GOVERNMENT ARTS AND SCIENCE COLLEGE

KOVILPATTI

BUSINESS ECONOMICS (SACO11)

I semester

MRS.M.SUMAIYA

BUSINESS ECONOMICS

Unit I

Introduction of Economics and Business Economics: Meaning, Nature an Significance of Economics – subject matter of Economics – Meaning, Nature and Significance of business Economics – Role of business economics in decision making – Role and responsibilities of a business economist.

Unit II

Consumption and Demand analysis: Business significance of Consumption and Demand – Demand determinants – Law of demand and demand curves – Types of demand – Concept of elasticity – Methods of measuring price elasticity of demand – Relationship between price elasticity and sales revenue.

Unit III

Production Analysis: Factors of production and their characteristics – Production possibility curves – Concepts of total product, Average product and Marginal product – Fixed and variable factors – Classical and Modern approaches to the law of variable proportions – Law of returns to scale and Economies and diseconomies of scale.

Unit IV

Supply and Cost analysis: Supply – Factors affecting supply – Law of supply – Elasticity of supply and types of elasticity of supply – Cost of production – Concepts of Cost– Sunk cost and future cost, direct cost and indirect cost – Cost curves – Total, Average, Marginal cost curves – Relationship of MC to AC – Fixed and variable cost curves.

Unit V

Price and output decisions in various market forms: Role of Time in determining the value of products – Equilibrium conditions of a firm and Industry under various market forms – Price and output determination in a Perfect Market – Price and output determination in an Imperfect Market with specific reference to Monopoly, Monopolistic competition and Oligopoly.

UNIT I

INTRODUCTION

Economics deals with the day to day activities of human beings life. In all, human beings are gratified (or) enjoy the economic activities such as consumption, production, exchange and distribution. In simple terms economics is concerned with the aspects of human behaviour.

ORIGIN OF ECONOMICS

The term Economics is derived from the two Greek words „Oikos‟ (means house) and „Nomos‟ (means manage). If these two words are merged "Oikonomia" it gives the meaning household management.

In the earlier period, economics is linked with politics. So the earlier economist called economics as a "political economy". This subject name was changed from „political economy‟ to „economics‟ by Alfred Marshall.

DEFINITION OF ECONOMICS

There are four important definitions of economics to understand the basic concept of economics. They are

Wealth Definition –Adam Smith Welfare
Definition – Alfred Marshall Scarcity
Definition- Lionel Robbins Growth
Definition – Paul. A. Samuelson.

WEALTH DEFINITIONS

The classical economists defined economics as the science of wealth. Adam Smith in his famous book, **"An Enquiry into the Nature and Causes of the Wealth of Nations",** which was published in 1776, described economics systematically.

Definition

"Economics is an enquiry into the nature and causes of the wealth of nations".

Adam Smith

Features

The wealth definitions have the following main features:

i) Study of wealth

According to the wealth definitions of economics the only proper study of economics is wealth.

ii) Study of material goods only

The term wealth has been used, only for material goods like table, chair, book, pen, etc. Non material goods like services of teachers, engineers, doctors have not been considered as wealth.

iii) Causes of wealth

Economics is an enquiry into causes of increase in wealth.

iv) Much Emphasis on wealth

For the economic development of any country, the classical economists give too much importance to wealth.

Criticism

The wealth definitions have been criticized for giving too much importance to wealth. The definitions have been criticized on the following grounds:

i) Too much stress on wealth

These definitions have assigned primary importance to wealth and secondary status to man.

ii) Neglect of man

These definitions lay emphasis on earning and accumulation of wealth and man is not taken into consideration.

iii) Only material goods

Adam smith and other classical economists included only material goods in wealth.

iv) Neglect of human welfare

The classical economists had given undue importance to wealth but they did not give any importance to human welfare.

v) Concept of economic man

In these definitions it has been observed that the basic objective of the economic man is to earn and collect wealth. But it is far from true.

vi) Neglect of means

These definitions do not explain which means should be adopted for earning and accumulation of wealth.

vii) Static definitions

These definitions have concentrated on the earning and collection of wealth.

Therefore according to some economists these definitions are static.

WELFARE DEFINITIONS

Neo-classical economists like Alfred Marshall, Cannan, A.C. Pigou have defined economics in terms of welfare. Therefore, their definitions are described as **"Welfare Definitions"**. Alfred Marshall in his famous book **"Principles of Economics"** published in 1980 laid stress on material welfare rather than wealth. He changed the very concept of economics.

Definitions

"Economics is a study of mankind in the ordinary business of life. It examines that part of individual and social actions which are most closely connected with the attainment and use of material requisites of well being."

Alfred Marshall

Features

The main features of material welfare definitions are as follows

i) Study of mankind

According to the welfare economists, economics is a science which is related with the welfare of human beings.

ii) Study of ordinary business of life

Every person acts mainly to earn and collect wealth and spends those earnings to get the maximum enjoyment. Marshall called this activity the ordinary business of life.

Iii) Material requisites

According to these definitions, economics studies only those activities of man which are related to material requisites.

iv) Study of real man

Economics studies the real man in the society who possesses several qualities to increase the welfare of the society.

v) A Science and an art

These definitions deal with economics both as a science and an art.

vi) Logical and scientific definitions

Economics is not a science of wealth but a study of the means and approaches to increase the welfare of society.

Criticism

Material welfare definitions of economics given by Marshall, Pigou and others have been criticized on the following grounds.

i) Economics is a human science

Economics studies both the persons living in the society and outside the society like monks, saints, and so on.

ii) Narrow definitions

These definitions include material goods only while non-material goods and services are ignored.

iii) Non analytical definitions

Instead of the classification of activities, economists should concentrate on scarce means.

iv) Wrong classification of human activities

According to Marshall human activities are classified into economic and non- economic activities. But Robbins has criticized this classification on the basis that every human activity is economic and related directly or indirectly with wealth.

v) Impractical

The definition of economics given by Marshall is theoretical in nature which is not applicable in practical life.

vi) Unscientific

Wealth definition given by Marshall is not analytical. The study of human behaviour given by Marshall makes economics variable, indefinite and uncertain.

vii) Not concerned with ends

Economics is the study of material welfare of society. According to Robbins, economics is a pure science which does not study good or bad, right or wrong, as these come under the purview of ethics.

viii) „Ordinary Business of life" is not clear

According to Marshall, economics is a study of mankind in the ordinary business of life. The meaning of the words „Ordinary Business of Life" is not clear.

SCARCITY DEFINITIONS

In 1932, Lionel Robbins brought out his famous book entitled **"An Essay on the Nature and Significance of Economics science"** and introduced „the scarcity definition" of economics. He has criticized the „Welfare definitions" given by Marshall, Pigou and others. He has laid more emphasis on the scarcity of means rather than on the objectives or ends.

Definitions

"Economics is a science which studies human behaviour as a relationship between ends and scarce means which have alternative uses".

Robbins

Robbins" definition is based on the following facts:

i) Economics is a Science

ii) Wants are unlimited

iii) Means are scarce

iv) Means have alternative uses.

Features

The definition of economics given by Robbins has the following main features

i) Economics is a science

According to Robbins, economics is not an art or a normative science. It is a science which studies the causes of economic problems and does not study its merits and demerits.

ii) Human behaviour

According to Robbins, economics is a science which studies human behaviour. The behaviour of every person is studied in economics irrespective of the fact whether he lives in or out of society.

iii) Unlimited ends

Wants are unlimited. It is not possible to satisfy them all. If one want is satisfied, another crops up. In fact, there is no end to what a man may want.

iv) Scarce means

Though wants are unlimited, the means at the disposal to satisfy these wants are scarce or limited.

v) Alternative uses of means

Wants are unlimited but the means to satisfy them are scarce. Not only the means are scarce but can be put to a number of uses. This makes them all the more scarce.

vi) Problem of choice

According to Robbins, economics is the science of choice-making because wants are unlimited and means to satisfy them are limited.

Criticism

Many economists criticized the Robbins definition on the following grounds:

i) More emphasis on scarcity

Robbins gives too much importance to the economics of scarcity. Modern economics is growth oriented rather than scarcity oriented.

ii) Too wide a definition

According to Robbins economics is the study of all human activities which are related to the problem of choice. The problem of choice as such is faced not only by the social beings but also by the non-social beings like saints and smugglers.

iii) Economic problems do not always arise from scarcity

According to Robbins the economic problems arise due to scarcity of means in relation to wants. He gives main emphasis on the phenomenon of scarcity. But some critics are of the opinion that economic problems also arise from the abundance of goods.

iv) Old wine is new bottles

The famous economists like Beveridge and Fraser said that the definition given by Robbins is only old wine in new bottles. They assert that Robbins‟ does not say anything new which was not known to Marshall.

v) Unethical definition

Robbins‟ definition of economics ignores normative or ethical aspect of economic phenomena because it is neutral as regards its ends.

vi) Lack of human touch

Robbins‟ Definition lacks in human touch.

vii) Growth theory overlooked

The theory of economic growth has been become a very popular branch of modern economics. The theory explains how an economy grows and the factors which bring about increase in national income and productive capacity of the economy. But Robbins ignores this theory and takes only the resources as given and discusses only the scarcity and allocation of resources.

viii) More abstract and complex definition

Robbins‟ definition of economics is an abstract, complex and difficult one. Hence, it loses its utility for the common man. The utility of economics lies in its being a concrete and realistic study.

ix) Inapplicable in rich countries

Robbins‟ definition is concentrated on the scarcity of resources. This definition, therefore, is not applicable in highly rich countries which have abundance of resources.

x) Inapplicable in socialist economies

Definition of economics is not applicable in socialist countries. In these countries, all the decisions regarding production and consumption are taken by the Government and the state is responsible for providing basic necessities of life to people.

GROWTH DEFINITION

Modern economics is growth oriented. The growth economics is the major concern of all economic theories. The modern economists describe economics as follows:

Definitions

“Economics is the study of how men and society end up choosing, with or without the use of

money, to employ scarce productive resources that could have alternative uses, to produce various commodities and distribute them for consumption, now or in the future, among various persons and groups in society. It analyses the costs and benefits of improving patterns of resource allocation"

Paul A. Samuelson

Features

The „Growth definitions" given by modern economists have the following main features.

i) Productive resources

Like the scarcity economists, Samuelson also emphasizes the scarcity aspect of productive resources in the economic life of people in society. The resources are scarce but they have alternative uses in producing various goods for the satisfaction of human wants.

ii) Theory of distribution and consumption

The modern economics is concerned with the production of a variety of goods with scarce means. Apart from this it is concerned with the relative problems of distribution and consumption of these scarce resources.

iii) Dynamic and wider definition

The definition given by Samuelson is dynamic in content and wider in scope. It pertains not only to the present but also the future production and distribution aspects of the economic activities of the society.

iv) Adequate allocation of resources

The main focus of the modern economists is to increase the economic growth of the economy. This can be done only with the adequate allocation of resources between competing ends.

v) Proper utilization of resources

The focus of modern economics is not only on the allocation of resources but on proper utilization of resources. It also points out that the cost benefit analysis is very important in dealing with development programmes and proper utilization of the resources in the country.

Nature of Economics

Economics is a science:

Science is an organised branch of knowledge, that analyses cause and effect relationship between economic agents. Further, economics helps in integrating various sciences such as

mathematics, statistics, etc. to identify the relationship between price, demand, supply and other economic factors.

Positive Economics:

A positive science is one that studies the relationship between two variables but does not give any value judgment, i.e. it states 'what is'. It deals with facts about the entire economy.

Normative Economics:

As a normative science, economics passes value judgement, i.e. 'what ought to be'. It is concerned with economic goals and policies to attain these goals.

Economics is an art:

Art is a discipline that expresses the way things are to be done, so as to achieve the desired end. Economics has various branches like production, distribution, consumption and economics, that provide general rules and laws that are capable of solving different problems of society.

Therefore, economics is considered as science as well as art, i.e. science in terms of its methodology and arts as in application. Hence, economics is concerned with both theoretical and practical aspects of the economic problems which we encounter in our day to day life.

