**Definition of Economics**

Economics is a science which deals with wealth creation through production of goods and services, their distributions as well as consumption. The process plays a huge task in the society because it influences the majority of our decisions in our day-to-day activities. However, defining economics has pose difficulties because there is no single acceptable definition. Therefore different economists have given economics different types of definitions. Famous among these economists were: Adam Smith, David Ricardo, Thomas Malthus, J.S. Mill, John Stuart Mill., Karl Marx, Alfred Marshall, J. B. Say, James Henderson, John Keynes, Irving Fisher, Lionel Robbins and host of others. Each of these famous economists either gave a definition which others think it is either too narrow or too broad to describe economics. Brooks (2012) is of the view that economics can be confusing therefore it is difficult to find a single or clear definition of it. However, thedefinition given by Lionel Robbins in his book, *An Essay on Nature and Significance of Economic Science* received several criticisms but remains a mainly acceptable definition of economics. Robbins defined economics "as a science which studies human behaviour as a relationship between given ends and scarce means which have alternative uses". This definition touched on major aspect of economics such as human behaviour (rationality), human needs and scarce resources, choices as a result of scarce resources and alternative uses of resources.

The decisions made by individuals, corporations and governments are vital to their survival. Therefore, studying economics and understanding its principles is imperative. Studying economics provides many helpful benefits. For instance, an individual is assisted in understanding the decisions on household issues; it assists business outfit in understanding the financial sector, the impact of government decision making on their business and latest development in business society and the global economy. It also teaches the concept of relative scarcity as a result of limited resources, supply and demand, choices, opportunities, opportunity cost and benefits and how all these can impact the decision making of individuals, businesses and government. It also teaches how these decision making processes affect the society.

Economics can also be defined as the approach to understanding behaviour that starts from the assumption that people have objectives and tend to choose the correct ways of achieving them. The first half of the assumption is that people have objectives (it is assumed that the objectives are reasonable and by extension, simple) and the second halfof the assumption, that people tend to find the correct way to achieve their objectives, is called *rationality*. The term *rationality* is somewhat deceptive according to Friedman (1990). He posited that the fact that

this term suggests that the way in which people find the correct way to achieve their objectives is by rational analysis does not translate to thefact that the decision is rational. Sometimes somewhat complicated objective can lead to apparently irrational behaviour and decision.

There are main questions which economic science has to directly deal with, and with reference to which its main work of collecting facts, of analysing them and of reasoning about them should be arranged. The greater part of the practical issues may be lying outside the range of economic science, yet it supplies principal objectives in the milieu to an economist work. This varies not only from time to time but also from place to place. For instance, questions like: what are the causes, in the contemporary world, that affect the production, the distribution, consumption and exchange of wealth? What effects are these having on the group of industry and trade; on the money and capital markets; wholesale and retail businesses; foreign trade and exchange, and the relations between employers and employed? How do all these movements act and react upon one another? How do their ultimate differ from their immediate tendencies? Marshall (1920).

Technically, economics is the study of how diverse alternatives or choices are appraised in order to best achieve a certain objective. The sphere of economics is the study of processes by which scarce resources are allocated to satisfy unlimited wants. Ideally, the resources are allocated to their highest valued uses. Supply, demand, preferences, costs, benefits, production relationships and exchange are tools that are used to describe and evaluate the market processes by which individuals allocate scarce resources to satisfy as many wants as possible (Reynolds, 2005). For example, let consider Mr. A who is stuck in making two decisions: 1. What type of car to buy? 2. Which area to live taking into consideration his place of work? (Note that an individual decision will affect two businesses, one is the car business and two is the estate management business). In either case, Mr. A can perk up his decision by devoting time and effort in studying the alternatives available in each case. In the case of the car, if he considered fuel-efficiency of the cars in his list of choices, then his decision determines with certainty which car he gets and this is considered a *rational* decision. In the case of which area to live, in his decision (on the choice of house), he may be considering closeness to his office, the traffic in the route from the area to his office, road linkages and networks etc. If the area is far from his office and the road is always with traffic problems, but he choose thearea because the house is beautiful; then he has wasted his time and efforts on considering better alternatives and maximising them; if hechoose a house nearer to his office with less traffic problem, then his time is not wasted and the decision may be considered rational. Though

we can predict his correct decision but his mistake in this situation which he may consider rational is not easily predictable.

Meanwhile, introspection or rather self-examination does not enable Mr. A to measure what is going on in B's mind, nor Mr. B to measure what is going on in Mr. A's mind. Therefore, comparing the satisfactions of different people is somehow complex. More so, we continually assume that the comparison can be made in daily life. However the very multiplicity of the assumptions actually made at different times and in different places is a confirmation of their conventional nature. Conventionally, we usually assume for certain purposes that people in comparable circumstances are proficient to have equal satisfactions. Just as for purposes of justice we assume equality of responsibility in similar situations as between legal subjects. Subsequently for purposes of public finance, we agree to assume equality of capacity for experiencing satisfaction from equal incomes in similar circumstances as between economic subjects. But, although it may be suitable to assume this, thereis no way of proving that the assumption rests on establish-able reality.

**SELF-ASSESSMENT EXERCISE**

Give various definitions of economics you know.

## 3.0 Importance of Economics

According to Adam Smith (1776), economics is concerned withinquiring into *the nature and causes of the wealth of nations*. This is because the study of economics assists individuals in the society to understand the decisions of households, businesses and governments based on beliefs, human behaviour, structure, needs and constraints as a result of scarcity. Consequently, economics is a study of man and howhe thinks, lives, and moves in the ordinary course of business of life. It deals with the ever dynamic and delicate forces of human nature. Economics as a social science gives larger opportunities for precise methods than any other social science subject. For example, the pleasures which two people derive from drinking yoghurt cannot be unswervingly compared neither can we compare what the same person derives from it at different point in time. Utility and satisfaction derivedat each point in time varies even for the same person. But if a person isin doubt on whether to spend his small naira on a pack of yoghurt or acup of coffee, or on pack of chocolate, then we state by regular custom that he expects from each of these actions an equal satisfaction.

Therefore, economy as a complicated interdependent system thus **what to produce** is more important in developing economies, as a result of

scarcity of skilled manpower. **How to produce** is another problem, due to differences in availability of resources in differing economy. **For whom to produce** is another problem of economics and it depends on the socioeconomic ideology while **how much to produce** is a problem which depends on the production, Potential and size of the market. The problem of **by whom to produce** is also very big. For example, in a capitalist economy there is usually an occupational freedom while theaim of a socialist economy is social control over productive activities. However, in a mixed economy there is the permutation of both capitalist and socialist economies. Therefore, a big concern is on how the available resources would be allocated, to get maximum total output. Basically, economics is important in order to study how people react to and allocate limited resources. However, in the process of taking full advantage of one's own benefit there is the broader benefit of efficient allocation of resources across society.

**SELF-ASSESSMENT EXERCISE**

It is unimportant to study economics. True or False? Substantiate your answer.

## 4.0 CONCLUSION

Economics is a social science that studies the relationship between scarce resources and the process of allocating them in order to satisfy unlimited wants. It studies how individuals, businesses and government goes through process of decision making in order to get most benefit from their choice having compare the cost and benefit before taken a decision. This decision is deemed rational in as much the act is influential to achieving some well-defined end. It is aimed at maximising resources which hitherto have been allocated efficiently.

## 5.0 SUMMARY

Summarily, economists are concerned with choosing the correct way to achieving an objective which may allows us to be able to predict human behaviour while their mistake may not be easily predictable. Consequently, not all decisions are rational though it is expected that individual goes through the decision making process for the purpose of maximising the scarce resource. Hence, studying economics is important to assist individual, government and businesses in their day-to-day decision making for overall benefit of the economy.

# UNIT 2 FUNDAMENTAL PRINCIPLES OF ECONOMICS

## 1.0 INTRODUCTION

This unit explains some basic economics principles that are interrelated. These principles form the basis for decision making and consideration for a particular choice by individual, businesses and firms. The interrelationship between these concepts as well as the interdependency of individual, businesses and government in an economy are better understood when the effects of their decisions are examined in relation to the economy. The decision making process affect the allocation of the scarce resource. It should be noted that the resources must be well allocated if most benefit is expected from the chosen alternative. Consequently, finding correct ways to achieve an objective determine whether the choice of such person is rational or irrational. In finding correct ways to achieve an objective, human interactions with business and government plays a roll. So also are forces of demand and supply, preference etc. as a result of sets of social values and objectives sharedby individuals in a society.

## 2.0 OBJECTIVES

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

- explain why and how available choices leads to decision making
- state that not only the explicit or out-of-pocket cost form the cost of a particular choice but the implicit or opportunity cost of the best alternative forgone is also part of the total cost
- identify that correct ways of achieving an objective leads to rationality especially when the objectives are simply based on assumption.

## 3.0 MAIN CONTENT

## 3.1 Overview of Principle of Economics

The field and discipline of economics is divided into two main areas, leveled to individuals and the society. The study of individuals, their economic decisions making, and how those decisions intermingle is called microeconomics. Microeconomics could also be defined as the study of the decisions of individuals, households, and businesses in specific markets. In contrast, macroeconomics is the study of the overall functioning of an economy such as basic economic growth, unemployment, or inflation, whereas Scarcity in microeconomics is not the same as poverty. Macroeconomics is concerned more with the up- and-down trends in the larger economy. Both of these disciplines are based on some key fundamental principles.

## 3.2 Choices

In our day-to-day life, we are usually faced with one objective or the other that requires decision making. Every decision involves choices and by extension having more of one good means having less of another good. Therefore there is usually a trade-off between the two choices. This is applicable not only to individuals but also to families, corporations, government and societies. Take for instance, if Ade has N20 and is stuck between buying an ice-cream or chocolate candy. He must take a decision whether to buy chocolate candy or go for the ice- cream. His decision might be influenced by some other factors. For example if it is a sunny day and Ade is thirsty, he might prefer ice-cream to chocolate candy. If he has discovered that taking chocolates stimulate him to a good sleep, he might go for chocolate because he need a good sleep thereafter or leave that choice because he must study thereafter. He will thus go for one of the choices which he believes is the correct one to maximise his satisfaction.

**SELF-ASSESSMENT EXERCISE**

Why do you think that individual, corporation and government make choices?

## 3.3 Opportunity Cost

In making a decision, we implicitly compare the costs and benefits ofour choices over the other one. Opportunity cost is whatever must be given up to obtain something. Let us refer back to the case of Adeabove, assuming he chooses chocolate candy because he needs it to stimulate him to a deep sleep. The ice-cream becomes the opportunity cost of buying chocolate candy. An out-of-pocket expense is the price of the chocolate i.e. N20 which is an obvious cost. Opportunity cost is an implicit cost and other less obvious costs given up to have the bestalternative. So implicit costs are cost that includes next best opportunity given up, this must be included in aggregate opportunity cost.

**SELF-ASSESSMENT EXERCISE**

Opportunity cost is an implicit cost and other less obvious costs given up to have the best alternative. Explicate on this statement.

## 3.4 Rationality

As far as basic economics is concerned, it assumes that people act rationally so as to gain the most benefit for themselves especially when benefit is compared with the associated costs. Behaviour, decision, expectation etc. can be rational or irrational. Foley (2003) defined the word "rational" to mean an act that is consistent and influential to achieving some well-defined end. He went further to define the word "irrational" as behaviour that appears to be intrinsically self-defeating or insane. For instance it is rational to pile up stones to make a wall, if you want to build a wall, but irrational to pile stones up in one place simplyin order to move them to another place, and then move them back again. The concept of "rationality" also connotes a reasonable orientation toward the real world, and an ability to explain one's actions to others in terms that they can understand. Rational people usually think at the margin by comparing costs and benefits such that changes in either the benefit or cost may change their decisions. People respond to incentive for instance changes in prices. Broadly speaking, people are more likely to buy a particular good if it is cheaper to other substitutes that are changes in cost determine their decision to buy. That is if an action becomes more costly, then there is an incentive to swap to other choices since there are substitutes for all actions.

# UNIT 3 ECONOMICS AND BASIC ECONOMIC PROBLEMS

## 1.0 INTRODUCTION

All economies are usually faced with basic economic problems that have to do with production, distribution and consumption in the economy. The basic economic problems arise as a result of resources that are relatively scarce when compared with the objectives for which they should be used. Human wants are infinite and the resources are limited. Basically, the resources can be categorised into two: 1. Human resources
2. Natural (physical) resources. As said earlier, there arises the need to make choices as a result of the limited resources (scarcity) which individual intends to maximise. There is the need to strike a balance between scarce resources and unlimited and insatiable human wants. Consequently, decision making on choices assist individual, businesses and government to allocate scarce resources efficiently. These problems led to the basic economics problems which must be answered.

## 2.0 OBJECTIVES

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

- relate basic economic concepts and problems
- understand the importance of basic economic question
- state how to apply rationality to answering the questions in the decision making process
- explain the effects of the problem on production, distribution and consumption in an economy.

## 3.0 MAIN CONTENT

## 3.1 Overview of Basic Economic Problems

Human wants are unlimited and ever dynamic due to ever changing demands and needs for resources which are limited. Therefore, in resolving the economic problems, the method of solving it spin round prioritisation of choices in order to know most pressing of the objectives and which ones to be solved first. Knowing which want can be accomplished and why and how it should be accomplished, when it should be accomplished and where it should be accomplished leads us to correct way of fulfilling the wants with the relatively scarce resources. This is because, human wants drives the economy through the demand and supply of goods and services to be used in realisation of differing objectives of individual, businesses and the government. For instance, house is a necessity not a luxury; having access to good shelter is of utmost important. House and other needs are fulfilled by patronising the product markets. Product markets obtain the needed factors of production from the factor markets after decision on basic economic problems had been answered. In Nigeria, most people are conversant with buying a land and then developing it into a house by themselves. Meanwhile, in the United State of America (U.S.A), it is a common practice to buy a house. Figure 1.1 shows a graph of real income (money available for consumption) and the price of getting a house in the U.S.A. The resources (real incomes) to satisfy human want (house) have been falling according to the graph since 1970. In contrast, home prices have been sky rocketing since 2002 such that the real wages is far below the house prices. This is an example of the most basic economic problem.


**Fig. 1.1: Real Income and House Prices**

*Source:*
http://www.democraticunderground.com/discuss/duboard.php?az=view_all&address=389x5213572

The problems such as stated in Figure 1.2 on basic economic problems and product market are discussed in the following section.

