poor, and should ensure the widespread and efficient delivery of such a package.
- 2) The public sector should devote far fewer resources or none at all, to financing health services outside of the essential package which are of lower cost effectiveness.
- 3) Governments should promote such types of health insurance that not only achieve broad coverage of the population, but also build in payment mechanisms that control the cost of health services.
- 4) Governments should encourage diversity and competition in the supply of health inputs, particularly drugs, supplies and equipment, as a means of improving quality and driving down costs. They should also foster a competitive private sector to provide the full range of health services including financial publicity.

7.4 HEALTH POLICY IN KENYA

Health policy in Kenya is guided by Kenya Health Policy 2014–2030. The policy takes cognizance of the Constitution of Kenya and the specific functions assigned to the two levels of governments after devolution. It also takes into account the Kenya Vision 2030 which is the long term development blueprint for the country, aiming to transform Kenya into a “globally competitive and prosperous and newly industrialized middle-income country providing a high quality of life to all its citizens in a clean and secure environment by 2030”.

7.4.1 Policy Principles

The Kenya Health Policy has six main principles which guide its implementation. These principles are based on an interpretation of primary healthcare principles. They include:

a) Equity in the distribution of health services and interventions

There will be **no exclusion or social disparities in the provision of healthcare services**. Services shall be provided **equitably to all individuals in a community, irrespective of their gender, age, caste, colour, geographical location, tribe/ethnicity, and socioeconomic status**. The focus shall be on inclusiveness, **non-discrimination, social accountability, and gender equality**.

b) People-centred approach to health and health interventions

Healthcare services and health interventions will be **based on people’s legitimate needs and expectations**. This necessitates **community involvement and participation in deciding, implementing, and monitoring interventions**.

c) Participatory approach to delivery of interventions

The **different actors in health will be involved in the design and delivery of interventions in order to attain the best possible outcomes**. A participatory approach should be applied when potential for improved outcomes exists. The **private sector** shall be regarded as being **complementary to the public sector** in terms of increasing access to health services, including the scope and scale of services provided.

d) Multi-sectoral approach to realizing health goals

A multi-sectoral approach is based on the **recognition of the importance of the social determinants of health in attaining the overall health goals**. A ‘Health in all Policies’ approach

will be applied to attain the objectives of this policy. The relevant sectors include, among others, **agriculture**—including food security; **education**—secondary-level female education; **roads**—focusing on improving access among hard-to-reach populations; **housing**—decent housing conditions, especially in high-density urban areas; and **environmental factors**—focusing on a clean, healthy, unpolluted and safe environment.

e) Efficiency in the application of health technologies

This aims to maximize the use of existing resources. The health sector will consider and apply technologies that are appropriate (**accessible, affordable, feasible, and culturally acceptable** to the community) in addressing health challenges.

f) Social accountability

Healthcare service delivery systems will be reoriented towards the application of principles and practices of social accountability, including **reporting on performance, creation of public awareness, fostering transparency, and public participation** in decision making on health-related matters.

7.4.2 Policy Objectives

The goal of the Kenya Health Policy 2014–2030 is attainment of the highest standard of health in a manner responsive to the needs of the Kenya population. The main objective of the policy is to attain universal coverage of critical services that positively contribute to the realization of the policy goal. Six policy objectives are defined.

- 1) Eliminate communicable conditions
- 2) Halt and reverse the rising burden of non-communicable conditions
- 3) Reduce the burden of violence and injuries
- 4) Provide essential healthcare
- 5) Minimize exposure to health risk factors
- 6) Strengthen collaboration with private and other health-related sectors

7.4.3. Policy Orientations

These define how the health sector will be structured to facilitate the attainment of the six objectives. There are eight orientations, or key action areas, where investments will be made to facilitate the attainment of the policy objectives as follows:

- 1) **Organization of Service Delivery:** Organizational arrangements required for delivery of services;
- 2) **Health Leadership and Governance:** Oversight required for delivery of services;
- 3) **Health Workforce:** Human resources required for provision of services;
- 4) **Health Financing:** Financial arrangements required for provision of services;
- 5) **Health Products and Technologies:** Essential medicines, medical supplies, vaccines, health technologies, and public health commodities required for provision of services;
- 6) **Health Information:** Systems for **generation, collation, analysis, dissemination, and utilization of health-related information** required for provision of services;
- 7) **Health Infrastructure:** Physical infrastructure, equipment, transport, and information communication technology (ICT) needed for provision of services; and
- 8) **Research and Development:** Creation of a culture in which research plays a significant role in guiding policy formulation and action to improve the health and development of the people of Kenya.