SIGNIFICANCE OF ECONOMICS

- First and foremost, the most important advantage of economics is helping the society decide and formulate the ways for the optimal allocation of its limited and scarce resources.
- Economics provides us the mechanism and analytical techniques to optimise the utilisation of the available resources and reduce wastages.
- Optimum utilisation of the 'Opportunity cost' is another principle in which the scarce resources are utilised efficiently after calculating and checking the opportunity cost. Minimising the opportunity cost gives maximum profits. The use of this principle by governments in budget allocations results in better growth rates for a nation.
- The stability of an economy is a must for any country or society to survive in the long run. The adoption of sound economic practices in a society can only ensure that the economy is stable and growing at the same time.
- Economics is equally important for the economical growth of individuals. A person may not need the knowledge and understanding of the theoretical side of economics, but he

definitely needs to understand the basic economic practices that he must follow to save himself from going broke or bankrupt and to enjoy a healthy and wealthy life. Also, understanding of at least the basic economics helps maximising the profit.

- Economists can advise governments on how to manage the economy and avoid inflation and unemployment through well devised economic policies.
- Economists can also be of great help to the society by suggesting certain policies to the governments to overcome the market failures caused due to various factors such as under or over-production.

NATURE OF BUSINESS ECONOMICS

Traditional economic theory has developed along two lines; viz., normative and positive. Normative focuses on prescriptive statements, and help establish rules aimed at attaining the specified goals of business. Positive, on the other hand, focuses on description it aims at describing the manner in which the economic system operates without staffing how they should operate.

The emphasis in business economics is on normative theory. Business economic seeks to establish rules which help business firms attain their goals, which indeed is also the essence of the word normative. However, if the firms are to establish valid decision rules, they must thoroughly understand their environment. This requires the study of positive or descriptive theory. Thus, Business economics combines the essentials of the normative and positive economic theory, the emphasis being more on the former than the latter.

SIGNIFICANCE OF BUSINESS ECONOMICS

The significance of business economics can be discussed as under:

1. Business economics is concerned with those aspects of traditional economics which are relevant for business decision making in real life. These are adapted or modified with a view to enable the manager take better decisions. Thus, business economic accomplishes the objective of building a suitable tool kit from traditional economics.

2. It also incorporates useful ideas from other disciplines such as psychology, sociology, etc. If they are found relevant to decision making. In fact, business economics takes the help of other disciplines having a bearing on the business decisions in relation various explicit and implicit constraints subject to which resource allocation is to be optimized.

3. Business economics helps in reaching a variety of business decisions in a complicated

environment. Certain examples are:

(i) What products and services should be produced?

(ii) What input and production technique should be used?

(iii) How much output should be produced and at what prices it should be sold?

(iv) What are the best sizes and locations of new plants? (v) When should equipment be replaced?

(vi) How should the available capital be allocated?

4. Business economics makes a manager a more competent model builder. It helps him appreciate the essential relationship Characterizing a given situation.

5. At the level of the firm. Where its operations are conducted though known focus functional areas, such as finance, marketing, personnel and production, business economics serves as an integrating agent by coordinating the activities in these different areas.

6. Business economics takes cognizance of the interaction between the firm and society, and accomplishes the key role of an agent in achieving the social and economic welfare goals. It has come to be realized that a business, apart from its obligations to shareholders, has certain social obligations. Business economics focuses attention on these social obligations as constraints subject to which business decisions are taken. It serves as an instrument in furthering the economic welfare of the society through socially oriented business decisions.

SUBJECT-MATTER OF ECONOMICS

The subject-matter of economics has been a subject of wide controversy. So wide ranging is the divergence of opinion in this regard that it led various economists differs vastly about the subject matter of economics. The classical economists like Adam Smith and others considered production and distribution of wealth as the material welfare of human being as the subject matter of economics. Marshall and his followers considered material welfare of human being as the subject matter of economics. He said that economics is the study of human activities which promote material welfare.

a) Economic circle

According to Lionel Robbins, wants are unlimited but means to satisfy them are limited. So man makes efforts to earn money or income and by spending money he satisfies his wants. The satisfaction of one want gives birth to another. For the satisfaction of these wants man again makes efforts, earns money and again obtains satisfaction by spending it on the required

goods.

In this way, the endless economic circle of wants□Efforts□Wealth□Satisfaction starts and goes on forever and that is what constitutes the subject matter of economics.

b) Economic activities

Economic activities are those activities of human beings which are performed mainly to earn income. The income is not earned just for the purpose of earning but to buy goods and services to satisfy human wants.

Boulding has classified the economic activities relating to the subject matter of economics into the following four groups:

i) Consumption;

ii) Production;

iii) Exchange ; and

iv) Distribution

i) Consumption

Consumption is the beginning and the end of all the economic activities. It is the cause of production. Consumption is a process through which human wants are satisfied by the use of goods and services. Consumption means deriving utility from goods.

ii) Production

Production is the creation of utilities. Production is centre of all economic activities. An entrepreneur engages land, labour and capital to produce goods and services to satisfy human wants.

iii) Exchange

Modern age is the age of specialization. Nobody can produce all the goods he needs himself and every producer produces much more of a commodity than he wants for himself. Hence, there is a need for exchange.

iv) Distribution

The national product is produced by four factors of production i.e. land, labour, capital and enterprise. The nation income is distributed among these factors of production in the form of rent, wages, interest and profit.

c) Parts of Economics

Some economics like Ragnar Frisch have classified the subject matter of economics into the following two parts

i) Microeconomics

Microeconomics is the study of individual events. In microeconomics, we study the individual economic activities. Product pricing, factor pricing and theory of economic welfare are to be studied in this branch of economics.

ii) Macroeconomics

Macroeconomics is the study of aggregates. The subject matter of macroeconomics covers the analysis and behaviour of the whole economic system in its totality. It deals with national income, employment level, price level, money, banking, economic development, and so on.

Role of Business Economics in Decision Makimg

1) Demand Decision

Demand at different price levels at different point of time is forecast to plan supply accordingly to enlarge customer base and gain more profit. The analysis and forecasting of demand for a given product and service is the foremost task of business economist.

2) Input – output Decision

There is the need to assess the behavior of cost at different levels of production. The costs of inputs in relation to output are studied to optimize profit. It is necessary for the businessman to know the relationship between the cost and output both in the short period and long period to position its products in a competitive environment.

3) Price output Decision

When the product is ready for sale it is important to decide about the determination of price under different market conditions. The pricing polices methods, strategies and practices constitute a crucial part of the study of business economics.

4) Investment Decisions

Investment decisions are called capital budgeting decisions. Availability of capital is scarce. Capital has cost. It is expensive. Hence it must be utilized in such a way to maximize the return on investment.

5) Forward Planning

Economic forecasting leads to forward planning. It is necessary to forecast the trends in the economy to plan for the future in terms of investment, products markets and profits. This will help to minimize the risk and uncertainty about the future.

6) Profit related Decisions

A firm has to employ the techniques such as break even analysis cost reduction and control and ratio analysis to ascertain the level of profits. Cost reduction and cost control indirectly enhance the level of profit. Ratio analysis helps to determine the liquidity solvency and profitability of the activities of the firm.

Role of Business Economist

1) Identifying Various Business Problems:

Various companies face many problems such as labour problems, pricing problems, and other problems related to Government controls and restrictions. The basic job of business economist is to identify various problems that are uplifting a company, find out various reasons behind these problems, analyze their effects on the functioning of the company and finally suggest rational alternative and corrective measures to be taken by the management. Also, it's his duty to design various course of action to maintain & improve the existing systems.

2) Providing a quantitative base for decision making & forward planning:

The business economics with his vast experience has to provide a quantitative base for decision making, policy making & forward planning in a business. Business economist helps to study the in-depth knowledge of the various factors, controllable & non-controllable which influence the working of a business unit.

Business economist helps in planning, production & marketing planning, employing the latest organizational model & develop management techniques to maximize output & minimize operating cost of the firm.

3) Advisory to the company:

The business economist advises the businessman on all economic and non-economic matters. By virtue of business economist experience it helps to analyze various problems related with volume of investment, sales promotion, competitive conditions, financial positions, labour relation, and Government policies so that he it will help to secured the business while doing every activity.

Business economist must be in touch with fast changing technological development and suggest the most suitable information technology to be adopted by the company.

4) Knowledge about the environment factors which affects the business:

In order to make the business more viable and profitable the business economist should have a detailed knowledge and information about the environment of a company. Broadly speaking the environmental factors are divided in two parts:

1. Business Environment (External Factors)

2. Business Operations (Internal Factors)

Business Environment helps to study the all factors and forces and beyond the control of individual business enterprises and its management which will help to maintained the business as stable. Business operation helps to study those factors and forces, which operate, well within the company and influence its operations which can minimize the cost of the business.

Responsibility of a Business Economist

1) To make a reasonable profit on capital employed:

He must have a strong conviction that profits are essential and his main obligation is to assist the management in earning reasonable profits on capital employed in the firm.

2) He must make successful forecasts by making in depth study of the internal and external factors:

This will have influence over the profitability or the working of the firm. He must aim at lessening if not fully eliminating the risks involved in uncertainties. He has a major

responsibility to alert management at the earliest possible time in case he discovers any error in his forecast, so that the management can make necessary changes and adjustments in the policies and programmes of the firm.

3) He must inform the management of all the economic trends

A managerial economist should keep himself in touch with the latest developments of national economy and business environment so that he can keep the management informed with these

4) He must establish and maintain contacts with individuals and data sources:

(i) To establish and maintain contacts:

A managerial economist should establish and maintain contacts with individuals and data sources in order to collect relevant and valuable information in the field.

(ii) To develop personal relations: developments and expected trends of the economy.

To collect information he should develop personal relations with those having specialized knowledge of the field.

(iii) To join professional associations and should take active part in their activities:

The success of this lies in how quickly he gathers additional information in the best interest of the firm.

5) He must earn full status in the business and only then he can be helpful to the management in good and successful decision-making:

1) He must receive continuous support for himself and his professional ideas by performing his function effectively.

2) He should express his ideas in simple and understandable language with the minimum use of technical words, while communicating with his management executives.

UNIT – II

CONSUMPTION

Consumption means the satisfaction of human wants by using available goods and services. According to Ely, Consumption means the use of economic goods and personal service in the satisfaction of human wants. In other words it is the destruction of utility for the satisfaction of a human want, consumption induces production. It is beginning and end of all economic activities. The basic laws of consumption includes a) Law of diminishing marginal utility. B) Equi – marginal utility. Consumer behavior can be better understood through the concepts of consumer surplus, indifference curves and consumer equilibrium.

BUSINESS SIGNIFICANCE OF CONSUMPTION AND DEMAND

1) The beginning of all economic activity

Consumption is the start of all human economic activity. If a person desires something, he will take action to satisfy this desire. The result of such an effort is consumption, which also means the satisfaction of human wants.

2. End of economic activities

If, for example, a person desires a sandwich, they will take the effort to make the sandwich. Once it is made, the food is consumed, resulting in the end of an economic activity.

3. Consumption drives production

According to economist Adam Smith, “Consumption is the sole purpose of all production.” It means that the production of goods and services is dependent on the level of consumption.

4. Economic theories

The study of consumption theory has helped economists formulate numerous theories such as the Law of Demand, the Consumer Surplus concept, and the Law of Diminishing Marginal Utility. These theories help analysts understand how individual behavior affects the input and output in the economy.

5. Government theories

Consumption habits also help the government formulate theories. The minimum wage rate and tax rate are determined based on the habits of individuals. It also helps the government make decisions on the production of essential and non-essential commodities in a country. It

also provides the government with insight into the saving to spending ratio in the economy.

6. Income and employment theory

Consumption plays an important role in the income and employment theory under Keynesian economics as put forth by John Maynard Keynes. Keynesian theory states that if consuming goods and services does not increase the demand for such goods and services, it leads to a fall in production. A decrease in production means businesses will lay off workers, resulting in unemployment. Consumption thus helps determine the income and output in an economy.

DEMAND ANALYSIS

Demand is the willingness to buy a commodity or service which is backed by necessary resources. Demand is an effective desire. It is a desire backed by power to buy and willingness to buy. In economics demand has the following three attributes.

i) Desire to possess or use a commodity or service.

ii) Willingness to possess it.

iii) Capacity to buy it.

Both willingness and ability to pay are essential to convert a desire into a demand. If a person is willing to buy a car but he doesn"t have the resources to buy it, it is not demand. If he is in a position to buy a car but is not willing to buy, again, it is not demand.

"By demand we mean the various quantities of a given commodity or service which consumers would buy in one market in a given period of time at various prices, or at various incomes, or at various prices of related goods."-**Bober**

Demand is meaningless without reference to price; demand is always at a price. Suppose a person is willing to buy a car when its price is Rs.2 lakhs. He is in a position to pay this price. It is demand for a car. But if the price of the car goes up to Rs.3 lakhs, he may not afford to buy it. Or he may not think it worthwhile to spend so much money on it. It is no longer a demand. So, demand is always expressed with reference to price.