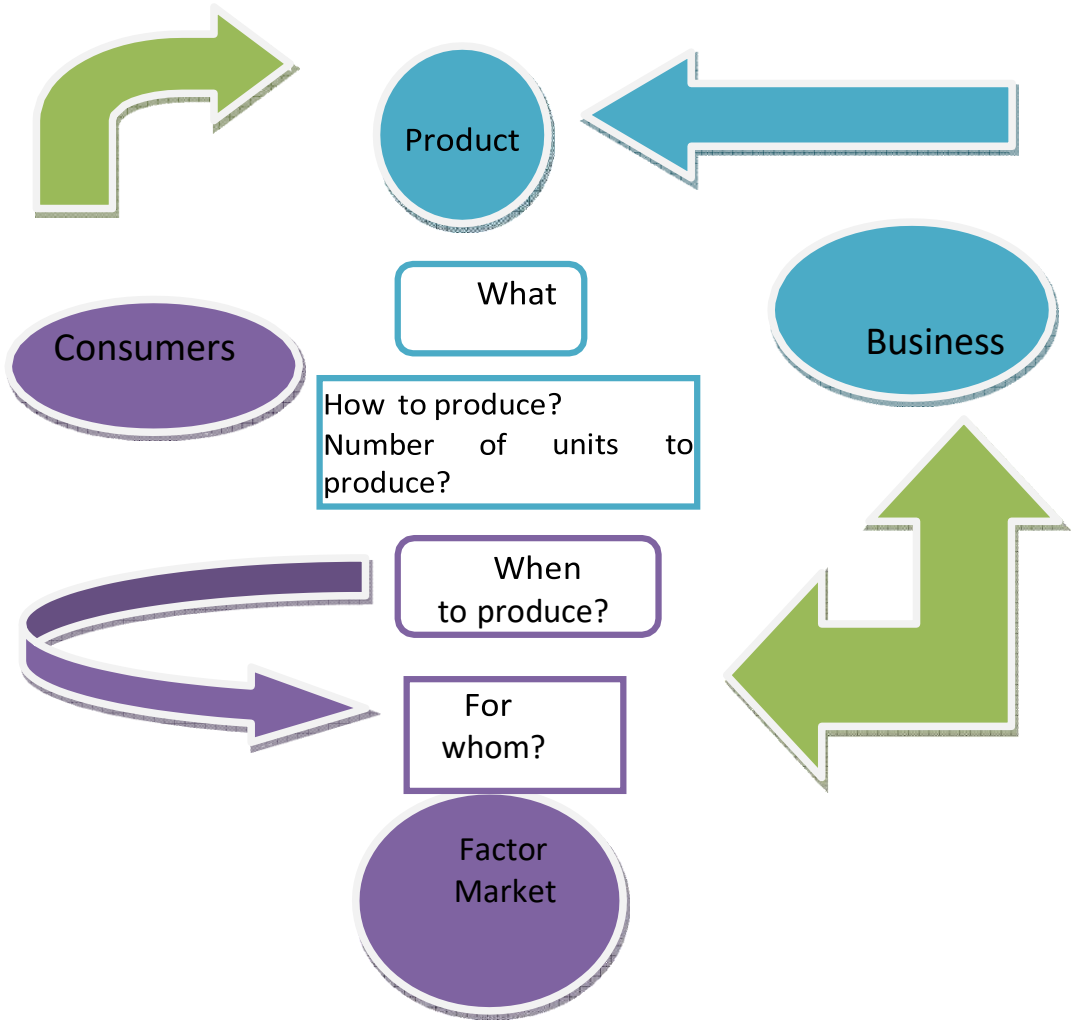



**Fig.1.2: Product Market and Basic Economic Problems**

- What to produce?
- How much to produce?
- How to produce?
- For whom to produce?
- When to produce?

## 3.2 What to Produce?

*What to produce* - thorough evaluation and rating of goods and services from most valued to least valued is a required step in arriving at a decision of what to produce. This is a vital stride to support the assumption that there is usually a trade-off between the choices and because of the comparability of different things that we valued.

## 3.3 How much to Produce?

*How much to produce*- since there are different goods and services in the marketplace competing, there is the need to determine how much of the goods or services of our choice we should produce. Demand for comparable goods or services may affect the decision making process on how much to produce. If the decision on how much to produce shows that large quantity should be produced then cost and benefit of large scale production may as well influence the decision on how to produce?

## 3.4 How to Produce?

*How to produce*-there are different methodologies for production of goods, if the decision on how much to produce shows a large quantity it may influence the method of production to be adopted. There are other factors that may affect the decision on how to produce such as availability of raw material.

## 3.5 For whom to Produce?

*For whom to produce*- this is shaped by the principles governing how goods are distributed among the members of a society. The distribution method may modify incentives that influence the behaviour of individuals.

## 3.6 When to Produce?

*When to produce*- The timing of production and the time that the final output of a good (or service) is available in the market may affect its value. By and large, goods to be consumed at some future date areperceived to have relatively lower value than those available currently for consumption. More so, producers of seasonal goods must have their new equipment and input materials ready for the next season.

## UNIT 4 THE ECONOMICS SYSTEM

## 1.0 INTRODUCTION

In understanding economics science and its methodologies, there is the need to thoughtfully consider the intricacies of people, resources, agents, institutions and their mechanism. Economics studies the relationship between the people and the institutions in a society with the limitedscarce resources in that society. Consequently, there is the need to answer basic economic problems. These questions are answered in different methods, these methods determines the type of economic system that a country is operating. As mentioned earlier, the concern of each economic determines its methodology. *Capitalist Economy is usually concerned with an occupational freedom, while the aim of aSocialist Economy is social control* over major but selected productive activities. In the same vein, Communist economy system takes control of all major sources of production. In socialist and communist economies, basic economic decision are made by the government while in Market economy, these decisions are made by the invisible hand of market forces. Another methodology of economics science is Market economy where the mechanism is based on free market and free prices. However, in a Mixed Economy there is the permutation of both capitalist and socialist economies. Therefore, a big concern is on how the available resources would be allocated, to get maximum total output.

**2.0**

## 3.0 Overview of Economics System

Different individuals live together in a community with a set of objectives and shared values. A community is a place where these individuals with set of objectives and shared values interact. In a group of people in a community or society, each individual possibly may have different and competing objectives. As a result, social institutions emerge to resolve the conflict between individual objectives. People of similar objectives usually meet together as a result of demand and supply of goods and services. Their meeting place is referred to as the market. Market is a social institution where people of similar objectives meets to exchanges values and meet their demands. In doing this, different types of economic decision making processes are adopted bythe individual and social institutions. Social institutions have its influence on human behaviour which determines their decisions in answering basic economic problem.

**SELF-ASSESSMENT EXERCISE**

Where do people of similar demand and supply usually meet?

## 3.1 What is Economic System?

An economic system consists of individual, institutions and their interaction in the process of answering basic economic problems. Individual and institutions work together to answer basic economic problems in relation to the resources in the society, its scarcity and how these scarce resources can be allocated to meet conflicting and diverse objectives. The mechanism of production, distribution and consumptions varies in our society. This is because each society answers the basic economic problems in different ways. How each society answered the basic economic problems; that is the economic decisions they make; determines the type of economic system they will operate. In the economic decision making, we have the households as the majoractor followed by the institutions and then the government. North (1990) posited that institutions are the rules of the game in a society. Formally, they are the humanly devised constraints that shape human interaction which means they influence human behaviour. In consequence they structure incentives in human exchange, whether political, social, or economic. Institutional change shapes the way societies evolve through time and hence it is the key to thoughtful historical change. An

economic system must be able to answer basically three of the economic problems such as what to produce? That is what types of goods and services to produce. How to produce? That is what the resources available that can be employ for production of goods and services. For whom to produce? That is; who is the receiver of the final products from production. Hence an economic system encompasses various processes of organising and motivating labor, producing, distributing, and circulating of the fruits of human labor. Fruit of labor refers to products and services, consumer goods, machines, tools, and other technologyused as inputs to future production, and the infrastructure within and in the course of which production, distribution, and circulation arises.

**SELF-ASSESSMENT EXERCISE**

What determines the type of economic system a society operates?

## 3.2 Types of Economic Systems

Economic decision made by a society shapes the economic system of that Country. The Figure 1.3 shows the basic economic systems:

- Traditional economy
- Controlled economy
- Free market Economy
- Mixed economy

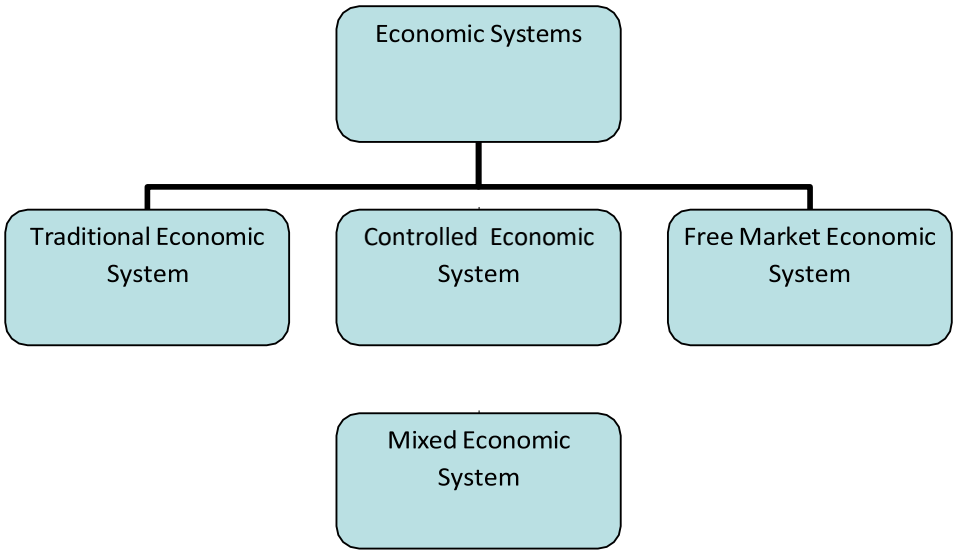
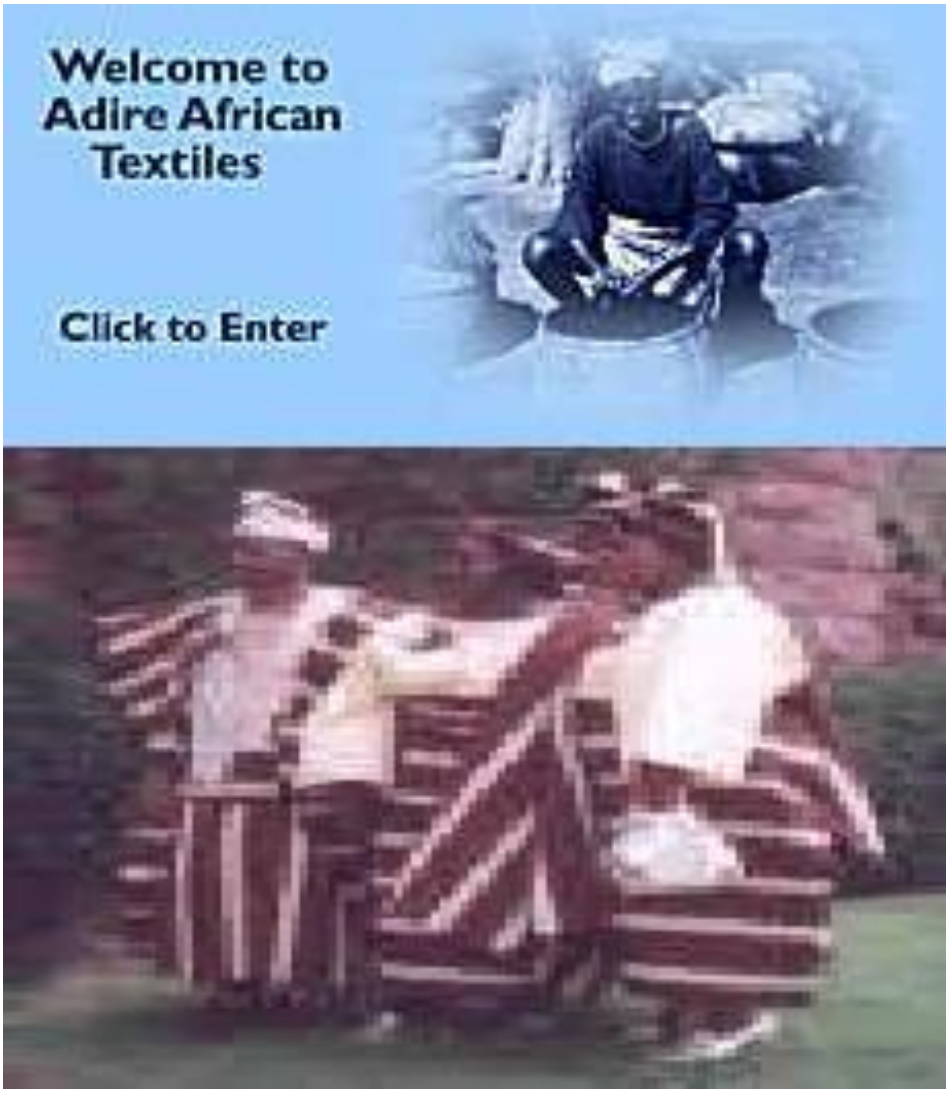



**Fig.1.3: The Economic System**

**Traditional Economy**

In a traditional economy, the economic decisions are made based on believes, norms religion and customs of that society. Specifically the economic decision on economic questions of what to produce, how to produce, for whom to produce, where to produce etc. are made based on believes, religion, customs, habit and norms of that society. For instance, the economies of some countries are believed to be traditional. Arab and African Countries such as Saudi Arabia, Nigeria, Iran, Pakistan, Kenya, Ghana, Qatar etc where people produce what they learnt their forefathers produced, following their custom of producing it; sell products that are produced the same way their forefathers produced it are traditional economies. For instance in Nigeria, people of Abeokuta is known for the 'adire' cloth business while the Oke-ogun people continue to produce the 'ofi' traditional attires as worn in the pictures below.



Barter-direct exchange of goods and services with other goods and services are part of the norms. For instance in Yoruba land, an exchangeof food for services called ‘agbaro’ is still in operation in some part ofthe land. ‘Agbaro’ means that a group of friend will assist a member ofthe group to clear a portion of land while they receive in turn, food for their services instead of money. This is done based on custom of friendship.

**Strengths**

There is usually a strong family or societal relationship between the individuals in the traditional economy. Hence, there may be economic securities and safety for members of the society. This in turn may promote economic stabilities in the traditional economy.

**Weaknesses**

Lack of innovation or resistance to innovations. Such technical know- how may be monopolised by the family that specialised in a certainprofession. Modern ideals may not be welcome because they usually want to do things the same way it was done before they were born.

**Controlled Economy**

In a controlled economy, it is the government that makes the economic decision and it is solely done meaning that there are no private sector initiatives. Government planners decide on what to produce, how many shoe industry will produce the number of shoes the government decided should be produced. How to allocate resources to the producer is the business of the government planners. Controlled or Planned economies are usually associated with Socialism and Communism where government determines the wages of workers, the prices of goods and services and level of output. Former Soviet Union, Cuba, Germany, Russia, North Korea etc are close examples of Controlled or Planned economies. Albeit, Germany and Russia seems to have move to mixed economy as it is the case with countries under other economic system.