Similarly, demand is always used with reference to a certain period of time. Demand for woolen clothes is higher in winter than in summer. Demand for water coolers is higher in summer than during winter.

The demand for any commodity or service at a certain price is the quantity or amount of it

which will be bought at that price during a given period of time. Without reference to price and time, demand has no meaning.

TYPES OF DEMAND

i) Joint demand

When a number of goods and services are demanded for a joint purpose, it is called joint demand. For example, for the construction of a house, several items like cement, sand bricks, iron, wood and labour are required. This is a case of joint demand.

ii)Direct demand

Direct demand is the demand for direct use or consumption. It is the demand for the ultimate object. For example, demand for a car, a house, or a piece of cloth.

iii) Derived demand

The demand for various goods and services to manufacture goods to meet the ultimate or direct demand of purchasers is called derived demand.

iii) Composite demand

The demand for a goods or services which can be put to several uses is called composite demand. For example, milk is demanded demand to prepare tea, coffee, butter, ghee, sweets, curd, paneer and also for direct consumption.

iv) Complementary demand

When two or more than two goods are demanded because, they complement each other‟s role. It is called complementary demand. For example, pen and ink, bread and butter, car and petrol are some examples of complementary demand.

v) Competitive demand

A large number of goods compete with each other as substitutes to fulfill the same need. For example, tea and coffee, roadways and railways, wheat and rice, vegetable oil and pure ghee are substitutes or near substitutes of each other. Demand for them is called competitive demand.

LAW OF DEMAND

Law of demand explains the relationship between the price of a commodity and its quantity demanded over a certain period of time. According to this law, other things remaining the same, there is an inverse relationship between the price of a commodity and its quantity

demanded.

“The amount demanded increases with a fall in price and diminishes with a rise in prices”.

Marshall

The law of demand states that other things being constant, there is an inverse relationship between the price of various commodities and their quantity demanded over a certain period of time. In other words, with the increase in the price of a commodity, there is a fall in its demand and with the decrease in its price, there is a rise in its demand.

Assumptions of the law of demand

i) Income of the consumer remains unchanged.

ii) Prices of other related goods remain constant.

iii) Tastes of the consumers remain unchanged during the period of time.

iv) The consumers, expectations about future prices are neutral.

v) The effect of advertising is ruled out.

vi) Other relevant factors like the size of the population, seasonal and climatic factors, habits of the people and all other factors influencing demand remain unchanged.

An Individual’s demand schedule

An individual‟s demand schedule presents the preference scales of a person for a commodity at its different price levels.

“A demand schedule is a table showing how the quantity demanded of some product during a specified period of time changes as the price of that product changes, holding all other determinants of quantity demanded constant”.**Baumol**

In other words, a demand schedule indicates how much a consumer is willing and able to buy at different price levels during a certain period of time

Individual Demand Schedule	
Price of X (Rs.per kg)	**Quantity demanded (kgs per month)**
0	6
1	5
2	4
3	3
4	2
5	1
6	0

Demand schedule of a person for commodity X shows an inverse relationship between the price of X (Px) and its quantity demanded.

When the price of X is zero rupees per kilogram i.e. the commodity X has no price, its demand is 6 kilogram per month. With the rise in its price, its demand starts falling.

The inverse relationship also holds good if we start moving upward from below, the price of X being 6 rupees per kilogram, its demand is zero. In other words, the consumer is not willing to buy the commodity at all. But when its price starts falling, the quantity demanded begins to increase.

DEMAND CURVE

An individual‟s demand curve is a graphic representation of his demand schedule. It shows how the quantity demanded of commodity changes with the changes in its price.

"The picturisation of the demand schedule is called the demand curve".

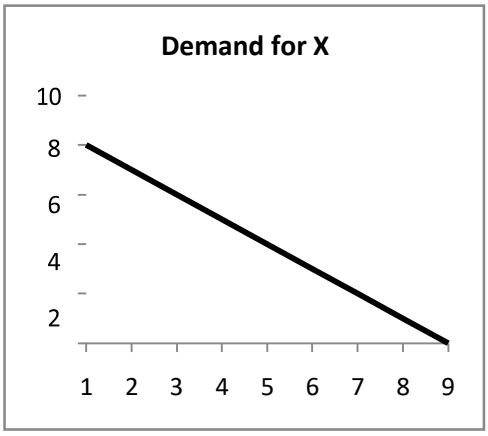
Samuelson

An Individual's demand curve

An individual's demand curve is the graphical depiction of the quantity demanded by him at different levels of price. It is the graphical representation of an individual's demand schedule.

The information contained in the above table can be presented in a graph like figure, which is called demand curve.In the diagram below, quantity demanded is measured on X axis and price of the commodity is measured on Y axis. Plotting each pair of values i.e. price and

commodity as a point on the graph and joining the points, we get the individuals demand curve for commodity X.



MARKET DEMAND SCHEDULE

Market demand schedule for a commodity is the sum of the demand schedules of the individual consumers. In other words, the market demand schedule represents the preference scale of all the consumers taken together. It shows how much quantity is demanded at different price levels by the society.

Price of X	A‟s demand (QA)	B‟s demand (QB)	C‟s demand (QC)	Total Demand (QDX)
5	0	0	0	0
4	1	2	3	6
3	2	4	6	12
2	3	6	9	18
1	4	8	12	24
0	5	10	15	30

Fig II shows the demand curve of A.

Fig III shows the demand curve of B.

Fig iv shows the demand curve of C.

The horizontal summation of all the individual demand curves will produce the market demand curve. Therefore, the market demand for X is the Sum of all the individual demands in the economy.

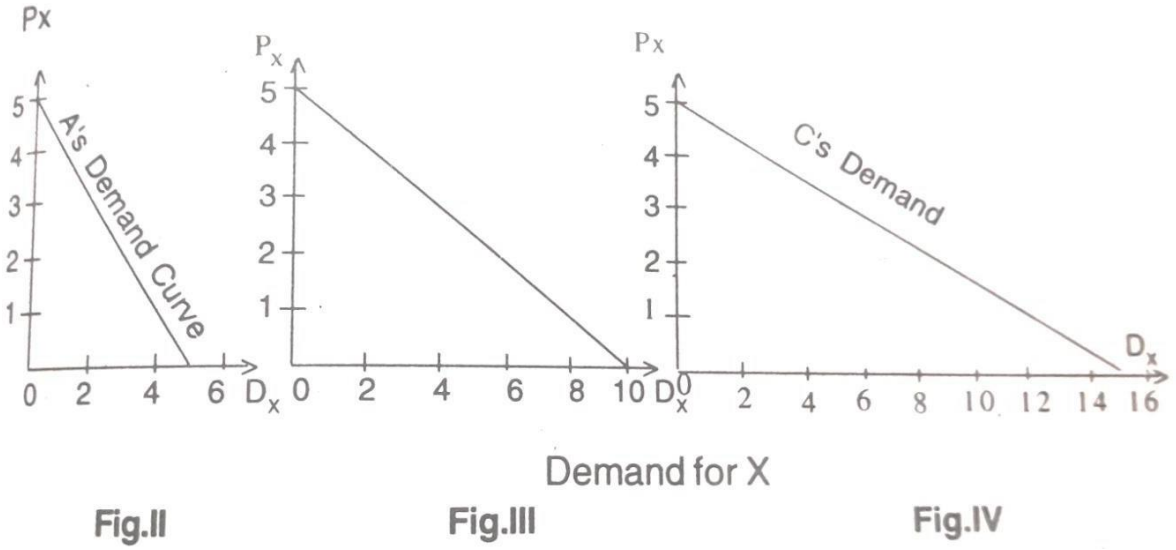
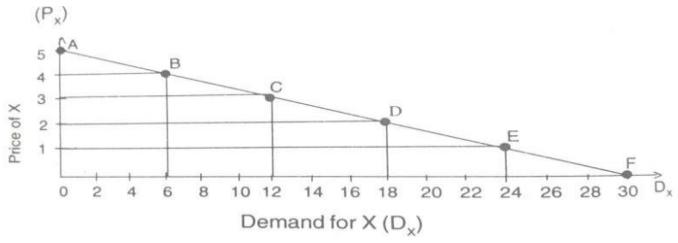


Table above shows the horizontal summation of the quantity demanded of X by persons A, B and C. By plotting different aggregate points of the quantity demanded and the respective price levels, we can draw the market demand curve. Here the aggregate form of above table is reproduced.

Total demand (DX) =A‟s demand + B‟s demand + C‟s demand

Px	Dx
5	0
4	6
3	12
2	18
1	24
0	30

Market Demand Curve



Above figure depicts the market demand curve on the basis of the market demand schedule shown in table above. It is the summation of individual‟s demand schedule in horizontal form.

The different point on the market demand curve show the willingness of the society to buy a particular quantity of the commodity X at its different price levels.

WHY DEMAND CURVES SLOPE DOWNWARDS?

The following specific factors are responsible for the downward slope of a demand

curve.

i) With the fall in the price/prices of commodity or commodities, the value of a unit of money increases. The same unit of money can buy more goods at lower prices than at higher prices.

ii) Rise in real income takes place with the fall in the price of a commodity. Most probably, a part of the rise in the real income is spent on the same commodity the price of which has fallen.

iii) It is observed that a large number of goods are substitutes of several goods in some ways or the other. With the fall in the price of a commodity, the cheaper commodity is preferred to the commodities whose prices have not changed.

iv) A commodity is put to several uses when it becomes cheaper. For example when tomatoes become cheaper, tomato sauce is prepared by the housewives.

v) The fall in the price of a commodity has a psychological effect also. People like and enjoy buying more, which they were unable to do at higher prices.

FACTORS AFFECTING DEMAND

Some of the important factors which influence the demand for goods and services are listed in the following paragraphs.

i) Income of the household

The income is a decisive variable which greatly influences the volume of quantity demanded as well as its quality. An increase or decrease in income increases or decreases the demand for a commodity.

ii) Prices of other commodities

Many goods have a definite relationship with each other. Some are substitutes of and some are complementary to other goods. Even, goods which are not substitutes in the strict economic sense are competitive in some way or the other.

Any rise or fall in the prices of substitutes of a commodity will affect its demand and shift the demand curve to the right or the left. For example, the rise in the price of tea will expand the demand for coffee.

iii) Tastes and preferences

Tastes and preferences of people highly influence the demand for goods. The tastes, habits and preferences of the people vary from area to area and from time to time. The varying social, religious, economic and environmental conditions of different people influence their choice of food, clothing, living conditions, houses, entertainment and what not.

iv) Advertising

Modern ages are the age of advertising and the media - both print and visual - are highly affecting the life style of people. An aggressive advertising campaign tends to shift the demand curve of a particular commodity to the right.

v) Product life-cycle

The product life-cycle model states that demand pattern for a commodity undergoes some typical changes at different stages of the life-cycle. The life-cycle concept is very relevant in case of durable goods like TVs, cars and computers.

vi) Size and composition of population

The size of population of a country determines the level of demand for all goods and services. The larger the population of a country, the larger the quantity of goods and services demanded by it. If there are many to be fed, clothed and housed, demand is supposed to be high.

vii) Distribution of income

Uneven distribution of income and wealth greatly squeezes the demand level in an economy. It is a common fact that the rich sections of society have a low propensity to consume. Their demand pattern encourages the demand for comforts and luxuries.

viii) Scientific and technological development

Science and technology are there to revolutionize the life style of people. Almost all economic activities are being speeded up by scientific discoveries and inventions. Thousands of new products are entering our daily life. New wants are emerging. Daily arrival of new products, new machines and new services had greatly influenced the demand pattern of the society.

ix) State of the economy

The state of economy i.e. whether it is developed or under developed, experiencing inflation or deflation also influences the demand for goods and very services. The people of developed countries enjoy a very high standard of living. Their size of demand is very high, as compared to the people of under developed.

x) Changes in money supply

Increase in money supply raises the money income of people. People get enhanced purchasing power. The increase in money supply which is generally the outcome of increased economic activities of the state puts a lot of money in the hands of the people. Their demand level increase day by day.

xi) Miscellaneous factors

- **Changes in fashion** raise the demand for the goods which are in vogue. Goods which are out of fashion are not purchased by people even at lower prices.
- **Changing weather** and climatic conditions also influence the demand for several goods. Demand for woolen clothes increases during winter. Eggs are more in demand during winter as compared to summer.
- **Changing habits** also alter the demand conditions in an economy. Increasing demand for tea, coffee, cold drinks, eggs, non-vegetarian food items, snacks and ice creams is being witnessed because of changing habit and tastes of the people.
- **A system of progressive taxation,** particularly income and wealth taxes, reduces the disposable income of the high income group. Demand for comforts and luxuries are greatly affected by it.
- **Religious and social factors** have their own role to play in influencing the demand for goods and services. Demand for sweets increases considerably on every Tuesday because the Hindus offer „parsad" in temples on that day.

MEANING OF ELASTICITY OF DEMAND

The word „elasticity" is a technical term which stands for the sensitivity or responsiveness of a dependent variable to the changes in independent variables. The elasticity of demand is the responsiveness of demand to the changes in the price of a commodity, income of the consumers and the prices of related goods.

PRICE ELASTICITY OF DEAMAND

A proportionate change in quantity demanded brought by a proportionate change in price is called the price elasticity of demand.

The price elasticity of demand is a measure of responsiveness of the quantity demanded to a change in the price of a good, ceteris paribus.

"Elasticity of demand may be defined as "the percentage change in the quantity demanded by the percentage change in price."

Alfred Marshall

$$Ed = (-)\frac{\text{Proportionate change in quantity demanded}}{\text{Proportionate change in price}}$$

Types of Price Elasticity of Demand

The extent of responsiveness of demand with change in the price is not always the same. The demand for a product can be elastic or inelastic, depending on the rate of change in the demand with respect to change in price of a product. Elastic demand is the one when the response of demand is greater with a small proportionate change in the price. On the other hand, inelastic demand is the one when there is relatively a less change in the demand with a greater change in the price.

For better understanding the concepts of elastic and inelastic demand, the price elasticity of demand has been divided into five types, which are shown in Figure-1:

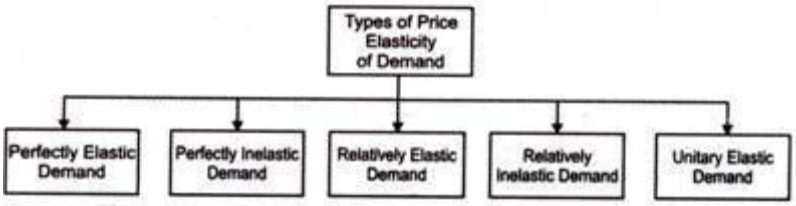


Figure-1: Different Types of Price Elasticity of Demand

1. Perfectly Elastic Demand:

When no change in price of a product causes a major change in its demand, it is said to be perfectly elastic demand. In perfectly elastic demand, a no change in price causes increase in demand to infinity. In perfectly elastic demand, the demand curve is represented as a horizontal straight line, which is shown in Figure-2:

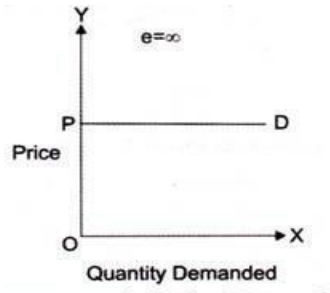


Figure-2: Perfectly Elastic Demand

From Figure-2 it can be interpreted that at price OP, demand is infinite; It can also be interpreted from Figure-2 that at price P consumers are ready to buy as much quantity of the product as they want.

2. Perfectly Inelastic Demand:

A perfectly inelastic demand is one when there is no change produced in the demand of a product with change in its price. The numerical value for perfectly inelastic demand is zero (e_p=0). In case of perfectly inelastic demand, demand curve is represented as a straight vertical line, which is shown in Figure-3:

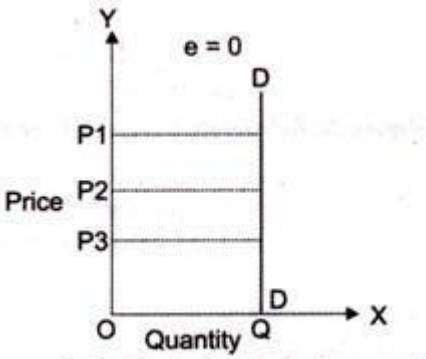


Figure-3: Perfectly Inelastic Demand

It can be interpreted from Figure-3 that the movement in price from OP1 to OP2 and OP2 to OP3 does not show any change in the demand of a product (OQ). The demand remains constant for any value of price. In case of essential goods, such as salt, the demand does not change with change in price. Therefore, the demand for essential goods is perfectly inelastic.

3. Relatively Elastic Demand:

Relatively elastic demand refers to the demand when the proportionate change produced in demand is greater than the proportionate change in price of a product. The numerical value of relatively elastic demand ranges between one to infinity. Mathematically, relatively elastic demand is known as more than unit elastic demand (e_p>1). For example, if the price of a product increases by 20% and the demand of the product decreases by 25%, then the demand would be relatively elastic. The demand curve of relatively elastic demand is gradually sloping, as shown in Figure-4:

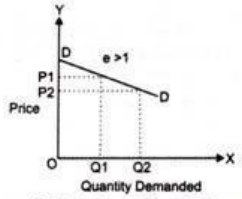


Figure-4: Relatively Elastic Demand

It can be interpreted from Figure-4 that the proportionate change in demand from OQ1 to OQ2 is relatively larger than the proportionate change in price from OP1 to OP2. Relatively elastic demand has a practical application as demand for many of products respond in the same manner with respect to change in their prices. For example, the price of a particular brand of cold drink increases from Rs. 15 to Rs. 20. In such a case, consumers may switch to another brand of cold drink. However, some of the consumers still consume the same brand. Therefore, a small change in price produces a larger change in demand of the product.

4. Relatively Inelastic Demand:

Relatively inelastic demand is one when the percentage change produced in demand is less than the percentage change in the price of a product. For example, if the price of a product increases by 30% and the demand for the product decreases only by 10%, then the demand would be called relatively inelastic. The numerical value of relatively elastic demand ranges between zero to one (e_p<1). Marshall has termed relatively inelastic demand as elasticity being less than unity. The demand curve of relatively inelastic demand is rapidly sloping, as shown in Figure-5:

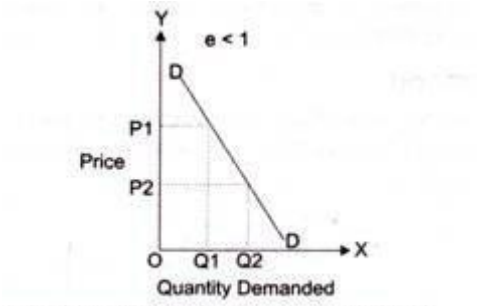
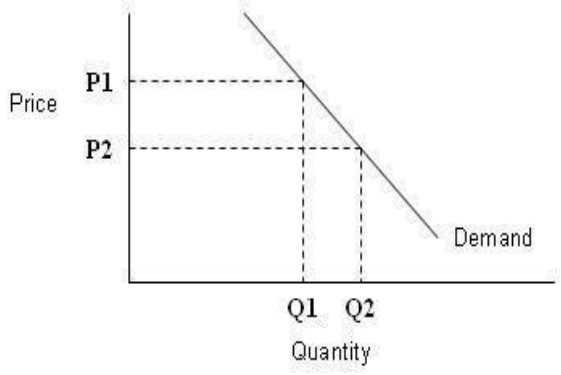


Figure-5: Relatively Inelastic Demand

It can be interpreted from Figure-5 that the proportionate change in demand from OQ1 to OQ2 is relatively smaller than the proportionate change in price from OP1 to OP2. Relatively inelastic demand has a practical application as demand for many of products respond in the same manner with respect to change in their prices.

5. Unitary Elastic Demand:

In the case of unitary elastic demand, changes in the quantity demanded take place in the same percentage or proportion as in the price. In other words, the proportionate changes in quantity demanded are exactly the same as the proportionate changes in price. This type of behaviour is exhibited by the demand of most of the goods of daily use. Goods of this type fall in between the necessities of life and luxury goods.



The above figure depicts a demand curve which exhibits the unity elasticity of price (Ed = 1). In this case, the changes in price cause equi-proporationate changes in quantity in the opposite direction.

INCOME ELASTICITY OF DEMAND

The income elasticity of demand measures the responsiveness of the quantity demanded to a change in income. The analysis of the response of demand to changes in income both personal and national, is extremely important for planners, business people and industrialists. All round economic development increases the income level of the people. As income rises, people increase their demand for goods and services.

In simple words, the income elasticity of demand measures the response of the quantity demanded to the changes in income.

$$Ed_y = \frac{\text{Propoprtionate change in quantity demanded}}{\text{Proportionate change in income}}$$

CROSS ELASTICITY OF DEMAND

The cross elasticity of demand measures the responsiveness of quantity demanded to a change in the prices of the related goods. A large number of goods are related to each other either in the form of substitutes or as complements. For example, tea and coffee, butter and margarine, fuel wood and cooking gas, refined oil and vanaspati ghee are substitutes of each other. A fountain pen and ink, a car and petrol are complementary goods. Now a day, a large number of brands of a commodity are entering the markets daily. They are competing with one another for a larger share of the market. In a broader sense, they are very near substitutes of one another.

The cross elasticity of demand refers to the responsiveness of demand for a commodity to changes in the prices of other related goods (substitutes or complements).

$$E_{xy} = \frac{\text{Proportionate change in demand for commodity X}}{\text{Proportionate change in price of commodity Y}}$$

MEASUREMENT OF ELASTICITY OF DEMAND

The following are the methods used to calculate elasticity of demand

i) Proportionate method.

ii) Point method.

iii) Arc method.

iv) Expenditure method.

v) Revenue method.

i) Proportionate method

The price elasticity of demand is defined as the proportionate change in the quantity demanded in response to a change in price. This method can also be used by converting our data into percentage form because the elasticity of demand is also defined as a percentage change in quantity demanded due to a percentage change in price.

$$\text{Elasticity of Demand (ED)} = \frac{\text{Proportionate Change in Demand}}{\text{Proportionate Change in Price}}$$

ii) Point Method

The point price elasticity of demand is the measurement of price elasticity of demand at a particular point on the demand curve.

"Elasticity computed at a single point on the curve for an infinitely small change in price, is point elasticity."

Leftwitch

For a straight line demand curve, point elasticity can be found by using of the following formula.

$$Ed = -\frac{\Delta Q}{\Delta P} \times \frac{P}{Q}$$

iii) Arc elasticity or arc method

The arc elasticity of demand measures the price elasticity of demand between two points on a demand curve.

According to Leftwitch, "when elasticity is computed between two separate points on a demand curve, the concept is called arc elasticity."

Arc elasticity is the price elasticity of demand between two points on a demand curve. It can be computed both for linear and non-linear demand curves. Arc elasticity of demand can be computed with the use of the following formula:

$$Ed = (-)\frac{\frac{\Delta Q}{(Q_1 + Q_2)/2}}{\frac{\Delta P}{(P_1 + P_2)/2}}$$

iv) Expenditure method

The expenditure incurred by the consumer while buying a commodity and the revenue received by the sellers while selling the commodity are the two sides of the same coin. These two figures always remain equal. There is a clear cut relationship between the expenditure on a commodity and its price changes. There is also a meaningful co-relation between the price changes and the total revenue receipts of the sellers.

Here we are more interested in knowing the behaviour of the total expenditure due to changes in price. With a fall in the price of a commodity, its quantity demanded increases. But what happens to the total expenditure, it depends upon the change in the quantity demanded in response total given price cut.

There are three possibilities of the change in the total expenditure due to a rise or fall in price. It may rise, it may fall or it may remain unchanged.

The elasticity of demand and the total expenditure have the following relationship.

i) If a fall in price increases the total expenditure and a rise in price reduces it, the elasticity of demand is more than unity i.e., Ed>1

ii) If a fall in price reduces total expenditure and a rise in price increases it, the elasticity of demand in less than unity i.e., Ed<1

iii) If a rise or fall in price does not affect the total expenditure, the elasticity of demand is unity i.e., Ed=1

v) Revenue method

Average revenue, marginal revenue and the elasticity of demand have a definite relationship which is presented in the following form:

$$Ed = \frac{\text{Average Revenue}}{\text{Average Revenue - Marginal Revenue}}$$

This is also written in the following form

$$Ed = \frac{P}{P - M}$$

Since Price (P)=Average Revenue(A)

$$\text{Average Revenue} = \frac{\text{Total revenue Units}}{\text{Goods sold}}$$

Marginal revenue = Net revenue received by selling one more unit of a good.