**Strengths**

Ability to accomplish social goals quickly. Planning for more labor in production in a control economy can reduce unemployment. There is plausible provision of more economic securities to the participant in this economy. This type of economy may be able to provide an equal distribution of income and goods and services.

**Weaknesses**

It is difficult for Controlled economy to match consumer's wants and needs with the productions. Complexity of production may lead to production problems. The economic participants may have to depend ona small number of economic choices as provided by the government planners. There may be overproduction of some products and underproduction of other products.

**Free Market Economy**

Free market economy or market economy is an economic system where the basic economic decisions are made by the buyers and sellers, individual households and businesses in the economy through the price mechanism. Unlike the controlled economy where private sectors arenon existence; free market economy allow individuals to operate their own businesses and answer economic problems using their owned resources, make profits and determine the prices of goods and services. Companies and businesses can choose cost effective method of production to maximise profit and minimise cost of production. For example, adire cloth can be made using the traditional hand methods, the modern machine and combination of the two methods. If the combination of the two methods is the cheapest method of production, then the company will go for it. It should be noted that Government interventions in free market economy is not allowed.

**Strengths**

There may be a good opportunity for innovation and incentive to produce. There is usually economic freedom in a free market economy. There may be a direct link between the buyer and the seller through price mechanism.

**Weaknesses**

There may be few incentives to protect the environment. Market power may be concentrated in the hand of few. People without marketable skill may lack adequate protection.

**Mixed Economy**

The economic decision on what to produce; how and where to produce; for whom to produce; is made jointly by the government and the private sectors in the economy. This is achieved through the demand and supply mechanism (price and profit) based on free market enterprise. Mixed economy is a combination of controlled economy and market economy.

Most economies of the world show evidence pointing to characteristics of mixed economy. Therefore, we may conclude that there is no pure controlled; traditional or free market economy. Countries like Nigeria, United State of America, United Kingdom, Malaysia, China and all modern economies are mixed economies. It should be noted that in a mixed economy, government intervention is limited somehow to market regulation in the business and household sector as well as input and output market. This is because businesses own resources, they also determines how the resources are put into use. That is what to produce,to whom to produce and how to produce. There should not be government intervention in a truly free-market economy. But as a resultof the mixed economy, government serves as regulators to some sectors or industries in the economy.

**Strength**

There is effectiveness in achieving social goal. There is likelihood or providing economic security

**Weaknesses**

There may be lack of incentives to create quality goods and services. There may be lack of environmental protection.

# MODULE 2 DEMAND AND SUPPLY

## 1.0 INTRODUCTION

Goods and services usually referred to as 'commodities' are produced by firms while household individuals are the consumers of the commodities. Firms are the 'sellers' while households are the 'buyers'. Sellers and buyers exchanges goods and services for money in a place called 'market'. There are different types of market, we have the physical market where sellers and buyers interact, we have the market through intermediaries such as the banks and finance institutions and we also have market over telephone, internet, and emails orders. Basicallythe sellers (supply) and the buyers (demand) interaction in the market form the 'market force'. Market force is the forces of demand and supply which determines the quantity of goods and services as well as their prices. Their prices in turn determine the quantity that we be bought and sold. Meanwhile price is defined as the rate at which a commodity is exchanged for money or other units of exchange. Price tends to rise when there is little supply of goods and services. We referto this situation as 'scarcity'. When there is plentiful supply (by competing firms-supply) then we have 'excess' of goods in the market. This usually brings the price down. Therefore, "Price determination" is one of the core focuses of microeconomics.

## 2.0 OBJECTIVES

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

- apply market operation in answering the what, how and for whom goods and services are produced
- explain how firms transforms resources allocated (input) into product (output)
- highlight the circular flow of supply and demand between households and firm.

## 3.0 MAIN CONTENT

### 3.1 Firm as Primary Producing Unit

Firms and households are made up of people in the society who are performing different functions with different **human behaviour**. The role of firm is primarily to produce. For this to be achievable, some individuals must decide to produce a particular product(s). In doing this, resources must be allocated (land, labour, capital, building etc); allocated resources are transformed into what we call ***output*** while the resources allocated are the **input** to generate the product. For example, factors such as land on which National Open University of Nigeria isbuilt; the buildings; the academic and non-academic staffs (**labour**); federal government funds to the university (**capital**) are all combined together as input to assist in producing education and graduate (**output**) for this economy in different sector. Firms engage in production for the purpose of maximising profits for those people who come together to established it. They engage in production so as to *sell their products at a price higher than the cost price at production*. **The difference between the selling price and the cost price is known as the 'profit'**. However, those who manage; organise and coordinate and take decision in a firm are called **entrepreneur**.

**SELF-ASSESSMENT EXERCISE**

Who is an entrepreneur?

### 3.2 Households as the Consuming Unit

Individuals, group of people and or family or unrelated people sharing a house are known as **household.** These set of people form entrepreneurs that take risk of producing products by employing employees (labour) and funding the process of transforming resources (input) into a particular product (output). There are different decisions made at household level based on their taste; preferences and what they can

afford to do with their limited incomes. Therefore households are the primary consumer of the firms' output. Households' income, taste and what they prefer has effects on what they consume. In essence theirincome, taste and preference determine the units of output of the firmthat they will buy. They go through decision-making to determine what they like and how to prioritise before choices are made. Different preferences and limited resources (income) are common factors to every household. Households' income determines what they consume from the ***product market***. **Product or output market is a market where goods and services are exchange.** In the output market, **firms supply** goods and services that the **households demand**. In the same vein, at **the input market**, **households supply** labour that the **firms demands. Input market or factor market is a market where resources used to produce products are exchange**.

**SELF-ASSESSMENT EXERCISE**

Household is a decision-making unit in the economy. Explain

## 3.3 Demand and Supply Circular Flow

From the above definition of input or factor market and output or product market, it can be infer that demand and supply flow from firm to households and in turn from household to firm in a circular form. The decision on how much to produce which is taken after deciding on what to produce determines their supply to the output or product market. Ifthe supply is determine, there is the need to take a decision on what is the required input needed to achieve the supply target. For example, if Nasmalt Company decides that a million units of Nasmalt drink is to be produced and supply to the households who demands to buy; assuming the question of ***land*** and building as factors of production might have been taken care of. **Land market is a factor market where land and other tangible assets are supply to firms and in return households obtain rent as rewards**. The question of labour and capital will also be raised. These two are sourced from ***Labour*** and ***capital market***s whichare types of factor markets where households supply land resources tothe firm. **Labour market is a type of input markets; it can be defined as a market where the factors of production or input are exchanged**. Household supplies work to the firm in exchange for wage payment. Wage payment or income to the household also flow back again to the firm in form of ***capital***. **Capital market is a market where the households supplies their savings from income that flow to them from firm back to the firm for future profit claim or for interest**. Therefore, services flow from household to firms through the ***labour market***. In contrast, products produced by labour for the firm flows to household through the *product or output market*.

**SELF-ASSESSMENT EXERCISE**

Define the following:

a. Labour market
b. Land market
c. Capital market

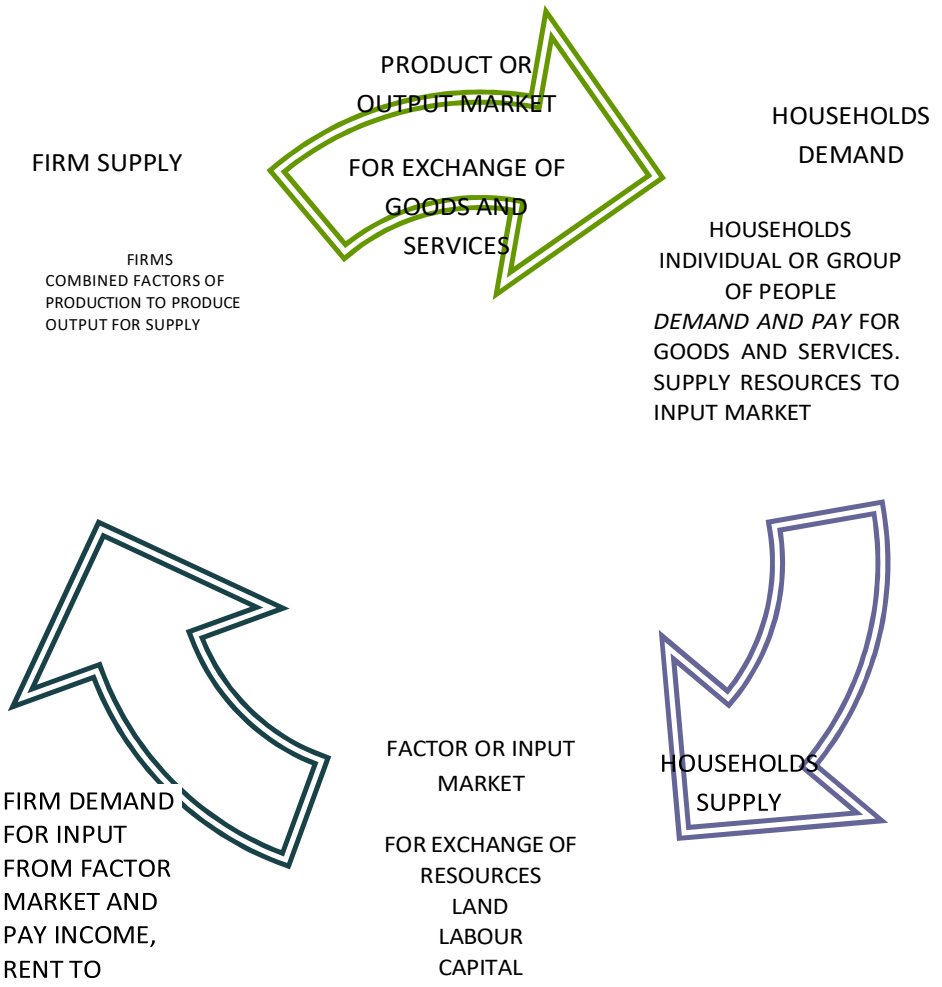



**Fig. 2.0: Demand and Supply Circular Flow**

## 4.0 CONCLUSION

There are two basic decision-making units in an economy namely the households and the firms. The households demand for goods and services (products) and they supply the factors of production. While the firm supply goods and services and demand for factors of productions – land, labour and capital- from the households. Each of them gets rewards for the exchange. Wages and rents are the rewards for

households while money paid for goods and services and skill of labour are rewards to the firms. Land, labour and capital are the three keyfactors of production. Each of them is available at the factor or input market. Goods and services are available at the output market. Supplies and demands from household and firms form the economics activities in the economy and it moves in a circular flow.

## 5.0 SUMMARY

Firms are the primary producing unit in an economy; they produce products after answering the question what to produce? How to produce? For whom to produce? They employ the factors of production (input) to produce product(s) to be sold in the market to the buyers at a price higher than the cost price in order to make profit. Economic activities within the economy between the firms and the households moves in a cycle with each party been rewarded in exchange of goodsand services as well as wages and rent. Many markets are involved; the firm demand for labour from labour market, land from land market, capital from capital market. These three are the main factor markets also known as the input market. Supply of goods and services by the firm is made available to the households in the output market.

# UNIT 2 DEMAND

## 1.0 INTRODUCTION

*Quantity of a commodity purchased by an individual or family or group of people at different prices at a given time and place is known as* **the demand for such commodity**. With this definition, there is a link between the various commodities and households' purchase. Households in various places are the consumer of firms' commodity;they therefore behave in a predictable habitual pattern such that increases in prices of commodity are responded to by the consumer.Usually consumer tends to buy less when there is an increase in the price of a commodity but buy more when there is a decrease in the commodity price. It can be inferred that price and quantities are inversely related. In other words, **quantity demanded** will decrease when there is a rise in price and it increases when there is a fall in price. In essence, priceaffects quantity demand for a commodity. It should be recall that in the last unit, we understand that income of households also determines what they consume. Whatever quantity they wish to demand for is regulatedby their limited resources to purchase. However, price and income are not the only factor that can affect quantity demanded. One other factor earlier mentioned is the preference of households. Therefore some factors affecting demand for a commodity which are considered constant are listed as follows:

- households' income
- households' preference and taste
- prices of a related commodities
- number of consumers
- expectation of future price change.

## 2.0 OBJECTIVES

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

- discuss price mechanism
- explain demand for a commodity in relation to changes in price
- elucidate on factors that determines quantity demanded
- explainthe movement and shift on the demand curve.

## 3.0 MAIN CONTENT

### 3.1 Demand and Price: A Link

Determination of prices of commodity is known as "***price theory***" in economics. This theory is the backbone of microeconomics and it is basically connected to the theory of demand and supply. Income and substitution effects are better use in explaining the link between demand and price. A sudden increase in price of a commodity means a reduction in the consumption power of the consumer; as a result of fall in their real income. This situation is referred to as ***income effect***. ***Income effect*** *isthe effect of a change in price on quantity demanded as a result of price changes which made them worse off*. Meanwhile, **Quantity demanded** can be define as the amount of goods or commodities that consumers are willing and able to buy at a given price over a given period of time. In a situation like this people will feel poorer because they will not be able to buy so many goods that the same money was buying before the increase in price. Household therefore may have to cut down the amount of items they always consume. For instance, sudden increase in the petrol price on January 1st, 2012 in Nigeria has affected prices. Cost of transportation had not only gone up by almost 50 per cent but prices of other items has sky rocket too. Household that consumes may be 10 liters of petrol that use to cost 650 naira on their generator will now have to pay 970 naira to get the same liters of petrol. This household has three options:

1. It is either they reduce the use of the generating set so as tocontinue to buy 650 naira petrol. That means cutting down the numbers of liters they use to buy.
2. They may have to spend 970 naira to buy 10 liters but cut down on may be the food items, drinks, beverages or whatever theythink they can afford to cut down so as to spend same real income wisely.
3. The last option is to switch to alternative products or substitutes. Since the substitutes will be cheaper in price. This option is referred to as **substitution effects**.

***Substitution effect*** *is the effect of a change in price on quantity demanded as a result of switching by consumers to alternative or from alternative products*. By implication, quantity demanded of some itemsthe household is consuming must be cut back as a result of price increase. This shows a general relationship between price and consumption. **A rise in prices of goods and services will mean a fall in quantity demanded**. Consequently, **a fall in prices of goods and services will mean a rise in quantity demanded ceteris paribus (all things being equal).** This relationship is referred to as **Law of Demand**.

**SELF-ASSESSMENT EXERCISE**

What is income effect and substitution effect? Explain the link between price and demand.