- When AR>MR and MR is positive, the demand is more elastic.
- When AR is positive but MR is equal to zero the demand is unity elastic.
- When AR is positive and MR is negative, the demand is less elastic.
- When AR is zero, elasticity of demand is also zero.

Relationship between price elasticity and sales Revenue

The proper estimation of price elasticity is of great significance for business decision making. A firm's revenue changes as a result of the change in price.

Total revenue (TR) earned from sales by a firm is ob-tained by multiplying average unit price with the total quan-tity sold, i.e., TR = P x Q.

The total revenue obtained from OQ quantity sold at OP price is OPCQ

(1) If the demand price is elastic, with an increase in price, there is a large fall in sales so that the total rev-enue decreases. On the other hand, if the price falls, the sales increase so much that the total revenue rise

2) If the elasticity of demand is equal to unity, there is no change in total revenue earned from sales even with the change in price. For example, with the fall in price by 5%, the sales will increase by 5% whereby the total revenue will remain unchanged.

3) If the demand price is inelastic, the sales will fall with the increase in price but the total revenue will rise. On the other hand, with the fall in price, the sales will increase but the total revenue will fall.

In general, unity elasticity is not found in practice. When price changes in a certain ratio, the sales normally change in a high or low ratio.

Thus, if the management wants to increase sales, it has to reduce the price. But if the reduction in price is compensated by the additional sales, the total revenue will increase or remain the same. Similarly, the management can raise the price of product for increasing revenue

Unit –III

PRODUCTION ANALYSIS

MEANING OF PRODUCTION

Production is the creation of utilities for sale. The creation of all types of goods and services for sale is called production.

Definition

"Production may be defined as the creation of utilities i.e. wants satisfying power, in economic goods."

Raymond Bye

FACTORS OF PRODUCTION

The purpose of production which makes use of producer goods and services in the economic activities is to create utilities by providing and endless flow of goods and service. In order to achieve the production of utilities, the resources available to mankind are mobilized. These resources are called factors of production.

The modern economics have classified the factors of production into four groups

i) Land
ii) Labour
iii) Capital
iv) Entrepreneur

i) Land

Land is the original and basic factor of production. In economics, the term „land" is used in a broader sense. It includes all the natural resources or gifts of nature. It does not include only surface land but also forests, mountains, sea, climate, air and so on. The term land includes all the natural resources on the surface (soil, plots), below the surface (minerals) and above the surface (climate, air).

As compared to other factors of production, land has certain special characteristics like limited supply, being a free gift of nature, indestructibility and immobility. Land is the primary factor of production. No production is possible without land. Land is the basis of the primary sector (agriculture and allied), secondary sector (industries) and tertiary sector (trade, transport and communication). It is also the basis of power and energy which play a key role in the economic development of a country.

ii) Labour

Labour is an active agent of production. In economics, the term labour stand for all types of physical or mental work which is done in expectation of some reward in kind or cash. Labour is inseparable from the laborer. A labourer is unlike other commodities. In case of commodities other than labour, the ownership changes in the process of sale purchase. A labourer sells his labour power or capacity to work. Labour is perishable, mobile, differs in efficiency and has consciousness and power of judgments.

iii) Capital

Capital is a very crucial factor of production. It enables labour to effectively utilize the gifts of nature. In modern times, because of scientific and technological developments which involve a lot of capital investment, the role of capital has increased further.

For an economist, capital is that form of wealth which helps in production. In other words, capital is that part of private or public wealth which further generates income or contributes to production.

Capital also includes human capital. Capital is produced by man; hence its supply is elastic. It is a mobile and transferable factor of production. Capital is a passive factor and labour activates it to work.

Capital is necessary for production. It increases the productivity and efficiency of workers. It plays a vital role in the economic development of a country and helps in creating employment opportunities.

iv) Entrepreneur

In order to produce something in an organized manner on a sufficient scale, land, labour and capital have to be arranged. They are brought together and set to work. The person who initiates this process of organizing factors of production is usually called the entrepreneur. He stands for bearing those risks and uncertainties which are associated with the ownership of an industrial or business concern.

The entrepreneur conceives and initiates the project, takes production decisions, arranges finance, man and materials. He combines the other factors of production in the right proportion to produce goods and services. These days his main functions include marketing of the product and working as innovator.

PRODUCTION FUNCTION

Production is the outcome of the combined efforts of land, labour, capital and entrepreneur. The entrepreneur arranges land, labour and capital, combines them in required proportions and sets them to work. Production function expresses the functional relationship between resources (inputs) and output (goods and services). In fact, given the state of technology, production function shows the technological-physical relationship between inputs and output.

It is observed that in the short-run some of the inputs are fixed. They are difficult to change in the short-run. The laws of returns deal with the short-run production function. Let us have a look at a simple production function which is given below

$$O = f(L, L_{ab,} K,T)$$

Where, O = Output, L = Land, L_{ab} = Labour, k = Capital T = Technology)

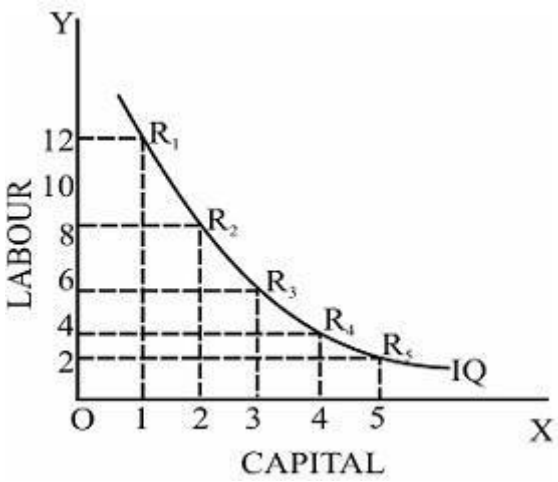
PRODUCTION FUNCTION THROUGH ISO-QUANT CURVES

A firm has a number of alternative combinations of two or more factors which can be used to produce a given output. Any of the combinations can be chosen to produce that output; if one combination is chosen the other combinations may be ignored. Table below shows various hypothetical combinations of capital and labour which will enable a firm to produce 1,000 units of a product.

Production with Two Variable Inputs

Units of capital	Units of labour	Output in units
1	12	1,000
2	8	1,000
3	6	1,000
4	4	1,000
5	2	1,000

The hypothetical table shows clearly that an output of 1,000 units of commodity can be produced either by 1 units of capital and 12 units of labour, or 2 units of capital and 8 units of labour, of by any of the combinations mentioned above. All combinations are equally suitable, as all of them can produce the same output. Table is illustrated in the following figure.



In the above figure, the horizontal axis represents labour and the vertical axis represents capital. The curve IQ shows the different combinations that produce 1,000 units of output. Each of the points R1, R2, R3, R4 and R5 on the curve shows a capital-labour combination that can produce 1,000 units of output. For example, point R1 indicate a combination of 1 unit of capital and 12 units of labour, point R2 represents a combination of 2 units of capital and 8 units of labour, and so on. But all the combinations of inputs represent the same output and the firm can use any one of the combinations to produce the output of 1,000 units.

The indifference curve in above figure is known s an equal product curve or an iso-quant curve or an iso-quant curve (iso=equal; quant=quantity).

LAW OF RETURNS

The law of return takes three forms:

a) Law of diminishing return
b) Law of constant returns
c) Law of increasing returns

a) LAW OF DIMINISHING RETURNS

The law of diminishing returns is one of the oldest and most controversial parts of economic theory. This law states that if the quantity of one factor, say land, is fixed and to increase output, more and more units of labour and capital are applied, increase in output will take place at a decreasing rate. In other words, the marginal increase in output will be comparatively smaller than the increase in labour and capital.

Assumptions of the law

i) The technique of production remains constant.
ii) The co-efficients of production are variable, i.e., factor proportions are variable.

iii) Some factors can be held constant.

iv) The units of variable factor are homogeneous.

b) LAW OF CONSTANT RETURNS

The law of constant returns states that the increase in output or marginal physical product is that the same rate as that in the units of labour and capital. Additional units of labour and capital yield the same return. The per unit cost of production remains the same at all levels of output.

c) LAW OF INCREASING RETURNS

The law of increasing returns states that the marginal increase in output is proportionately higher than the increase in the units of labour and capital. When more and more units of labour and capital are applied, they bring increasing returns or raise total output at an increasing rate. The law of increasing returns is based on the assumption that there always remains ample scope for improvements in the techniques of production. The improvements in the methods of production, use of modern machines and increased division of labour raise the productivity. The theory also assumes that some of the factors or atleast one factor is indivisible. Most of the remaining factors are divisible. The law of increasing returns states that an addition in units of inputs brings higher and higher levels of marginal output.

LAW OF VARIABLE PROPORTION

Law of variable proportions establishes the short run relationship between the changes in output and the changes in inputs. In the short period, some factors are fixed and some are variable. So in the short run, if we want to increase the output, we have to vary the variable factors only. The law is called the law of variable proportions because when in the short run, increasing doses of variable factors are applied upon some fixed factors, the factor proportion changes.

The law of variable proportions which comprises three stages applies in all economic fields. Prof. Samuelson has stated that an increase in some inputs relative to other comparatively fixed inputs will cause output to increase; but after a point, the extra output resulting from the same additions of inputs will become less and less; this falling of extra returns is a consequence of the fact that the new doses of varying resources have less and less of the constant resources to work with.

The law of variable proportions comprises three stages. At the initial level when a variable factor is increased on some fixed factors, the factor proportion becomes favorable. It increases the marginal output at an increasing rate.

After some time, when the factor proportion becomes optimum, marginal output reaches the maximum level. For a while, the optimum level is not disturbed by an increase in variable inputs. So the marginal output remains constant for a few doses.

But when the variable factor is increased further, the optimum factor proportion is disturbed. It becomes unfavorable. The marginal output starts declining. At this stage the law of diminishing returns starts operating.

The law of diminishing returns is based on the following assumptions:

(1) Only one factor is variable while others are held constant.

(2) All units of the variable factor are homogeneous.

(3) There is no change in technology.

(4) It is possible to vary the proportions in which different inputs are combined.

(5) It assumes a short-run situation, for in the long-run all factors are variable.

(6) The product is measured in physical units, i.e., in quintals, tonnes, etc.

Explanation of the law:

Given these assumptions, let us illustrate the law with the help of Table 1, where on the fixed input land of 4 acres, units of the variable input labour are employed and the resultant output is obtained. The production function is revealed in the first two columns. The average product and marginal product columns are derived from the total product column.

The average product per worker is obtained by dividing column (2) by a corresponding unit in column (1). The marginal product is the addition to total product by employing an extra worker. 3 workers produce 36 units and 4 produce 48 units. Thus the marginal product is 12 i.e., (48-36) units.

Table. 1: Output of Wheat in Physical Units (Quintals)

(1) *No. of Workers*	(2) *Total Product*	(3) *Average Product*	(4) *Marginal Product*	
1	8	8	8	} Stage I
2	20	10	12	
3	36	12	16	
4	48	12	12	} Stage II
5	55	11	7	
6	60	10	5	
7	60	8.6	0	} Stage III
8	56	7	– 4	

An analysis of the Table shows that the total, average and marginal products increase at first, reach a maximum and then start declining. The total product reaches its maximum when 7 units of labour are used and then it declines. The average product continues to rise till the 4th unit while the marginal product reaches its maximum at the 3rd unit of labour, then they also fall. It should be noted that the point of falling output is not the same for total, average and marginal product.

The marginal product starts declining first, the average product following it and the total product is the last to fall. This observation points out that the tendency to diminishing returns is ultimately found in the three productivity concepts. The law of variable proportions is presented diagrammatically in Figure 4. The TP curve first rises at an increasing rate up to point A where its slope is the highest. From point A upwards, the total product increases at a diminishing rate till it reaches its highest point C and then it starts falling.

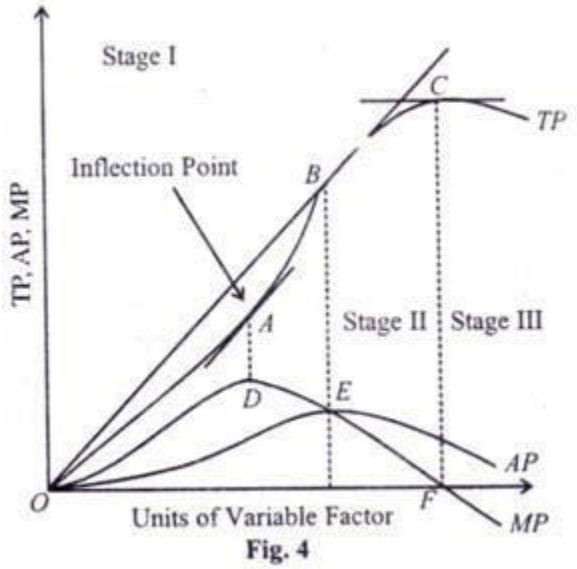


Fig. 4

Point A where the tangent touches the TP curve is called the inflection point up to which the total product increases at an increasing rate and from where it starts increasing at a diminishing rate. The marginal product curve (MP) and the average product curve (AP) also rise with TP. The MP curve reaches its maximum point D when the slope of the TP curve is the maximum at point A.

The maximum point on the AP curves is E where it coincides with the MP curve. This point also coincides with point B on TP curve from where the total product starts a gradual rise. When the TP curve reaches its maximum point C the MP curve becomes zero at point F. When TP starts declining, the MP curve becomes negative. It is only when the total product is zero that the average product also becomes zero. The rising, the falling and the negative phases of the total, marginal and average products are in fact the different stages of the law of variable proportions which are discussed below.

Three Stages of Production:

Stage-I: Increasing Returns:

In stage I the average product reaches the maximum and equals the marginal product when 4 workers are employed, as shown in the Table 1. This stage is portrayed in the figure from the origin to point E where the MP curve reaches its maximum and the AP curve is still rising. In this stage, the TP curve also increases rapidly. Thus this stage relates to increasing returns. Here land is too much in relation to the workers employed. It is, therefore, profitable for a producer to increase more workers to produce more and more output. It becomes cheaper to produce the additional output. Consequently, it would be foolish to stop producing more in this stage. Thus the producer will always expand through this stage I.

Causes of Increasing Returns:

1. The main reason for increasing returns in the first stage is that in the beginning the fixed factors are larger in quantity than the variable factor. When more units of the variable factor are applied to a fixed factor, the fixed factor is used more intensively and production increases rapidly.
2. In the beginning, the fixed factor cannot be put to the maximum use due to the non-applicability of sufficient units of the variable factor. But when units of the variable factor are applied in sufficient quantities, division of labour and specialization lead to per unit increase in production and the law of increasing returns operate.
3. Another reason for increasing returns is that the fixed factors are indivisible which means that they must be used in a fixed minimum size. When more units of the variable factor are

applied on such a fixed factor, production increases more than proportionately. This point towards the law of increasing returns.

Stage-II: Diminishing Returns:

It is the most important stage of production. Stage II starts when at point E where the MP curve intersects the AP curve which is at the maximum. Then both continue to decline with AP above MP and the TP curve begins to increase at a decreasing rate till it reaches point C. At this point the MP curve becomes negative when the TP curve begins to decline, table 1 show this stage when the workers are increased from 4 to 7 to cultivate the given land.

In figure 1, it lies between BE and CF. Here land is scarce and is used intensively. More and more workers are employed in order to have larger output. Thus the total product increases at a diminishing rate and the average and marginal product decline. This is the only stage in which production is feasible and profitable because in this stage the marginal productivity of labour, though positive, is diminishing but is non-negative. Hence it is not correct to say that the law of variable proportions is another name for the law of diminishing returns. In fact, the law of diminishing returns is only one phase of the law of variable proportions. The law of diminishing returns in this sense has been defined by Prof. Benham thus: "As the proportion of one factor in a combination of factors is increased, after a point, the average and marginal product of that factor will diminish."

Stage-III: Negative Marginal Returns:

Production cannot take place in stage III either. For in this stage, total product starts declining and the marginal product becomes negative. The employment of the 8th worker actually causes a decrease in total output from 60 to 56 units and makes the marginal product minus 4. In the figure, this stage starts from the dotted line CF where the MP curve is below the A‟-axis. Here the workers are too many in relation to the available land, making it absolutely impossible to cultivate it.

The Best Stage:

In stage I, when production takes place to the left of point E, the fixed factor is excess in relation to the variable factors which cannot be used optimally. To the right of point F, the variable input is used excessively in Stage III. Therefore, no producer will produce in this stage because the marginal production is negative.

Thus the first and third stages are of economic absurdity or economic nonsense. So production will always take place in the second stage in which total output of the firm

increases at a diminishing rate and MP and AP are the maximum, then they start decreasing and production is optimum. This is the optimum and best stage of production.

LAW OF RETURNS TO SCALE

In the long run, expansion of output can be achieved by variation in the use of all factors as all factors are variable. The laws of returns to scale refer to the effects of changes in the scale of production. In the long run, output can be increased by effecting a change in the use of all factors keeping the same proportion or by changes in different proportions.

Meaning

The degree of responsiveness of output to a proportionate change in the quantity of all inputs is called returns to scale. There are three possibilities via; (a) constant returns to scale, (b) increasing returns to scale and (c) decreasing returns to scale.

Constant Returns to Scale

In the case of constant returns to scale, when all factor of production are increased in a given proportion, the output would also increase in the same proportion. For example, if the quantity of labour and capital is increased by 10%, output also increases by 10%. If labour and capital are doubled, output also doubles. Similarly, if all inputs are reduced by a given proportion, output is reduced by the same proportion.

Increasing Returns to Scale

In the case of increasing returns to scale, when all factors are increased in a given proportion, output increases by a greater proportion. For example, if the amount of labour and capital is increased by 10%, output increases by more than 10%. If the quantity of labour and capital doubles, output more than doubles.

Decreasing Returns to Scale

In the case of decreasing returns to scale, output increases in a smaller proportion than the increase in all inputs, i.e., in this case as inputs are increased by a particular proportion, output increases less than proportionately. For example, if inputs are increased by 10% output increases by less than 10%. If inputs double, outputs will less than double.

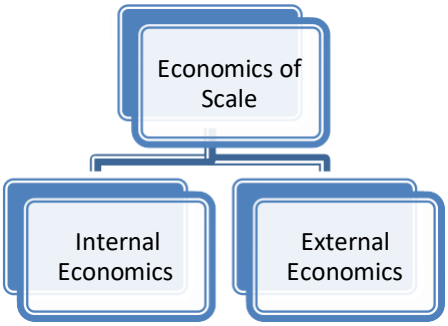
Economics and Diseconomies of Scale

Economics of Scale

A business firm expands its scale of production to earn profit. It derives many turn, help in lowering the cost of production and increasing its productive efficiency.

Such economics that occur to a firm in the course of expansion of its scale of operation by increasing all the factors or by increase in the number of firms in the industry are called as economics of scale.

The Economics of scale can be classified as under.



I) Internal Economics

They are economic advantages, which enable a firm to get proportionately large output than increments in factor inputs. Some of the internal Economics are as follows.

a) Specialization and Division of Labour

As scale of Production expands, higher degree of specialization and division of labour becomes possible. Under division of work, production of a commodity is split up into several processes. Each worker specializes in one particular process due to which the skill of each worker is improved.

b) Technical Economics

These economics arise from the greater efficiency of large size of plants and capital equipments, which the large firm can afford to employ superior, more specialized and automatic machines can be installed by them.

c) Production Economics

The large firm is able to utilize all its waste materials for the development of by product industry. Thus, it enjoys the economy of the use of by-product. For example, the waste left over after manufacturing sugar from the sugarcane can be use for producing paper by installing a plant for this purpose.

d) Managerial Economics

These economics are due to better and more elaborate management, which only the large firm can afford. In a large firm, the owner can concentrate on fundamental problems of policy-making and business expansion, delegating the routine jobs and details to highly qualified subordinates.

e) Marketing Economics

As the firm expands in its size, it is able to buy raw materials at cheaper rates as it buys regularly and in bulk quantities. It can secure concessions from railways and transport companies. It can also enjoy prompt delivery careful attention and considerate treatment from all intermediaries.

f) Financial Economics

The large firm with a large asset base and goodwill in the market is able to secure the necessary funds either as block capital or for meeting the working capital needs of the enterprise.

g) Risk and Survival Economics

Every firm has to face general and particular risks for its existence. While the former occur during general business depression due to insufficient demand, latter refers to market fluctuations for one product. Small firms cannot survive in the face of such risks and go into liquidation.

h) Economics of Employee welfare schemes

A large firm with adequate resources can provide employee welfare facilities for its managerial and technical staff, both within and outside the factory. These measures enhance the motivation, morale and commitment of the employees of the firm and its objectives. It leads to efficiency of the human capital and hence production.

II) External Economics

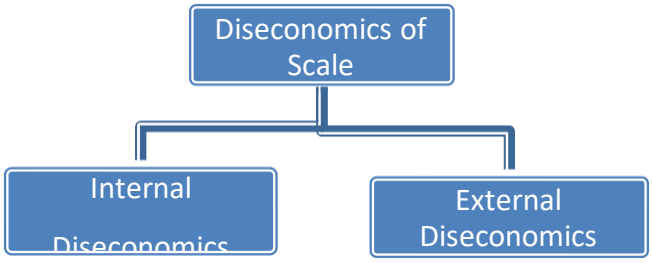
When many firms expand in a particular area, each member firm sources a number of economic advantages, which are known as external economics. Some of the external economics are as follows.

a) The availability of better transportation and communication at cheaper rates.
b) Provision of better and more adequate sources of power, water and electricity.
c) Growth and development of ancillary industries, making use of waste matter by giving it the shape of by-products.
d) Establishment of technical and engineering institutions ensuring continuous supply of skilled manpower.
e) Better housing, public health and recreational facilities.

Diseconomies of Scale

Economics of scale operate up to the point of optimum capacity. Beyond this point economics give place to Diseconomies‟ which is commonly termed as “Diseconomies of scale”.

It can be classified as under.



I) Internal Diseconomies

The following are some of the internal diseconomies.

a) Inefficiency of Management

When output exceeds the optimum level, the management problems increase and management efficiency declines.

b) Technical Diseconomies

All equipment has an optimum capacity at which it works most efficiently and economically. If production is increased beyond the optimum point, diseconomies arise.

c) Financial Diseconomies

A number of curbs are being imposed by the government, banks and the financial institutions on the large borrowers, which serve as restrain on large scale production.

d) Risk and Survival Diseconomies

Large firms are more exposed to the risks than the smaller ones due to the lack of liquidity. Even risks like strike, lock-out, lay off are more in case of large establishments.

e) Limited availability of Natural Resources

It also causes diminishing returns to scale. For example doubling of coal mining plants will not double the coal output due to limited availability of coal deposits.

II) External Diseconomies

Some of the external diseconomies are as follows:

a) Intense competition among the firms raises the Price of raw materials.
b) Scarcity of fuel, electricity, power, water, finance etc.

c) Management is exposed to Government restrictions.

d) Heavy pressure on the transport system causing frequent traffic jams.

e) Heavy expenditure on pollution control.

These are the various economics and diseconomies of scale.

COST OF PRODUCTION

In the ordinary language, the money expenses incurred by a firm in production of a commodity are called „cost of production". In the words of Hunt, "A firm"s production costs arise from the hire or purchase of productive resources at every stage of its operations."

A firm requires factors of production (land, labour, capital and organization) and other inputs (like raw materials, fuel, power etc) for producing a commodity. Thus, the expenses incurred for the production of certain units of output is called cost of production.

Cost Concepts

In economics, the term „cost" is used in a broader sense. It refers to the following types of costs.

1. Money Cost

Money cost refers to the amount spent to produce a commodity. It is also called as „nominal cost". It includes

(i) Rent on land;

(ii) Wages and salaries of labour;

(iii) Interest on capital invested and borrowed;

(iv) Profit for organization;

(v) Cost of raw materials; and

(vi) Expenses on power, light, advertisement, transportation, insurance charges and all types of taxes.

2. Real Cost

Real cost means the sacrifice, discomfort, toils and pain involved in supplying the factors of production by their owners. Adam Smith regarded pains and sacrifices of labour as real cost.

3. Opportunity cost (Alternative cost)

The opportunity cost of a commodity is the next best alternative commodity sacrificed in order to obtain that commodity. It is also called as „displacement cost". According to Ferguson, "The alternative or opportunity cost of producing one commodity X is the amount Y that must be sacrificed in order to use resources to produce X rather than Y."