## 3.2 The Demand Curve

Referring back to law of Demand above, a rise in price of goods will translate to a fall in quantity demanded. In contrast, a fall in price means a rise in quantity demanded. However when definite quantities are demanded at particular prices for a particular commodity especially when the lower and higher prices are considered, then we have what we call **demand schedule**. For example, if Ade, Joke, Ola and others havethe following hypothetical demand schedule for beans as shown in the Table 2.1; then how many kilograms of beans is demanded monthly?The total **quantity demanded** at each price by Ade, Joke, Ola and others is the **market demand schedule** for the month.

**Table 2.1: Demand Schedule**

| **Quantity Demanded for Bean Monthly** | | | | | |
|---|---|---|---|---|---|
| **Price** | **Ade** | **Joke** | **Ola** | **Others** | **Total** |
| **Market Demand (naira per kg)** | | | | | |
| 300 | 25 | 10 | 5 | 360 | 40 | 0 |
| 280 | | 35 | 20 | 15 | 440 | 500 |
| 250 | | 45 | 30 | 25 | 500 | 600 |
| 200 | | 60 | 35 | 30 | 545 | 670 |
| 150 | | 75 | 45 | 35 | 645 | 790 |
| 130 | | 90 | 60 | 40 | | 1000 |

***Demand schedule*** *therefore is table showing the different quantities of a good and services a person is willing and able to buy at various prices over a given period of time.* However, relationship between quantity

demanded and prices shown in a demand schedule can be graphically presented with price on the vertical axis and quantity demanded on the horizontal axis. That is quantity demanded by Ade, Joke, Ola; others as well as market total demand can be represented in a graph known as **demand curve**. In short demand curve is a graphical representation of **demand schedule**. A graphical representation showing the relationship between price and quantity demanded of a good at a particular point in time is called **demand curve**.

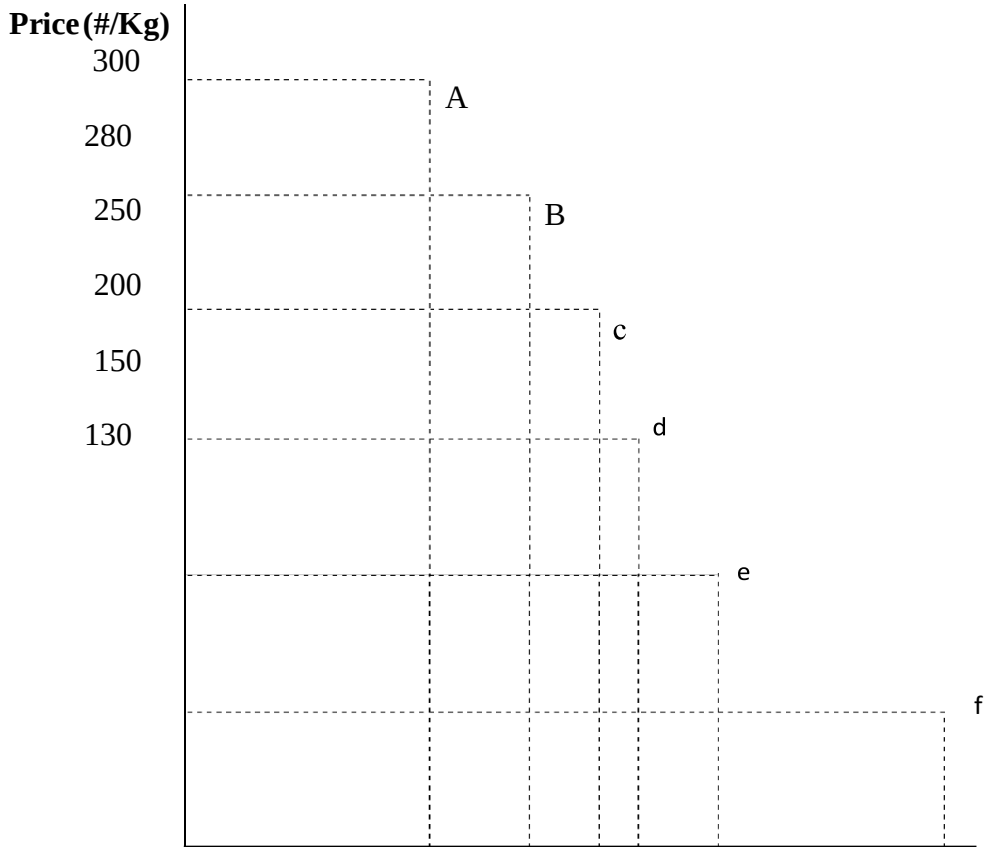



**Fig. 2.1: Beans Market Demand Curve (Monthly)**

**Quantity Demanded**

Joining together the points a, b, c, d, e, and f will produce a downward sloping demand curve. The curve is downward sloping because when the price is too high, only few consumers that can afford it will buy. Meanwhile, a fall in price make consumption easier and many consumers shall be willing to buy the product.

**SELF-ASSESSMENT EXERCISE**

Differentiate between demand schedule and demand curve.

## 3.3 Factors Affecting the Demand Curve

It was mentioned earlier that the demand curve and demand schedule are constructed based on assumption of *ceteris paribus* that is *all things being equal.* This implies that other factors remain (constant) unchanged except price. Unfortunately this assumption that other factors remain constant is itself not constant. Note that price is not the only determinant of quantity demanded. Demand is also affected by many other factors earlier mentioned. They shall be discussed under this section. As a reminder, the factors are: Households' income; Households' preference and taste; Prices of related commodities; Number of consumers;Expectation of future price change.

**Households' income**

Households are the basic consumption unit in the economy; households' income is the total sum of the earning of such consumption unit. When there is a rise in households' income, it is expected that there households' demand will rise because increase in income meansincrease in their consumption power. So they tend to buy goods that they can't hitherto afford to buy. They also tend to go for quality and more costly goods instead of inferior goods leading to increase in quantity demanded. This will increase demand for various commodities. In contrast, when households' income decreases, they cut back on quantity demanded leading to a fall in quantity demanded.

**Households' preference and taste**

Preference and taste of individual consumers in the households is another determinant that can affect quantity demanded. Preference and taste are influenced by some other factors as well. Preference for a commodity for instance may be as a result of religion or customs. While the Yoruba have preference for Ankara, the Hausa have preference for Guinea brocade and Ibo have preference for Judge and special batiksdue to their various customs. Taste may be affected by fashion-peopletend to demand for commodities that is in vogue or that are consideredas fashionable at a particular time. Branding of a good may be an attraction to increase quantity demanded of it. Advertisement, health reasons and level of desirability for a good are other factors which may increase or decrease quantity demanded, and hence the demand curve.

**Prices of related commodities**

Some commodities are related especially when they are consume together such as bread and butter, bread and cheese, tables and chairs, vehicles and fuel, shoes and polish etc. Such goods are referred to as **complementary goods**. How does this affect demand curve? Take for example, if the new increase on bread prices has led to a fall in demandfor bread, it is expected that demand for margarine or butter or cheese will also fall. Another category of related goods are **substitute goods**. **Substitute goods** are goods that can replace one another in consumption. Examples of substitute goods are margarine and butter, Milo and bournvital or ovaltine, coffee and tea, personal car and public transport etc. Take for instance if you decided to go to the Cinema with your personal car you cannot at the same time go through the public transport. You can decide to take tea because coffee is too expensive for you. You may settle down for ovaltine because it is cheaper than Miloand bournvital. These kinds of decisions will bring a fall or a rise to the one you decided not to buy and the one you decided to buy respectively.

**Number of consumers and income distribution**

The population in a geographical location may affect quantity demand positively or negatively. Nigerian population has increase the demand for cars when compare to another country like Cameroun or Benin Republic where Nigerians usually import cars. Distribution of income among households in the economy is another factor that can affect demand for commodities. As said earlier income of each household determines their consumption power and demand for goods and services. Distribution of income in an economy had created three different income groups namely: The high income group; the low income group and the middle income group. 2012 increase in petrol has affected the consumption power of many households especially households in the lower income group who travel within the countrywith public buses. Most of them are market women and men who are paying double cost for transportation of their goods and services. Hence, they are forced to increase commodities' prices.

**Expectation of future price change**

Expectation of a rise in price of goods may force people into what is called 'panic buying'. Such action is to safeguard against scarcity usually generated when price rises. Seller may hoard the goods so that buyers will be force to buy at the new price anywhere they're able to get supply. Hence, 'panic buyers' demands to buy more of the goods before the prices goes up and becomes higher than normal. This action increases the demand for goods.

**SELF-ASSESSMENT EXERCISE**

You have decided to buy a tooth-paste but need to make a choice between Close-up whose price is slightly high and Dabur Herbal tooth- paste. You discovered that three third of the customers that comes intothe shop where you're shopping are visiting Dabur Herbal tooth-paste's shelf and you decided to buy Dabur Herbal.

Is Close-up and Dabur Herbal substitute or complement? How will this customers' decision affect the demand curve?

## 3.4 Movement and Shift in Demand Curve

In a situation where other factors that can affect quantity demanded changes, then the demand curve at point a, b, c, d, e, and f (in the demand curve above) will have to shift. The points a, b, c, d, e and f are the movement along the demand curve. However, when we talk of shift in the demand curve as a result of changes in other determining factorsof demand aside price; then we mean a complete bodily shift of the curve from left to right or right to left. For example, if the price of beans (as stated above) remains unchanged from 300, 280, 250, 200, 150 and 130. Let assume that the quantity demanded changed as a result of a rise in income of the household units- the consumption units in the economy. Then the new total market of the quantity demanded increased as shown in the Table 2.2:

**Table 2.2: Quantity Demanded for Bean Monthly**

| **Price Demand(New) (naira per kg)** | **Total Market Demand(Initial) Kg** | **Total Market Kg** |
|---|---|---|
| 300 | 400 | 500 |
| 280 | 500 | 600 |
| 250 | 600 | 700 |
| 200 | 670 | 800 |
| 150 | 790 | 900 |
| 130 | 1000 | 1200 |

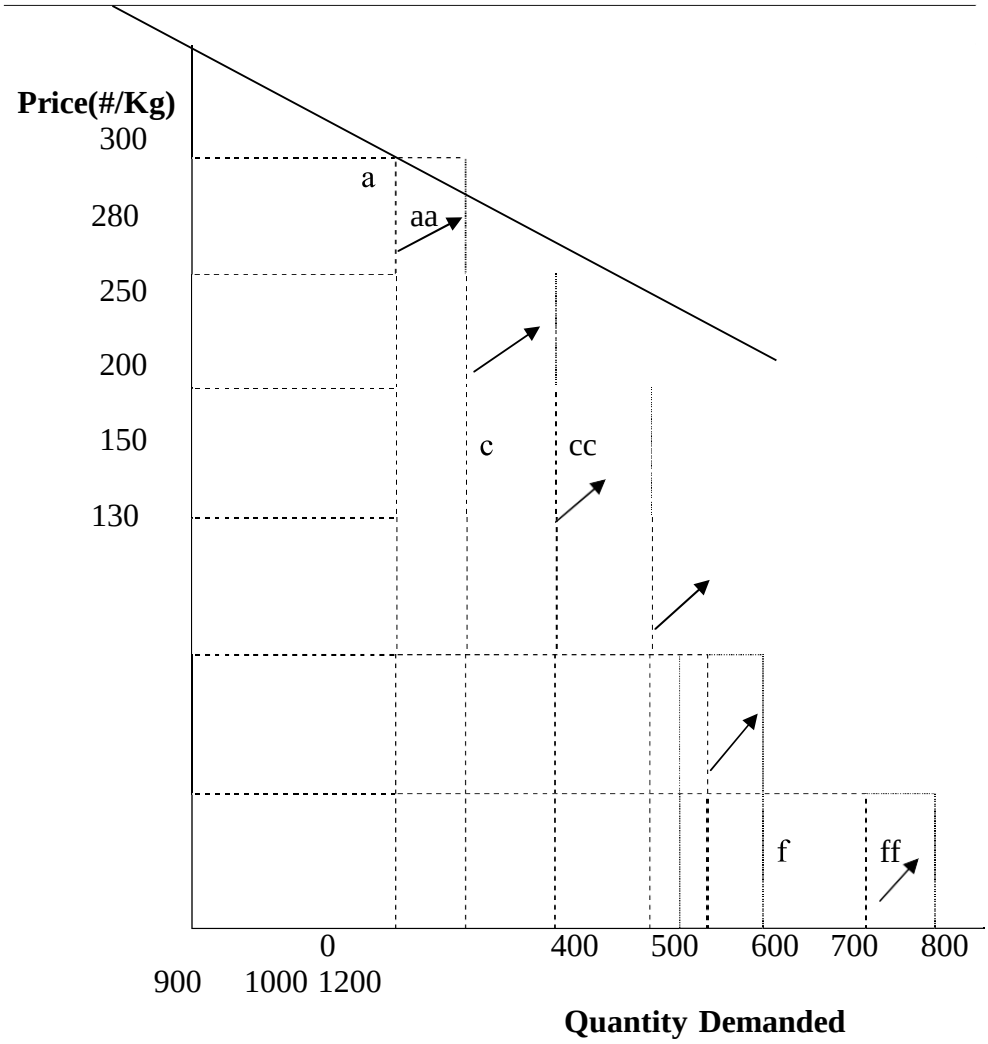



**Fig. 2.2: Beans Market Demand Curve (Monthly)**

Looking at the above Table 2.2, you will notice a shift in the demand curve due to increase in quantity demanded. The demand curve shifted from a to aa, b to bb; c to cc; d to dd; e to ee and f to ff. Joining together the new points aa, bb, cc, dd, ee and ff shows a complete bodily shiftfrom left to right side of the graph as shown by the arrows. Meanwhile,if the quantity demanded decreases as a result of other determining factors aside price, then the shift will be from right to left as shown in Figure 2.3:

**Table 2.3: Quantity Demanded for Bean Monthly**

| Price Demand(New) (naira per kg) | Total Market Demand(Initial) Kg | Total Market Kg |
|---|---|---|
| 300 | 400 | 350 |
| 280 | 500 | 300 |
| 250 | 600 | 400 |
| 200 | 670 | 500 |
| 150 | 790 | 600 |
| 130 | 1000 | 700 |