4. Explicit cost

Explicit costs are the „paid-out costs". They are contractual money payments made to the factor owners for hiring or purchasing the service of factors inputs. It consists of

i) Rent on land;

ii) Wages and salaries for labour;

iii) Interest on capital borrowed;

iv) Payment to organizer;

v) Prices of raw and semi-finished materials; and

vi) Depreciation.

5. Implicit cost

Implicit costs are costs of self-owned and self-employed resources. They are the salary received by the owner-manager, rent of the building and interest on capital invested by him. They are not recorded in the firm"s account book. Implicit costs are also called as „implicit costs".

6. Social Costs

Social costs refer to the costs of producing a commodity to the society as a whole. It does not take into account money cost but something like cost which are borne by the society directly or indirectly. For example, when trees of a forest are cut down indiscriminately by a person, the society incurs social costs in the form of floods, soil erosion, loss of sanctuary for animals.

7. Primary Costs

Private costs refer to the costs incurred by a firm in producing a commodity. In other words, it is the money cost incurred by a firm for producing a commodity.

8. Economic Cost

The payments received by resource owners in order to ensure that they will continue to supply them are called „economic cost". It also included normal profit.

Marginal cost

Marginal cost is the expenses incurred for the last unit produced. It is the addition to total cost by producing one more unit of output. It is the difference between two total costs. In symbol,

$$\mathbf{MC = TC_{n+1} - TC_n}$$

MC = Marginal cost

TC = Total cost

n = Number of units produced.

Marginal cost can be found out by differentiating total cost function. Symbolically,

$$MC = \frac{dC}{dQ}$$

Where, dC = Change in total cost;

dQ = Change in output.

Average cost

Average cost is the cost per unit of output. It is arrived at by dividing total cost by total output. It can also be obtained by adding the average fixed cost (AFC), with the average variable cost (AVC). In symbol,

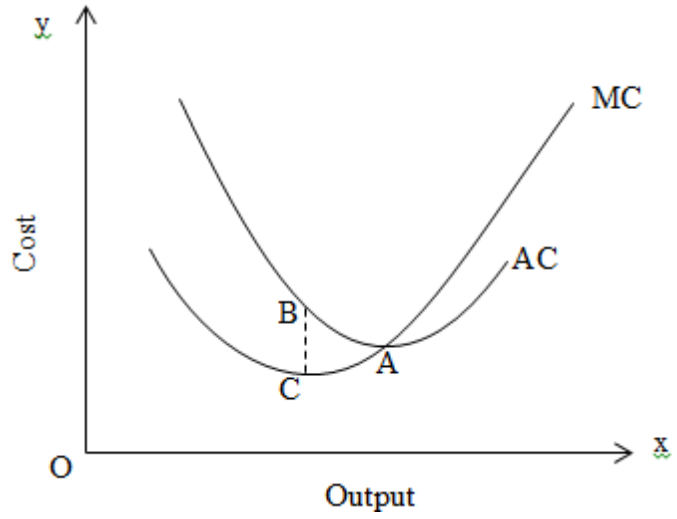
$$AC = \frac{TC}{Q} \quad \text{or } \mathbf{AC = AFC + AVC}$$

AC = Average cost

TC = Total cost

Q = Total output

Relationship between AC and MC



In this figure,

AC = Average cost curve

MC = Marginal cost curve

- When AC falls MC also falls and MC lies below AC.
- When AC is minimum AC = MC.
- When AC rises MC also rises and MC lies above AC.

Money cost is further subdivided into two. They are

(i) Fixed cost; and (ii) Variable cost.

Total cost (TC)

Total cost is the total expenses incurred for the production of the entire quantity of output. It is the sum of total fixed cost (TFC) and total variable cost (TVC). Symbolically,

TC = TFC + TVC

Fixed cost (FC)

Fixed cost remains constant for all units of output. In other words, cost which does not change with the change in output is called fixed cost. It includes rent and interest payments, depreciation charges, wages and salaries of permanent staff etc., fixed costs have to be incurred by a firm, even if it stops production temporarily. They exist even when output is zero. They are also called „overhead costs".

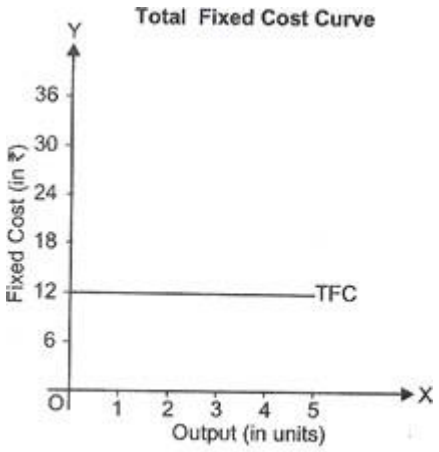


Fig. 6.1

In the figure, TFC is the total fixed cost curve. It is a horizontal parallel to the OX-axis. It shows that fixed cost remains unaltered even though output changes.

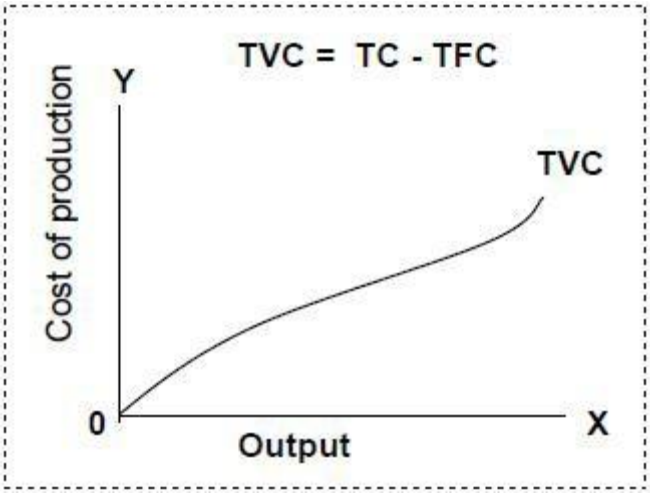
Variable Cost (VC)

Cost which varies with variation in output is called variable cost. Variable costs vary directly and sometimes proportionately with output. They are also called „prime cost". Variable costs include

(i) Costs of raw materials and

(ii) Costs of casual or daily labour etc.,

They are incurred only when the factory is at work.



In the figure, TVC is the total variable cost curve. It is going upward at a diminishing rate. It shows that total variable cost changes with changes in output.

Unit of output	TFC	TVC	TC
0	30	0	30
1	30	10	40
2	30	18	48
3	30	24	54
4	30	32	62

In the table, total fixed cost remains constant at Rs.30/-. But the total variable cost increases continuously at a diminishing rate. Total cost also increases continuously. It can be explained with help of the following figure.

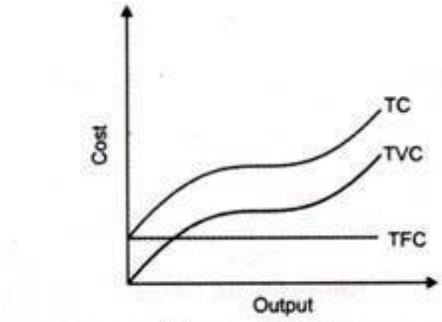


Figure-5: TC Curve

In the figure, TC is the total cost curve. Its slope indicates the positive relationship between output and total cost.

SHORT RUN COST CURVES

Short period is the period of time, which is so short that a firm cannot change some of its factors of production like plant, machinery, building etc. "A time period which is less than the minimum required to affect changes in factors of production is called as short period". In the short run, quantities of fixed factors cannot be varied in accordance with changes in output. If the firm wants to increase output in the short run, it can do so only with the help of variable factors, i.e., by using more labour, raw materials etc.

Short Run Average Costs

There are three short run costs. They are

(i) Average Fixed Cost (AFC)

(ii) Average Variable Cost (AVC)

(iii) Average Total Cost (ATC)

(i) Average Fixed Cost

Average fixed cost is per unit fixed cost of producing a commodity. It can be obtained by dividing the total fixed cost by the number of units produced.

$$AFC = \frac{TFC}{Q}$$

Where, AFC = Average fixed cost

TFC = Total fixed cost

Q = Quantity of output

For example, a firm is producing with total fixed cost of Rs.2000/-. When output is 100 units, the average fixed cost will be Rs.20/-. If the total output increases to 200 units, average fixed cost will be Rs.10/-. Since total fixed cost is a constant amount, average fixed cost will steadily fall as output increases. Therefore, the average fixed cost curve will slope downwards throughout its length.

(ii) Average Variable Cost

Average variable cost is the per unit variable cost of a commodity. It can be calculated by dividing the total variable cost by the number of units produced.

$$AVC = \frac{TVC}{Q}$$

Where, AVC = Average variable cost

TVC = Total variable cost

Q = Quantity of output

For example, if the total variable cost of producing 50 units of cycle is Rs.50,000/- and the average variable cost will be Rs.1,000/-/ AVC normally falls as output increases from zero to normal capacity output due to occurrence of increasing returns. But, beyond the normal capacity output, AVC will rise steeply because of the operation of the Law of Diminishing Returns. Therefore, the AC curve first falls, reaches a minimum and then rise again.

(iii) Average Total Cost

Average total cost is the sum of average fixed cost and average variable cost, i.e., ATC = AFC + AVC. IT can also be obtained by dividing the total cost (TFC+TVC) by the units of output produced (q).

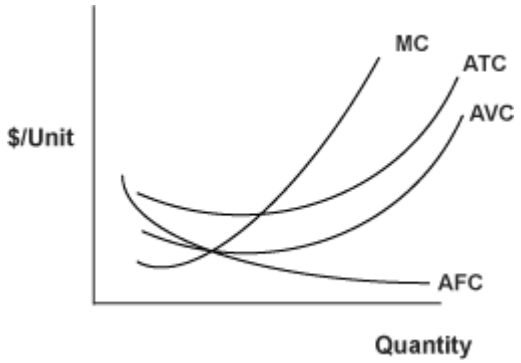
$$ATC = \frac{TC}{Q}$$

Where, ATC = Average total cost

TC = Total cost

Q = Quantity of output

In the beginning the ATC curve falls continuously since both AFC and AVC falls in the beginning. When AVC curve begins to rise, AFC curve still falls sharply and ATC curve continues to fall. This is because during this stage the fall in AFC is greater than the rise in AFC. Therefore, the ATC curve first falls, reaches its minimum and then rises. Thus, the average cost curve is „U" shaped.



In the figure, AFC is the average fixed cost curve. It slopes downward to the right because as output increases, the AFC diminishes. AVC is the average variable cost curve. It slopes downward first and thereafter rises slowly. It is because as output increases, variable

cost also increases. ATC is the average total cost curve. It first falls and finally rises because of the economies and diseconomies of large scale production. MC is the marginal cost curve.

Long run cost curves

Long run refers to the period during which the size and organization of the firm can be altered to meet changed conditions. The long run cost curves are also „U" shaped, but they will always e flatter than short run cost curves. The long run cost curve is obtained by drawing a line that touches a series of short run curves. So long run cost curves are called as „envelope curves".

In the figure given below, SAC_0, SAC_1, SAC_2, SAC_3 and SAC_4 are short run average cost curves. LAC is the long run average cost curve. It is drawn by joining the lowest points of the five short run cost curves.

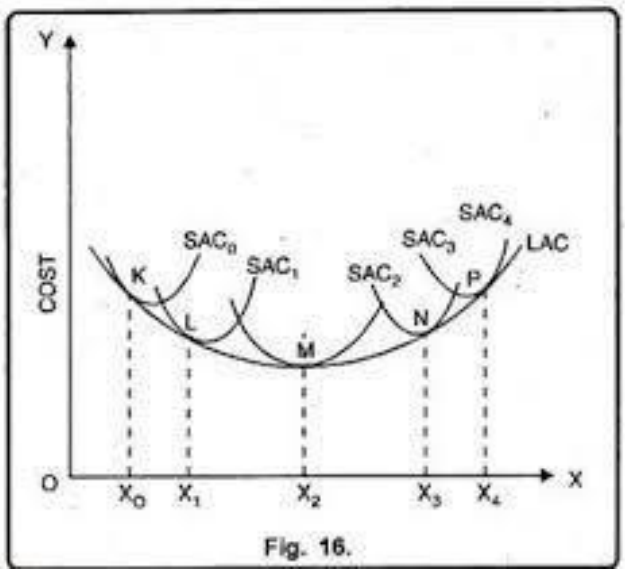


Fig. 16.