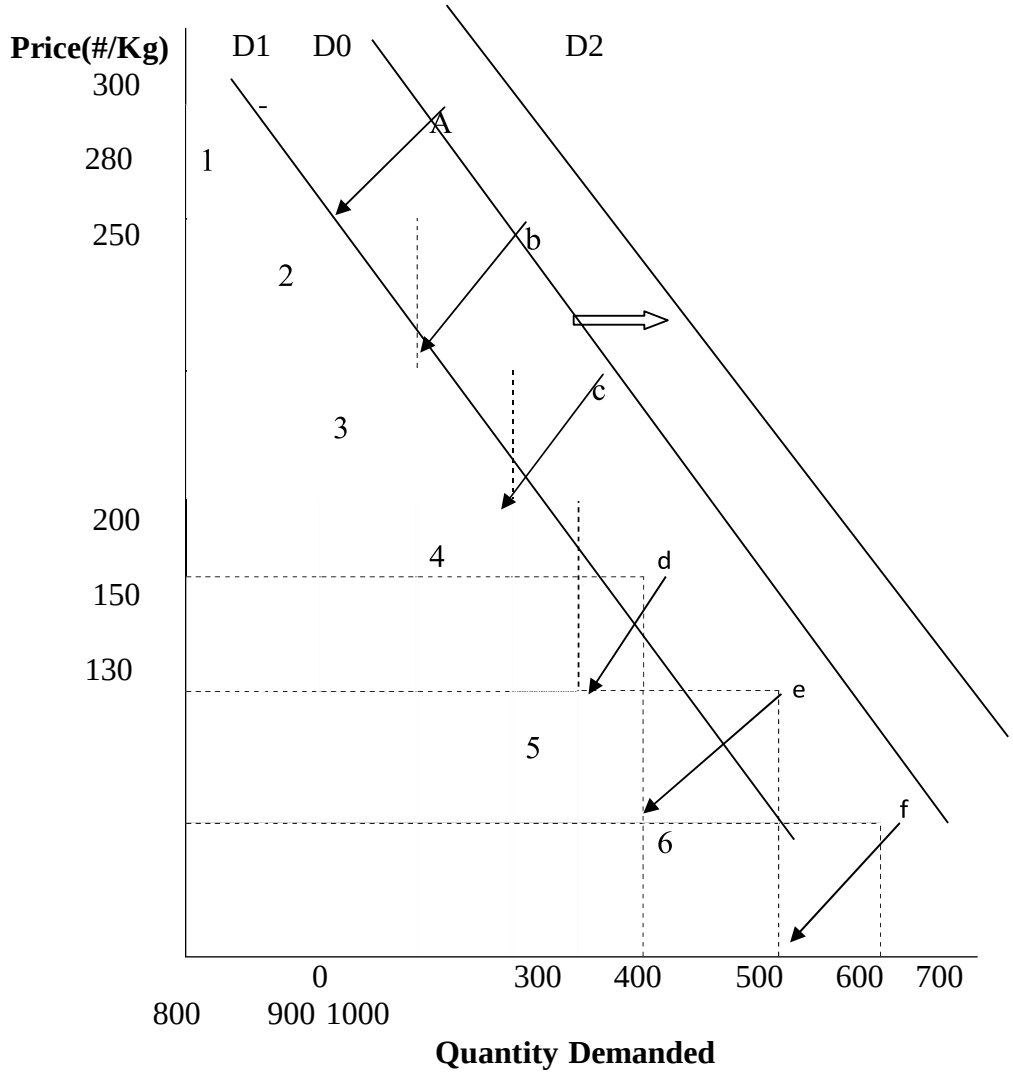



**Fig. 2.3: Beans Market Demand Curve (Monthly)**

From the above graph, notice a shift from right to left as indicated by the arrows. The demand curves shifted from points a, b, c, d, e and f to 1, 2, 3, 4, 5 and 6 respectively. Joining the new points 1, 2, 3, 4, 5 and 6

together will produce a complete bodily shift of the demand curve from D0 (right) to D1 (left) due to fall in quantity demanded may be as a result of fall in households income; change in taste and preference of consumers; bad effect of income distribution; fall in number ofconsumers of the product which may occur for instance if the company producing the product was reported in the news of unethical practices or accused of adding a harmful chemical to the product. And vice versa for the shift from left to right that is from D0 to D2 when there is increase in quantity supplied as a result of changes in the above mentioned factors. There is a simple equation of demand function is stated below. This demand equation is often used to relate quantity with just onedeterminant that is price. Note that if other determinant of price changed this equation will also change. This shall be useful under discussion on market equilibrium in this module.

***Qd = a – bP***
*Where*
***Qd*** is the change quantity demanded
***P*** is the price

The above equation is based on assumption of *ceteris paribus* (all things being equal that is only price changes but other determining factors of demand remain constant). For example if consumer income increases the equation will change to:

***Qd = a + bY***

Also, the two factors can be combined to give
***Qd = a – bP + cY***

# UNIT 3 SUPPLY

## CONTENTS



## 1.0 INTRODUCTION

Relationship between price and quantity demanded is referred to as demand. The opposite of this is what is known as **supply**. The relationship between the price and quantity of a good offered to themarket for sale is known as s**upply**. In the last section, discussion on quantity of commodity demanded and factors that can reduce or increase quantity demanded by households are discussed. The effects of price on the demand curve known as 'movement on the demand curve' as well as the effects of other factors which are known as 'the shift on the demand curve' were explored. Similarly under this unit, a link between supply and price; supply curve and factors that can cause a movement on the curve and or a shift on the curve shall be discussed.

## 2.0 OBJECTIVES

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

- explain supply of a commodity in relation to changes in price
- elucidate on factors that determines quantity supplied
- enumerate the movement and shift on the supply curve.

## 3.0 MAIN CONTENT

### 3.1 Supply and Price: A Link

When the price of a commodity is high may be as a result of the demand for it, which informed the firm's decision to produce more. Then the quantity supply to the market will increase. Firm's decision to increase number of output of the product requires that the firm put in additional

input. These additional inputs shall increase the firm's cost of production. For instance, increase in wages to the labour for overtime work to meet the targeted number of output and other cost on factor of productions. Therefore, consumers should be ready to buy at the new price if the firm is to supply outputs that will meet their market demands. The increase in price however indicates that the firm which has incurred additional cost of production should have additional profit. Consequently, firm shall be encouraged to produce more so as to earn more profit. As a matter of fact, firm may have to prioritise such product for production while less profitable product may suffer for it. Supply is defined as quantity of commodity a producer is able to produce and willing to sell at a given price in a given place at a particular point in time. Meanwhile, as prices fall in the market; may be as a result of over- supply by many firms who wants to make more profit while meeting the market demand; then supply will fall. This is known as the 'Law of Supply'. The higher the price the higher the quantity supplied, the lower the price the lower the quantity supplied.

**SELF-ASSESSMENT EXERCISE**

State the law of supply

## 3.2 Supply Curve

**Table 2.4: Quantity Supplied for Bean Monthly**

| Price | Firm A | Firm J | Firm O | Others | Total Market Supply (naira per kg) |
|---|---|---|---|---|---|
| 300 | 25 | 10 | 5 | 360 | 400 |
| 280 | 35 | 20 | 15 | 440 | 500 |
| 250 | 45 | 30 | 25 | 500 | 600 |
| 200 | 60 | 35 | 30 | 545 | 670 |
| 150 | 75 | 45 | 35 | 645 | 790 |
| 130 | 90 | 60 | 40 | 810 | 1000 |

***Supply schedule*** *therefore is table showing the different quantities of a good and services a producer is willing and able to produce at different prices over a given period of time*. However, relationship between quantity supplied and prices shown in a demand schedule can be graphically presented with price on the vertical axis and quantity supplied on the horizontal axis. That is quantity supplied by firm A, firmJ, firm O, others firms as well as market total supply can be representedin a graph known as **supply curve**. In short supply curve is a graphical representation of **supply schedule**. A graphical representation showing

the relationship between price and quantity supplied of a good at a particular point in time is called ***supply curve***. A supply curve may be individual firm supply curve or a market supply curve

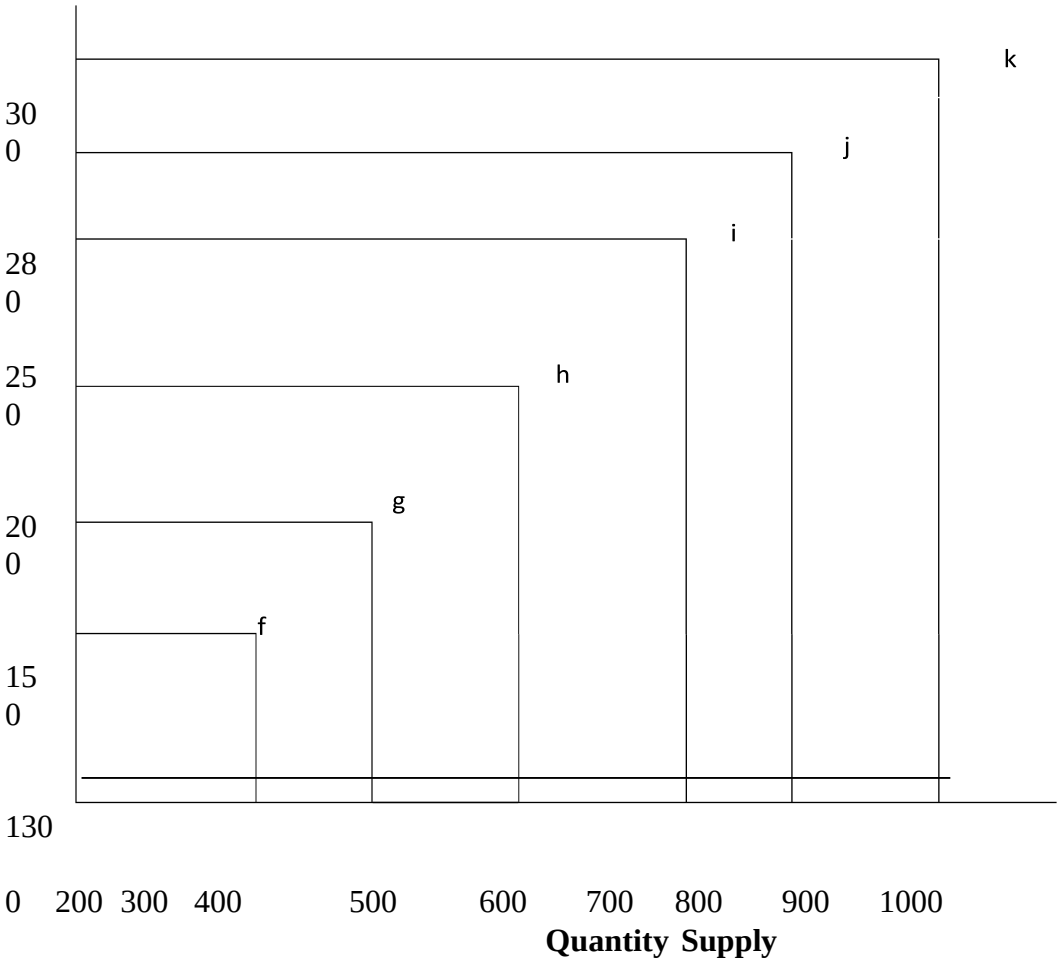



**Fig. 2.4: Beans Market Supply Curve (Monthly)**

Joining together the points f, g, h, i, j, and k will produce an upward sloping supply curve. The curve is upward sloping because when theprice is too high, only then will firms be willing to produce more to make more profit. Meanwhile, a fall in price make consumption easier and many consumers shall be willing to buy the product then the firmwill reduce supply and the market supply will fall.

**SELF-ASSESSMENT EXERCISE**

Explain how price and supply interact.

## 3.3 Factors Affecting Supply of Commodity

Price is the first factor considered to be a major factor that can affect demand while other factors are held constant. However, we have seen from the discussion on demand and demand curve that these factors do change too. When these occur the focus changed from movement along the demand curve to a bodily shift in the demand curve. This is ditto for supply curve, there are other factors aside price that can affect supply curve such as cost of production, change in production techniques, change in price of factor of production, price of alternative goods, price and future expectation, number of buyers and sellers. How each of these factors affects the supply curve is discussed below:

**Cost of production**

Change in input price, government policy, organisational change may lead to higher cost of production for a firm. Higher cost of production may bring down the profit of the firm. Hence a cut back on such product due to higher cost of production. This will reduce the quantity the firmcan supply to the market and will shift the supply curve to the left.

**Change in production techniques**

Method of production is essentially affected by technological advancement. Therefore technological advancement changes thetechnique or method with which products are produced. Efficient technique will readily increase supply of the product. In contrast, inefficient method of production will reduce production capacity and in turn the quantity that can be supply to the market.

**Change in price of factors of production**

Any increase in cost of factors of production such as wages to labour, rent to land, and high cost of input factor such as raw material will increase the overall cost of production and reduces quantity to be produced thereby supply will fall.

**Price of alternative goods**

If the price of substitute goods falls as a result of fall in cost of productions, rise in its prices which make it become more profitable oras a result of fall in its raw materials; then the producer will increase the supply of the substitute good because it will be more profitable. Thereby there would be increase in supply of substitute good while the first commodity which it can be substituted for will fall in supply.

**Price and future expectation**

Speculation about increase in price of a commodity may lead to a fall in supply to the market as the firm stockpile and increase supply after the speculation becomes a reality. Again, the firm may increase production in other to increase quantity supply and take advantage of the new price increase speculated.

**Numbers of buyers and sellers**

Entrance of new firms into the industry will increase quantity supply to the market. While exit of some firms from the market may be as a resultof closing down that line of business by such firms or they foreseecheaper input factors for substitute and a higher profit; will reduce supply to the market.

**SELF-ASSESSMENT EXERCISE**

The cost of input for a firm's first product has become so high making the production of that product unattractive because of low profit on it. The firm decided to switch to increase in production of substitute whose cost of production is cheaper and hence profit on it is higher.
Classify this scenario under one or two factors that can affect quantity supply. Briefly give reasons for your answers.

## 3.4 Movement and Shift on the Supply Curve

Bodily shift of the supply curve as a result of one or more of the above mentioned factors aside price is known as change or shift of the supply curve. However, when the price changes and other factors remain constant then we have movement along the supply curve as shown in the above diagram. Figure 2.5 shows a shift from left to right (S0 to S1) indicates increase in supply as a result of changes in other determining factors. In the same vein, a shift from right to left (S0 to S2) indicate a decrease in supply to the market.

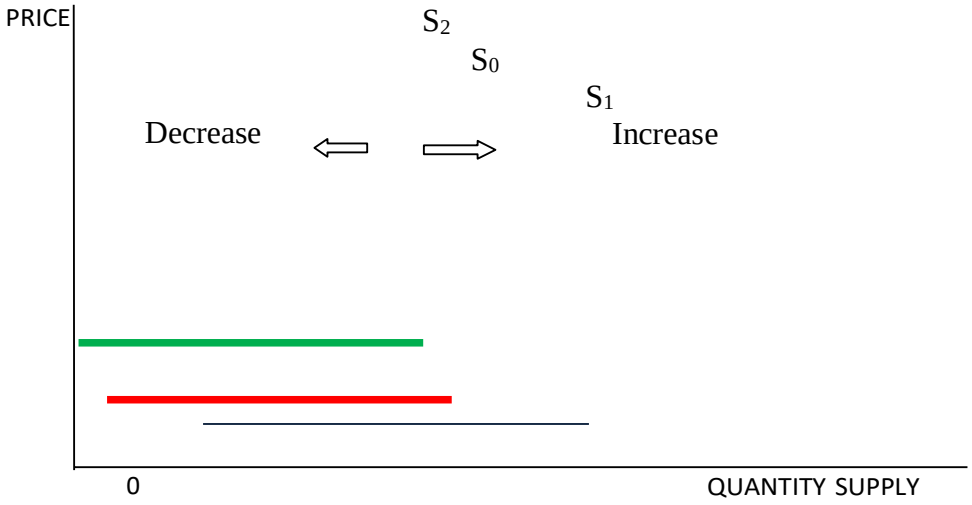



**Fig. 2.5: Shift in Supply Curve**

***Qs = c – dP***
*Where*
***Qs*** is the change quantity supplied
***P*** is the price

The above equation is based on assumption of *ceteris paribus* (all things being equal that is only price changes but other determining factors of supply remain constant).

**SELF-ASSESSMENT EXERCISE**

When the supply curve shift from right to left or left to right we say there is change in supply curve. Discuss three factors that can affect the supply curve aside price.

## 4.0 CONCLUSION

In conclusion, whenever there is a rise in prices of commodities, law of supply says the quantity to be supplied to the market will equally rise as firms will increase their supply to the markets causing a total rise in market supply. The firms' decision to increase supply is borne out of the fact that higher prices usually make investment on such product more profitable. Though cost of producing addition units above the normal unit usually produced by the firm is always there and the firm is willingto incur more cost to maximize profits. Consequently in the long run, more firms may want to take advantage of the profit and may be attracted to the market.

## 5.0 SUMMARY

This unit takes you through the supply and supply curve, other determining factors that can cause a shift in the supply curve when priceis constant and movement along the supply curve when other factors remain constant except price. Relationship between quantity supply and price of the commodities was represented in an upward sloping graph. Changes in price will only cause movement along the supply curve.Other determinants of changes in supply and how they cause a shift inthe supply curve were also represented in a graph. A shift to the rightfrom the left shows increased supply while a shift from left to the right shows a decreased supply.

# UNIT 3 ELASTICITY OF DEMAND

## CONTENTS



## 1.0 INTRODUCTION

In this unit we shall continue our discussion on demand and subsequently on supply and market price. The law of demand states that the higher the price the lower the quantity consumers will purchased. However, the response of the quantity supply or demanded to changes in price is unknown. Therefore, we tend to ask the question of how much will the quantities demanded react to price? This question is answered by ***elasticity***. *Elasticity is a concept that is used to quantify the response in one variable when there is change in another variable.* Knowing the size and magnitude of this reaction is very imperative. Therefore we shall be examining price elasticity of demand, simply put; *elasticity is a ratio of percentage change in demand and price*.

## 2.0 OBJECTIVES

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

- define elasticity in relation to demand
- state different types of elasticity of demand
- calculate elasticity
- explain the determinants of demand elasticity.

## 3.0 MAIN CONTENT

### 3.1 Demand and Price Elasticity

According to law of demand when prices rise, quantity demanded is expected to fall *ceteris paribus* (all things been equal). This shows that there is a *negative relationship* between *price and demand*. The negative relationship is replicated in the downward slope of the demand curve.

Though slope of a demand curve may reflect the responsiveness of quantity demanded to price change but is not a good measure of responsiveness. **Price elasticity of demand can be described as proportional or percentage change in quantity demanded as a result of proportional or percentage change in that commodity's price.** We shall discuss basically three types of demand elasticity vis-à-vis inelastic demand, elastic demand and unitary elastic.

**Perfectly Inelastic or Zero Elastic Demand**

This is a case where quantity demanded does not respond to increase in price i.e. the percentage change in quantity demanded is zero then the elasticity of such commodity is also zero. For instance if quantity demanded of needle (refer to the figure below) remain the same despite changes in price then the demand curve for needle will be a vertical line. Then we say needle has inelastic demand. Therefore ***perfectly inelastic demand is a demand wherein quantity demanded does not respond at all to price change***. For example if 20 percent increase in price of needle occurred but the quantity demanded remains the same i.e. there is no responsiveness at all to change in price. Then the elasticity of needle will be:

$$0 / 20 = 0$$

Remember that perfectly inelastic demand has absolute value of zero (Figure 3.9).

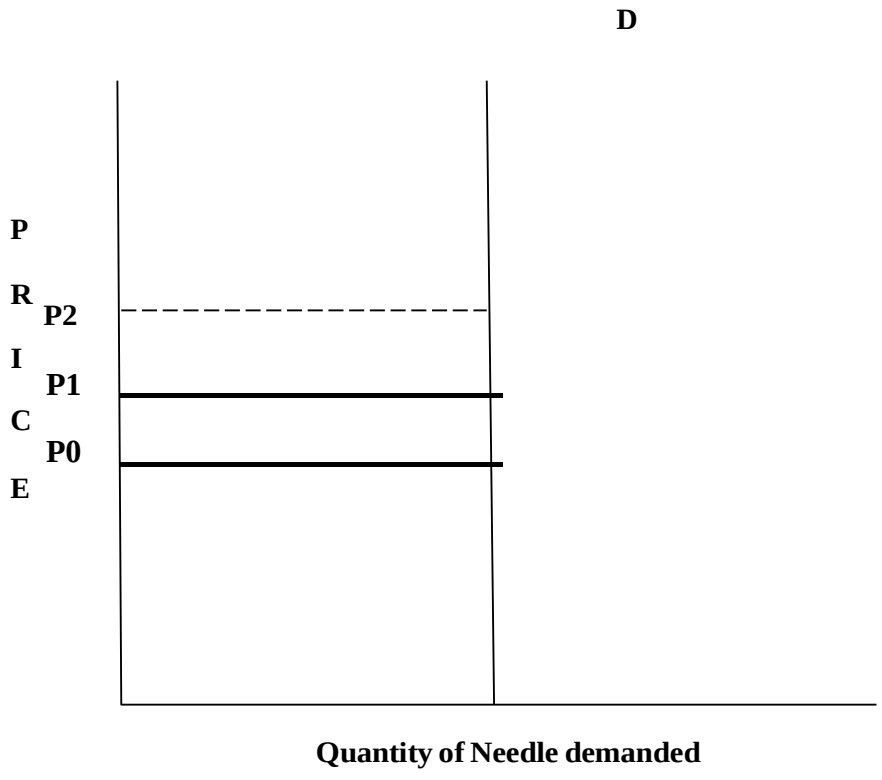



**Fig. 3.9: Perfectly Inelastic Demand**

***Inelastic Demand***

Meanwhile a demand may be inelastic but changes in quantity demanded may be proportionately less than changes in the price. The quantity demanded may change but not proportionate to changes in price, a little increase in quantity demanded but a wide change in priceas shown below. Note that the percentage change in quantity demandedis smaller compare to percentage change in price. Such commodity will have elasticity value of between 0 and -1. Therefore inelastic demand isa demand with some responsiveness to changes in price. From the graph below (Figure 3.10), note that the distance between Q1 and Q0 is smaller to the distance between P1 and P0. For example, if 20 per cent increase in price of needle drives down quantity demanded by 2 per cent, elasticity for needle is calculated as:

-2 / 20 = -0.1

Remember that inelastic demand has absolute value of between 0 and -1. Hence -0.1 is less than 1 and it falls within the range.

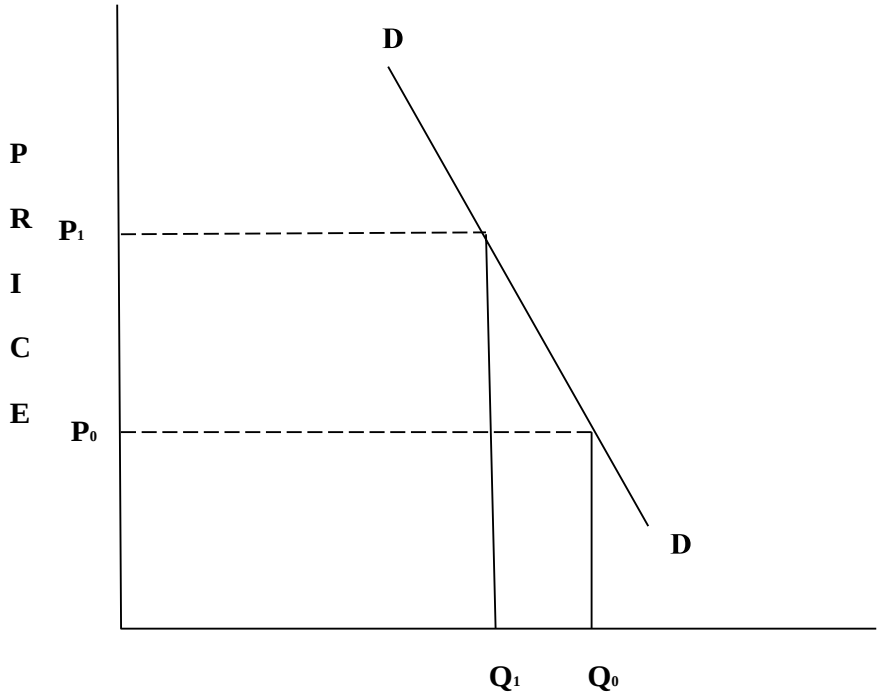



**Fig. 3.10: Inelastic Demand**

**Unitary Elasticity**

In addition, **when the percentage change in quantity demanded is the same as the percentage change in price in absolute value then we have unitary elasticity**. The elasticity of demand for a unitary elastic product is always minus one (-1). From the graph below (Figure 3.11), note that the distance between P0 and P1 is equal to the distance between Q0 and Q1.

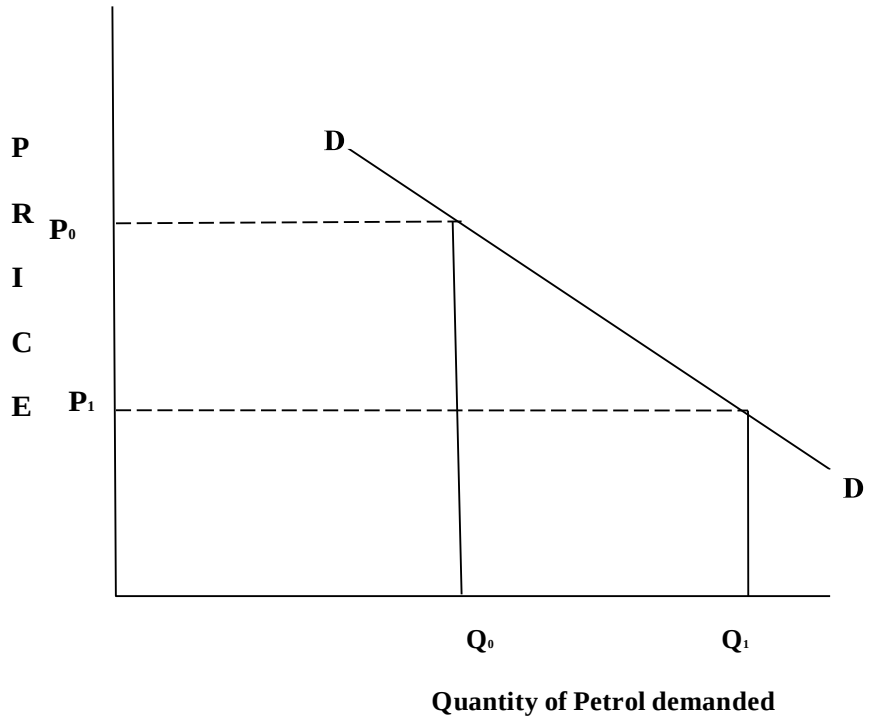



**Fig. 3.11: Unitary Elasticity**

For instance, if 5 per cent increase in price of petrol drives down the quantity of petrol demanded by 5 per cent. Then elasticity is calculated as follow:

-5 / 5 = -1

**Elastic Demand**

Elastic demand occurs when the absolute value of percentage change in quantity demanded is larger than percentage change in price. The elasticity of elastic demand product is usually greater than 1. If bread isa normal good consume, given a little drop in price of bread, consumers mostly will demand for more. From the Graph below (Figure 3.12), the distance between P0 and P1 is smaller than the distance between Q0 and Q1.

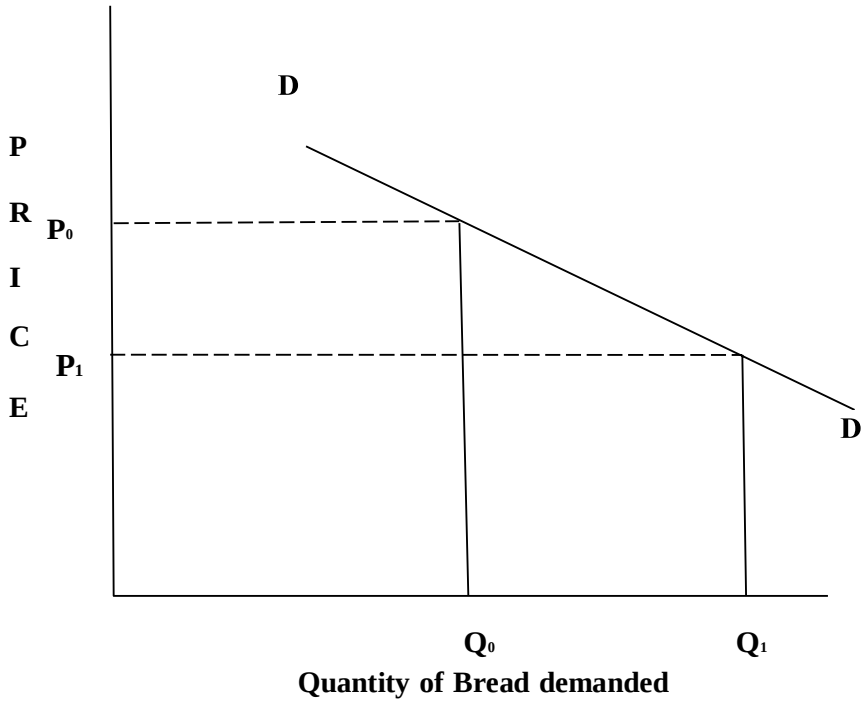



**Fig. 3.12: Elastic Demand**

**Perfectly Elastic Demand**

Perfectly elastic demand occurs when the quantity demanded dropped to zero with a little price change. This usually occurs when producers can only sell their product at a market predetermined price. Any attempt to increase the price by a small amount will drive quantity demanded to zero because consumers can easily buy from other producers who complied with the market regulated price. For instance, if the price of a bushel of soya beans is fixed in the world market at $40, any attempt by Nigeria government to raise its own price by $1 may lead to zero demand for soya beans from Nigeria as consumers can get from other suppliers in the world market. Perfect elastic demand curve is a horizontal line (Figure 3.13) because producers can only sell at a fixed price.

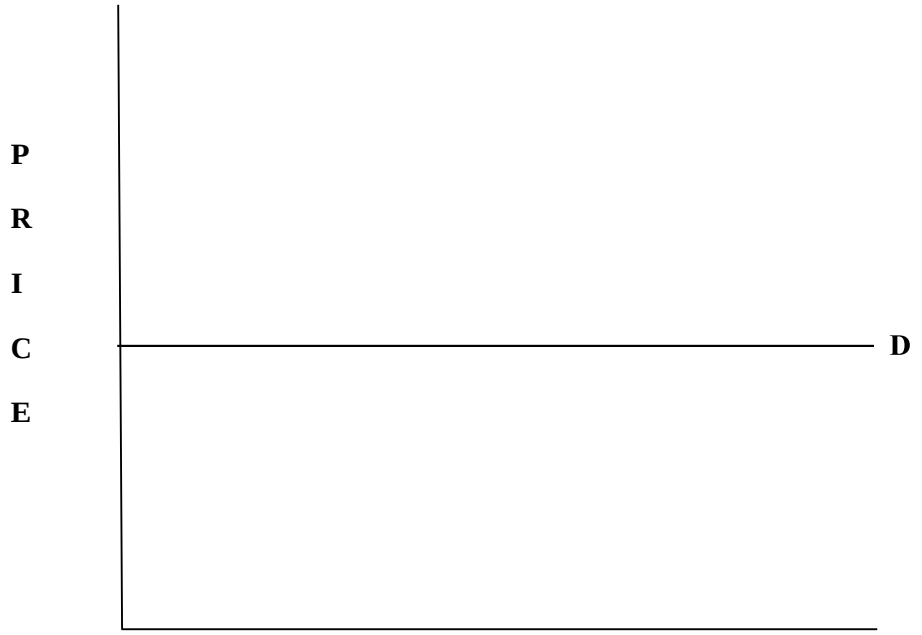



**Fig. 3.13: Perfectly Elastic Demand**

**Elasticity Calculations**

*Calculation of Percentage change in Quantity Demanded*

% change in quantity demanded = $\frac{change\ in\ Quantity\ demanded}{Q_0}$ X 100%

$$= \frac{Q_1 - Q_0}{Q_0} \times 100\%$$

Let assume that quantity demanded of chicken increased from 6kg (Q0)to 12kg (Q1) due to decrease in price from #10 to #7. To calculate the percentage change in quantity demanded using the above formula, we have:

% change in quantity demanded $= \frac{Q_1 - Q_0}{Q_0} \times 100\%$

$= \frac{12 - 6}{6} \times 100\%$

= 1 X 100%

= 100%

*Calculation of Percentage change in Price*

Percentage change in price can also be calculate using a similar formulaas shown below using the Chicken change in price from #10 (P0) to #7 (P1) as an example.

% change in quantity demanded $= \frac{P_1 - P_0}{P_0}$ X 100%

% change in quantity Price $= \frac{P_1 - P_0}{P_0}$ X 100%

$= \frac{7-10}{7}$ X 100%

$= \frac{-3}{7}$ X 100%

$= \frac{-300}{7}$%

= -42.86 %

*Calculation of Price Elasticity of Demand*

Having known the percentage change in quantity demanded andpercentage change in price, then we can calculate price elasticity of demand. Elasticity is a ration of the two percentages. Let recall the definition of elasticity: **Price elasticity of demand can be described as proportional or percentage change in quantity demanded as a result of proportional or percentage change in that commodity's price**. Therefore:

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

From the above calculation on Chicken:
% change in quantity demanded is 100%
% change in price is 42.89 percent (42.89 will carry a minus sign due to decrease in price)
Hence we have

$= \frac{100}{-42.89}$

= -2.33

Chicken has elastic demand, recall that an elastic demand always has absolute value greater than 1.

Meanwhile, using the ***midpoint formula*** to calculate percentage change has been recommended by Case and Fair (1999). This was based on the fact that changing the direction of calculation in the percentage change calculation above by using the initial base of 10 instead of 7 (with assumption that the reverse was the case). You will discover that the figure for price elasticity of demand will change. This make no sense

since the elasticity calculated is on the same demand curve. ***Midpoint formula*** describes more accurately the percentage change. It can be define as a way of calculating percentage change in demand and price using the halfway values between Q1 and Q2 and P1 and P2. See the formula below:

$$\% \text{ change in quantity demanded} = \frac{changes\ in\ quantity\ demanded}{(Q_1+Q_0)/_2} \text{ X } 100\%$$

$$= \frac{12-6}{(12+6)/2} \text{ X } 100\%$$

$$= \frac{6}{(18)/2} \text{ X } 100\%$$

$$= \frac{6}{9} \text{ X } 100\%$$

$$= 0.6666 \text{ X } 100\%$$

$$= 66.7\%$$

Using the same midpoint formula to calculate percentage change in price, we have

$$\% \text{ change in price} = \frac{changes\ in\ price}{(P_1+P)/_2} \text{ X } 100\%$$

$$= \frac{7-10}{(10+7)/2} \text{ X } 100\%$$

$$= \frac{-3}{(17)/2} \text{ X } 100\%$$

$$= \frac{-3}{8.5} \text{ X } 100\%$$

$$= -0.3529 \text{ X } 100\%$$

$$= -35.3\%$$

Now that we know that:

% change in quantity demanded = 66.7%

% change in price = -35.3%

What is the price elasticity of demand?

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

$$= \frac{66.7\ \%}{-35.3\%}$$

$$= -1.9$$

Note that the demand is still elastic because the absolute value of percentage change in quantity demanded is greater than the absolute

value of the value of percentage change in price; hence absolute value of price elasticity of demand value is greater than 1

**SELF-ASSESSMENT EXERCISE**

What is elasticity? Mention and define its different types.

## 3.2 Determinants of Demand Elasticity

Different people react different to changes in price as a result of their differences when their preference is compared. Thus elasticity that measures how people react to changes in price through changes in their demand for such product can be view as measuring human behavior. Though consumers have differing preferences but they are unified sometimes by some common principles which can be seen as determinants of demand elasticity. For instance, income of consumers, habit and uses of a commodity etc. are common factors just like factors that determine demand and supply.

**Substitute Availability**

Availability of good substitutes for a commodity is one of the mostapparent factors that can affect its demand elasticity. The closer the substitute the more elastic will be the commodity. For example if priceof close-up tooth paste went up, if the prices of other tooth pastes like Dabur herbal, My My tooth paste, Maclean, oral B, Pepsodent toothpastes remain the same; then they are cheaper than close-up. Consumer will shift easily to any of the other tooth pastes. Hence the demandelasticity of close-up will be very elastic such that a little increase in price will drive down the quantity demanded for it rapidly.

**Consumers' Income**

The larger the amount of consumer's income a commodity will consume the more elastic the demand for such commodity. Likewise the smaller the amount of consumer's income a commodity consumes the less elastic its demand. Take for instance if there is increase in the price of chewing gum sweet which people seldom takes up, its price increase may have little response to quantity demanded as people would not mind to buy because its price is small and its takes negligible part of consumers' income compare to buying a car for instance. In essence, consumers are likely to be responsive to a hike in car price such that quantity demanded will fall. By implication demand for car is elastic because buying a car will consume larger part of consumers' income,

thus any increase in price that will increase what it will consume from consumers' income will lead to a fall in demand for car.

**Addict or habit**

People that are addicted to some product consumed out of their habit which 'die hard' are another factor that can determine demand elasticity. Smokers and drunkards who consume cigarette and alcohols out of habit will not budge from buying their brands despite increase in price. As such, elasticity of demand for these products will be inelastic.

**Importance of a commodity**

How important a commodity is determines its elasticity; the grater it's uses the more its price elasticity. For example, ginger powder is not only use for soup seasoning, but can be included in jolof rice, fried rice, beans porridge, oat meal, yam porridge and can even be added to black tea, green tea or used to make pure ginger tea. For these alternative usesit can be put to, its demand becomes very elastic. Increase in price of ginger may lead to decrease in quantity demanded.

**SELF-ASSESSMENT EXERCISE**

List the determinants of elasticity of demand. Explain two of them.

## 4.0 CONCLUSION

Elasticity is a means of measuring how quantity demanded or supplied of a product react to changes in price and other determinants. There are different types as a result of differing determinants such as price elasticity of demand, cross (price) elasticity, and income elasticity. Elasticity was defined as percentage change in quantity demanded or supplied divided by percentage change in price. The formula for calculating each type of elasticity was also discussed.

## 5.0 SUMMARY

It is important to know that the nature of elasticity determines its name and hence, it numerical value. When quantity demanded does not respond to changes in price, then there is zero elasticity of demand or we say there is it is perfectly inelastic. When the percentage change in quantity demanded is equal to the percentage change in price, we have unitary elasticity of demand. When the percentage change in quantity demanded is less than the percentage change in price, we have inelastic demand but when the percentage change in quantity demanded is greater

than percentage change in price, it is referred to as elastic demand. This is exactly opposite to inelastic demand.

## 6.0 TUTOR-MARKED ASSIGNMENT

1. The federal government gave a boost to the housing sector by building 2 million units of low-cost housing estates in each state of the federation for federal workers. There is zero down- payment on acquisition and monthly instalmental payment by buyers. What will happen to demand curves of housing in the country?
2. What do you understand by elasticity of demand?
3. If the price of bread increased by 7 per cent which led to 4 per cent decrease in demand for butter, then calculate the cross-price elasticity of demand.
4. Show diagrammatically the following types of demand elasticity: a). Unitary elastic demand; b). Elastic demand; c). Perfectly inelastic demand.

# UNIT 4 ELASTICITY OF SUPPLY

## CONTENTS



## 1.0 INTRODUCTION

In the previous unit we discussed on demand and its different elasticities as well as their determinants. In this unit we shall continue our discussion on supply and market price. Recall that the law of demand states that the higher the price the lower the quantity consumers will purchased while law of supply states that the higher the price the higher the quantity the supplier will be willing to supply to the market. However, the response of the quantity supply or demanded to changes in price is unknown. Therefore, the question of how much the quantity demanded will react to price or how much the quantity supplied willreact to price is answered by ***elasticity***. Recall again that we defined **Elasticity has a concept that is use to quantify the response in one variable when there is change in another variable**. Consequently knowing the size and magnitude of these reactions is very imperative. Therefore we shall be examining elasticity of supply and other important elasticity.

## 2.0 OBJECTIVES

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

- explain elasticity in relation to supply
- explain other types of elasticity that are important
- calculate elasticity.

## 3.0 MAIN CONTENT

### 3.1 Elasticity of Supply

Habitually we want to know how responsive is the quantity demanded to a change in price. In the same context, we normally want to know how responsive quantity supply also is, to changes in price. **Price elasticity of supply is defined as the responsiveness of quantity supplied to a change in price**. To measure price elasticity of supply, a similar formula for calculating price elasticity of demand is used though not with little amendment. The percentage changes in quantity demand changes to percentage changes in quantity supplied. Hence the measure of price elasticity of supply is **proportionate changes (percentage changes) in quantity supplied is divided by the proportionate changes in price (percentage changes)**.

The graph in Figure 3.14 shows how quantity supplied respond to changes in price shifting the supply curve from S1 to S2 as the price changes from P1 to P2.

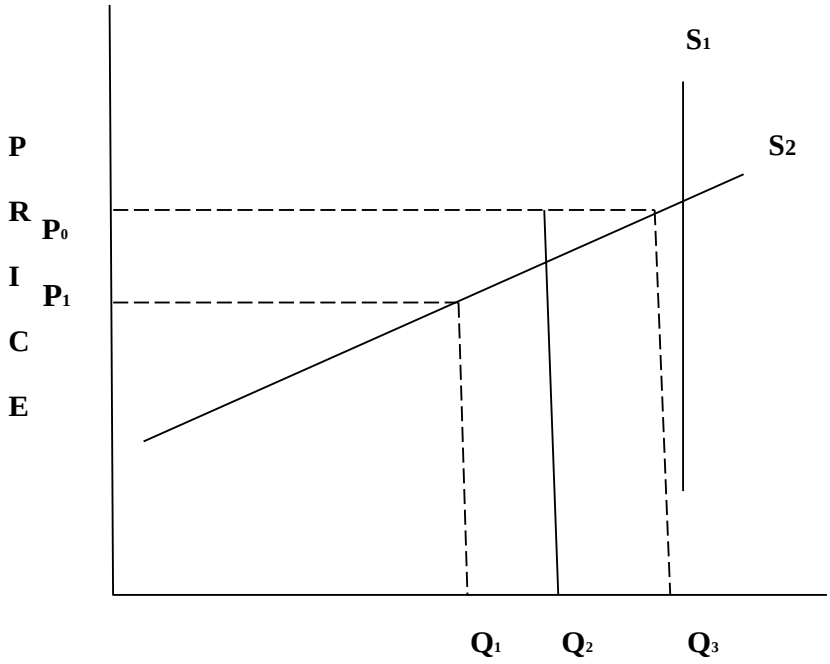



**Fig. 3.14: Elasticity of Supply Graph**

The two supply curves have different elasticity; as could be seen from the graph, a change in price from P1 to P2 caused quantity supplied to move from Q1 to Q2 on the supply curve S1 but quantity supplied

moved from Q1 to Q3 on the supply curve S2. Recall that under elasticity of demand, we discussed various types of elasticity like zero elasticity of demand, unitary elasticity, elastic and inelastic elasticity and so on. In the same context, we shall be briefly discussing on perfectly inelastic or zero elasticity of supply, inelastic, unitary, elastic and perfectly elastic supply with the aid of diagram.

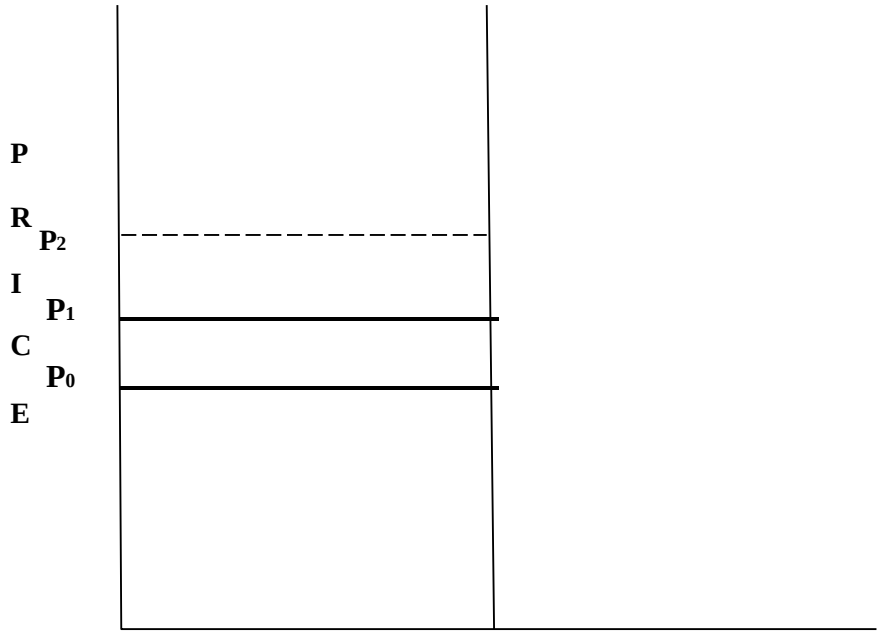



**Fig. 3.15: Perfectly Inelastic or Zero Elasticity**

From Figure 3.15, it means that no matter t**S** ise in price of coffee, the supply remain the same.

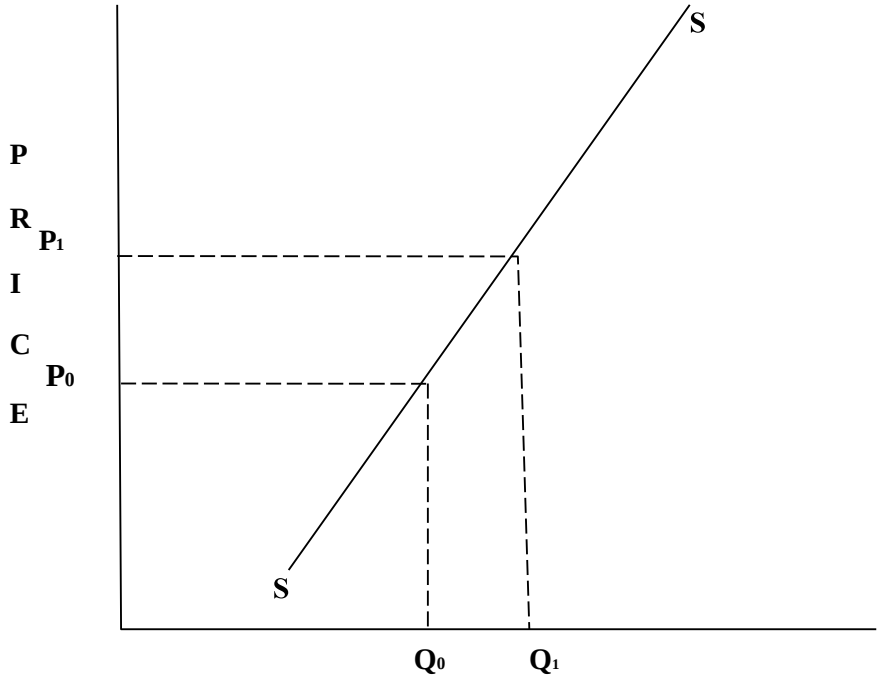



**Fig. 3.16: Inelastic Supply**

The quantity supplied may change but not proportionate to the percentage changes in price. From the above graph (Figure 4.5), there isa wide change in price but a little increase in quantity supplied.

**Unitary elasticity of Supply**

The elasticity of supply for a unitary elastic product is always one (1). The distance between the Q1 and Q2 is equal to the distance between the P1 and P2 (Figure 3.17).

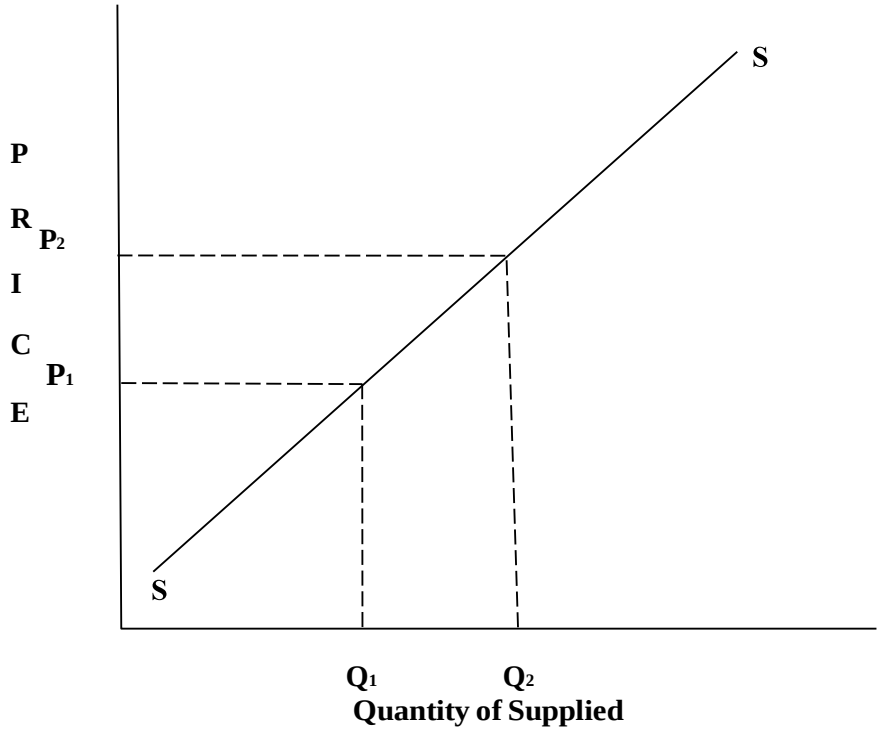



**Fig. 3.17: Unitary Elasticity of Supply Graph**

**Elastic Supply**

Elastic supply will occur when the absolute value of percentage change in quantity supplied is larger than percentage change in price. The elasticity of elastic supply product is usually greater than 1 (refer to Figure 3.18).

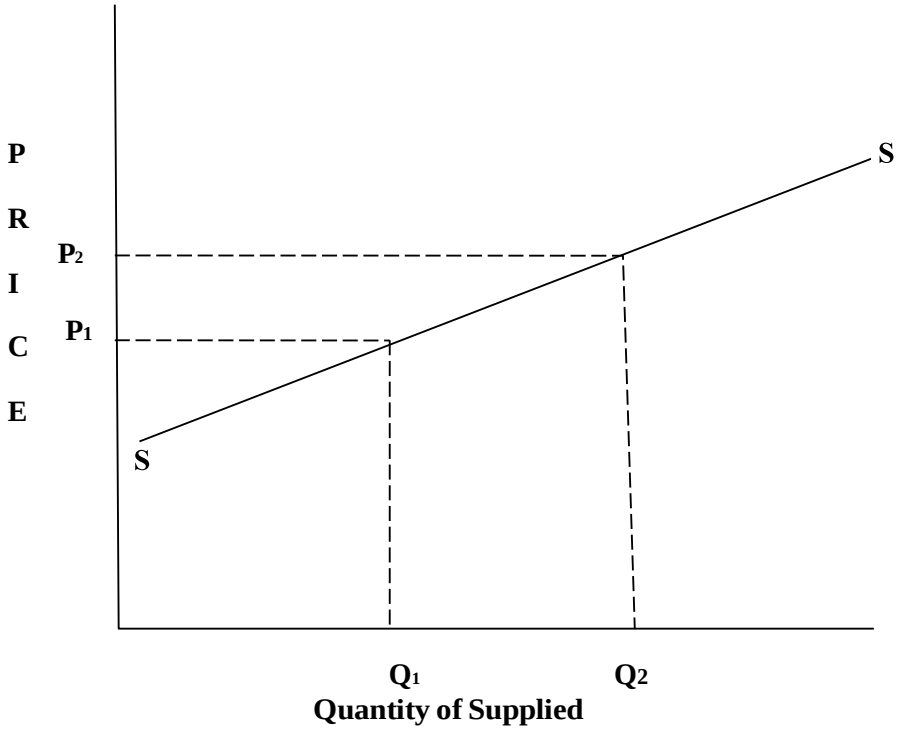



**Fig. 3.18: Elastic Supply Graph**

*Perfectly Elastic Supply*

Perfectly Elastic supply will occur when the absolute value of percentage change in quantity supplied change but the price remains the same. The elasticity of elastic supply product is usually greater than 1 (Figure 3.19).

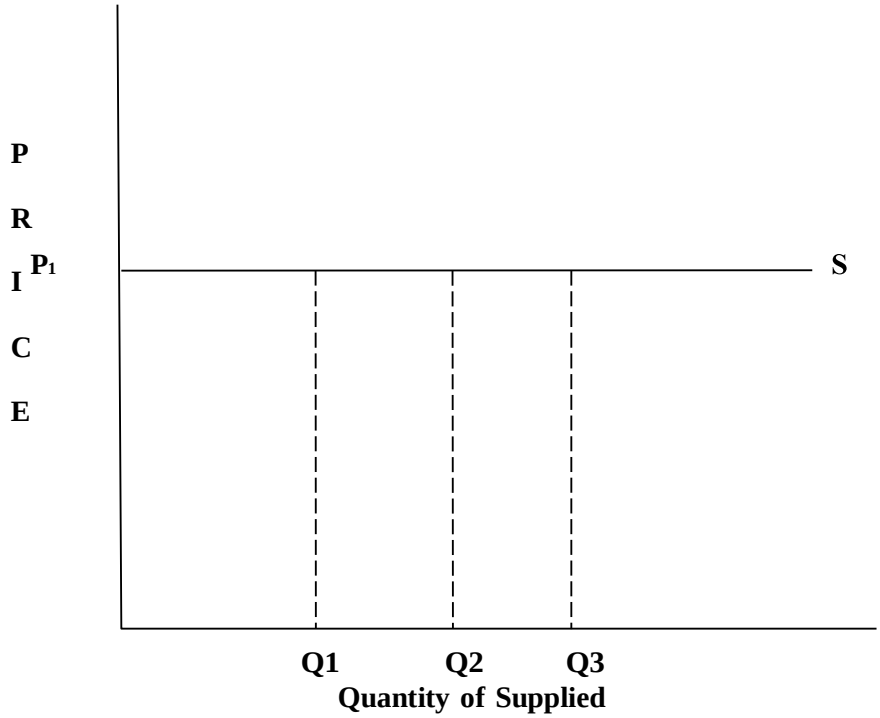



**Fig. 3.19: Perfectly Elastic Supply**

**Calculating Price Elasticity of Supply**

The formula for calculating price elasticity of supply stated above could be mathematically represented as:

$$\text{Price elasticity of Supply} = \frac{Percentage\ change\ in\ Quantity\ Supplied}{Percentage\ change\ in\ Price}$$

$$P\epsilon S = \frac{\%\Delta Q_s}{\%\Delta P}$$

Take for instance, if there is 15 percent changes in quantity demanded as a result of 5 percent rise in price, then we have

$$P\epsilon S = \frac{\%\Delta Q_s}{\%\Delta P}$$

$$P\epsilon S = \frac{15\ \%\Delta Q_s}{5\ \%\Delta P}$$

$$= \frac{15\ \%}{5\%}$$

$$= 3$$

In the above result, the elasticity of supply is greater than 1, hence the supply is elastic. Note also that the elasticity is positive because the risein price caused a rise in supply. If it caused a falling supply, then the

elasticity result will be negative. If in another situation, this 15% rise in quantity supplied was as a result of 25% rise in price, then we have:

$$P_{\epsilon}S = \frac{15\,\%\,\Delta Q_s}{25\,\%\,\Delta P}$$
$$= \frac{15\,\%}{25\%}$$
$$= 0.6$$

In this case, the price elasticity of supply is less than 1, hence the supply is inelastic.

**SELF-ASSESSMENT EXERCISE**

Explain the following:

a. Perfectly inelastic supply
b. Elastic supply
c. Unitary supply

## 3.2 Determinant of Supply Elasticity

**Spare Capacity**

If a firm has more than enough capacity to respond to a rise in quantity supplied by increasing supply immediately to the market, then its supply will be elastic. The more their extra capacity to increase supply; the more the firm would be encouraged to produce more anytime there is a rise in price.

**Stock Availability**

When a firm can get extra raw material and can easily change its line of product from the normal goods to substitutes at affordable costs, then, its supply will be elastic. However, if its raw material and other factors of production cannot be easily converted to producing substitutes, then its supply becomes inelastic.

**Time**

When a firm is able to increase supply immediately then its supply would be elastic, otherwise, it would be inelastic. The reversed case will occur if the supply is of fixed nature. However, in the short run, if thefirm needs sometimes to increase some factors of production while others remain fixed, then it supply can be elastic to some extent. But if the firms need ample time to increase all its factors of production thenits supply will be highly elastic in the long run.

**SELF-ASSESSMENT EXERCISE**

Briefly discuss factors determining elasticity of supply.

## 3.3 Important Elasticity

Previous sections detailed on responsiveness of demand as well as supply to changes in price. However, you would have noticed that priceis not the only determinant having discussed other determinant factors either under demand or supply. We have been able to establish that elasticity is a measure of how responsive a variable is to a change in the other variable. Also, we have seen from different calculations under demand and supply that the more elastic a product is, the more the market will respond to changes in its price, quantity demanded or supplied. Therefore we shall look at two factors that can also affect the demand curve. One is the responsiveness of quantity demanded to income and two, responsiveness of demand for one product when thereis a change in price of another product –substitute or complimentary goods.

**Income elasticity of demand**

Income elasticity of demand is the percentage change in quantity demanded as a result of percentage change in households' income. When the income elasticity of a product is less than one, it is an indication that household consumption of the product does not increase despite the increase in households' income. To measure income elasticity of demand, we divide percentage change in quantity demanded by the percentage change in income. The formula is given below:

Income elasticity of demand = $\frac{percenatge\ change\ in\ quantity\ demanded}{percentage\ change\ in\ income}$

$$= \qquad Y\epsilon_D = \frac{\%\Delta Q_D}{\%\Delta Y}$$

**Cross elasticity**

Cross elasticity of demand is use to measure the percentage change in quantity demanded of one product when there is a change in the price of another close product. For this reason it is sometimes referred to ascross-price elasticity of demand. For example, if the price of X increases and the quantity demanded of Y decreases; it indicates that X and Y are complimentary goods. In this case, cross-price elasticity will be a negative figure. A good example of complimentary goods is bread and butter. If the price of bread increased by 7 percent which led to 4 percent decrease in demand for butter, then cross-price elasticity of demand will be:

Cross elasticity of demand = $\frac{\textit{percentage change in quantity demanded of X}}{\textit{percentage change in price of Y}}$

Cross elasticity of demand = $\frac{\%\Delta Q_{Dx}}{\%\Delta Q_{Py}}$

Cross elasticity of demand = $\frac{-4}{7}$

= -0.57

In contrast, if the increment in price of X causes the quantity demanded of Y to increase, it indicates that X and Y are substitutes. In this case cross elasticity of demand will be positive. Example of substitute goodsis butter and margarine, if the price of margarine increased by 10 percent and the quantity demanded of butter increased by 2 percent then we have:

Cross elasticity of demand = $\frac{\textit{percentage change in quantity demanded of X}}{\textit{percentage change in price of Y}}$

Cross elasticity of demand = $\frac{\%\Delta Q_{Dx}}{\%\Delta Q_{Py}}$

Cross elasticity of demand = $\frac{2}{10}$

= 0.2