LAC flatter than SAC

The long run average cost curves is „U" – shaped, but it is flatter than the short run average cost curve. The LAC first declines slowly and then rises gradually after the minimum point is reached. The LAC is flatter than SAC due to the following reasons:

(i) First the LAC slopes downwards due to the availability of certain economics of scale like the economical use of factors and specialization.

(ii) After the minimum point of LAC is reached, the LAC may flatter because the economies and diseconomies balance each other.

(iii) The LAC begins to rise with further expansion of scale because of the diseconomies like difficulties of coordination, management, transport and labour problem etc.

OPTIMUM FIRM

„Optimum firm" refers to the ideal size of the firm. It is the firm, which produces optimum output with the optimum plant. Optimum output is called „least-cost output". Optimum plant is one, which produces maximum output at the minimum average cost of production. According to **E.A.G. Robinson**, "An optimum firm is the one which operates at the scale at which, in the existing conditions of techniques and organizing ability, has the lowest average cost of production when all those costs which must be covered in the long run are included". In short, optimum firm is one which produces the maximum output at minimum cost. The following factors determine the optimum size of the firm:

(i) Technical factors;

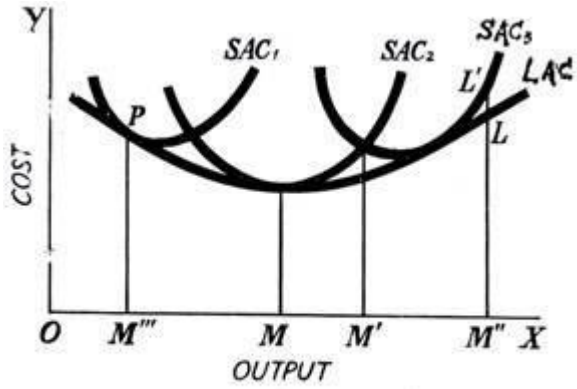
(ii) Managerial factors;

(iii) Financial factors;

(iv) Marketing factors; and

(v) Risk factors.

It can be explained with the help of the following figure:



LAC Curve : An Envelope
Fig. 23.6

Where, LAC = Long run average cost curve

SAC_1, SAC_2, and SAC_3 = Short run average cost curves

In the figure, the short run cost curves of three firms are given. Firm with SAC_2, is the optimum firm. It is because it produces the maximum output OM with minimum average cost both in the short run and long run. It is the output produced with least cost combination.

In the case of firm with SAC_1, the output is less and average cost is high. On the other hand, firm with SAC_3, output is more but average cost is high. Thus, firm with SAC_2 is the optimum firm.

Classical and Modern approaches to the law of variable Proportions

The law of variable proportions is one of the most important, fundamental and unchallenged law of production. This law is also termed as return to a factor, as under it one factor is varied, while keeping all other factors fixed

With these variations in the quantity of one factor, keeping the quantity of other factors constant, the ratio of employment of the variable factor to that of the fixed factor keeps on changing. As we study the effects of variations in factor proportions under this law, this is called the law of variable proportions. There are two important approaches available to study this law:

Classical Approach:

The law of variable proportions is the new name for the famous 'Law of Diminishing Returns' of classical economists like Adam Smith, Ricardo, Malthus, etc. But, the real credit goes to Marshall for providing a logical and scientific basis of the law, which was confined to agriculture only. He defines the law as follows:

"An increase in the capital and labour applied in the cultivation of land causes in general a less than proportionate increase in the amount of product raised unless it happens to coincide with an improvement in the arts of agriculture"

Limitations:

Law of diminishing returns assumes static technology. That is why it is more often applicable to agriculture, where there is very little scope for improvement in the technology. However, improvements in the art of agriculture cannot be perfectly assumed away. This law is subject to a number of limitations.

(a)Improvements in Methods of Cultivation:

The law assumes away any improvement in the arts of agriculture. Marshall has clarified it by inserting the phrase "… unless it happens to coincide with an improvement in the arts of agriculture" in his definition of this law. If this assumption is relaxed, i.e., scientific or improved methods of cultivation (use of better seeds, better agriculture implements, etc.) are adopted, the returns are bound to increase and the law will no longer hold true.

However, there is some limit to the improvement in the methods of production. Hence, sooner or later, the law of diminishing returns is bound to operate. Similarly, if a virgin soil is brought under cultivation, the additional return from each successive dose of labour and capital may cause increasing returns initially.

(b) Variable Factors Working with Fixed Factors:

This law will not operate, if it is not possible to keep some factor fixed (say, land).

(c) Hetrogenous Variable Factors:

All the units of variable factors are assumed to be homogenous or identical. In other words, diminishing marginal returns are not due to the use of inferior units of the variable factor. However, in real world various factor units are hetrogenous.

(d) Inadequate Units of Variable Factor:

The operation of the law of diminishing returns is also held up for sometimes, if the units of variable factors, i.e., labour and capital applied to a certain fixed piece of land is insufficient to cultivate to the full capacity of that piece of land.

Appraisal:

Alfred Marshall gave a fairly satisfactory explanation of the law of diminishing returns. He discussed the law in relation to agriculture. Applicability of the law to agriculture can be advocated on several grounds:

(i) Overdependence of agriculture on unpredictable natural factors like rainfall, climate and weather conditions, particularly in less developed countries.

(ii) Little scope for the use of implements, machines and other improved methods of production.

(iii) Seasonal unemployment in agriculture reduces the productivity of agriculture labour.

(iv) Effective supervision is not possible due to scattered agricultural operations over a vast area and over a number of months.

(v) Quantity of land remains fixed.

(vi) Last, but the most important reason is that fertility of the soil gradually falls. So, the use of additional units of labour and capital will result in less than proportionate increase in output.

The law is equally applicable to the mines, forests and fisheries, which get exhausted as more and more are taken out of them. Hence, same quantities of labour and capital produce or extract lesser and lesser quantity of final product.

For instance, in the beginning, coal is found near the surface of earth. Gradually, one has to go deeper and deeper into the bowels of the earth to get the same amount of coal and fish in the two cases respectively.

Marshall's law of diminishing returns applies not only to agriculture (for which it was originally developed), but also to extractive industries and to other industries, where land or other natural resources are important.

However, there is little scope of applicability of this law for most of the other manufacturing industries, which enjoy the advantages of large scale production through specialisation by machinery, men and management.

But, this is possible only temporarily. Ultimately, the tendency to diminishing returns is bound to appear. In brief, the law has been found to be applicable in agricultural production more quickly than in industrial production, because in the former a natural factor (i.e., land) plays a predominant role, while in the latter, manmade factors play the major role.

2.Modern Approach:

Law of diminishing returns enunciated by the classical and neo-classical economists like Marshall was peculiar to agriculture. Modern economists have given universal law which applies to all lines of production and in all sectors of the economy-agriculture, manufacturing and service sector.

This law again assumes presence of some fixed factor (not necessarily land) and one or more variable factors (say labour, capital). Moreover, modern economists believe that diminishing, constant and increasing returns are not three different laws, but they are three phases of one general law of variable proportions.

The law of variable proportions states that as we use more and more units of some factors of production to work with one or more fixed factors, the total product will increase at an increasing rate, then at a constant rate and finally at a diminishing rate. In other words, the marginal, average and total product will rise up to a certain stage and then will decline. The law has been stated by various economists in the following words:

"As equal increments of one input are added; the inputs of other productive service being held constant, beyond a certain point the resulting increments of product will decrease, i.e., the marginal products will diminish".

"As the proportion of one factor in a combination of factors is increased, after a point first the marginal and then the average product of that factor will diminish".

"An increase in some inputs relative to other fixed inputs will, in a given state of technology, cause output to increase; but after a point the extra output resulting from the same additions of extra inputs will become less and less".

K.E. Boulding avoids the use of loose expression, 'diminishing returns', which can be variously interpreted. He rather names the law as 'The Law of Eventually Diminishing Marginal Physical Productivity' and defines it; "As we increase the quantity of any one input which is combined with a fixed quantity of the other inputs the marginal physical productivity of the variable input must eventually decline".

The views of Alfred Marshall (stated under classical approach), GStigler, F. Benham, P.A. Samuelson and K.E. Boulding on this law are fundamentally the same. The only difference is that whereas according to Benham, the law operates when both MP and AP begin to diminish. But, this is not so with other economists. According to them, the law must be stated in terms of marginal product rather than average product as the former is more important.

It is obvious from the above definitions of the law of variable proportions (or the law of diminishing returns) that it refers to the behaviour of output as the quantity of one factor is increased, keeping the quantity of other factors fixed. It further states that the marginal product and average product will decline eventually, as more and more quantities of variable factor are combined with (at least) one constant factor.

Law of variable proportions is based upon the following assumptions:

(i) The state of technology is given and remains constant. If there is improvement in technology, then marginal and average products may rise instead of diminishing.

(ii) Quantity of at least one factor input is constant and one factor input is variable. It is only in this way that the firm can alter the factor proportions and know its effects on output.

(iii) Effect of changing units of a variable factor on output can be estimated correctly.

(iv) The law is based upon the possibility of varying the proportions in which the various factors can be combined to produce a product. The law does not apply in those situations, where the factors must be used in fixed proportions to yield a product.

In such situations, increase in one factor would not lead to any increase in output, i.e., the marginal product of the factor will be zero and not diminishing. For example, two drivers cannot drive the same vehicle at the same time. However, such situations are very uncommon.

(v) All the units of variable factor are homogenous, i.e., equal in efficiency.

(vi) Input prices remain unchanged,

(viii) Output is measured in physical units.

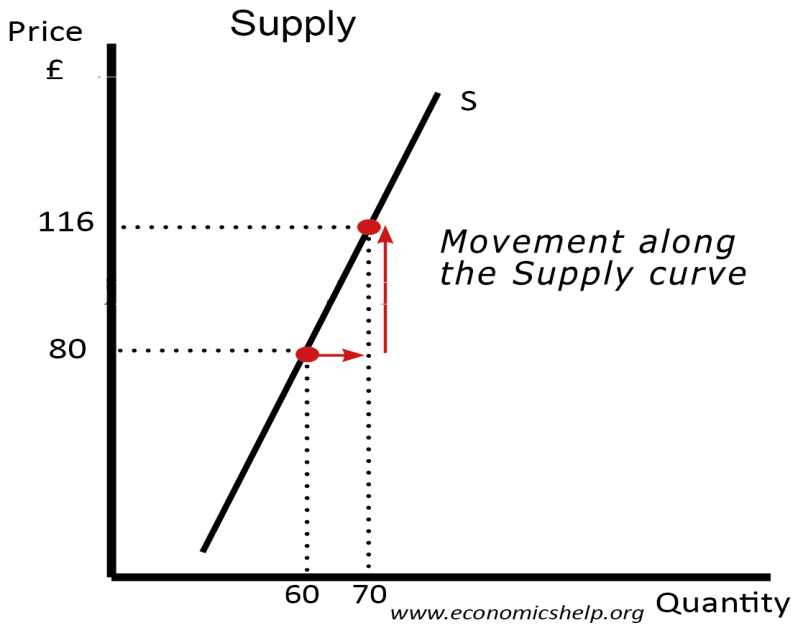
Unit – VI

SUPPLY / FACTORS AFFECTING SUPPLY

Supply refers to the quantity of a good that the producer plans to sell in the market. Supply will be determined by factors such as price, the number of suppliers, the state of technology, government subsidies, weather conditions and the availability of workers to produce the good.

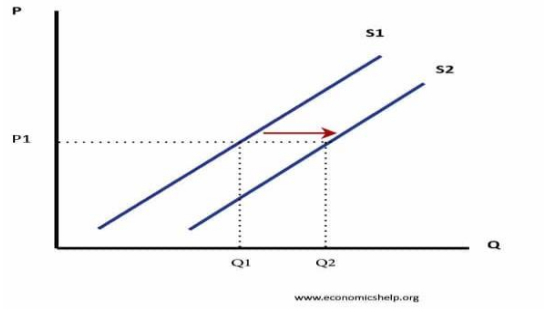
Movement along the supply curve

- As price increases firms have an incentive to supply more because they get extra revenue (income) from selling the goods.
- If price changes, there is a movement along the supply curve, e.g. a higher price causes a higher amount to be supplied.



An increase in the price from 80 to 116 causes an increase in quantity supplied from 60 to 70.

Shifts in the Supply curve

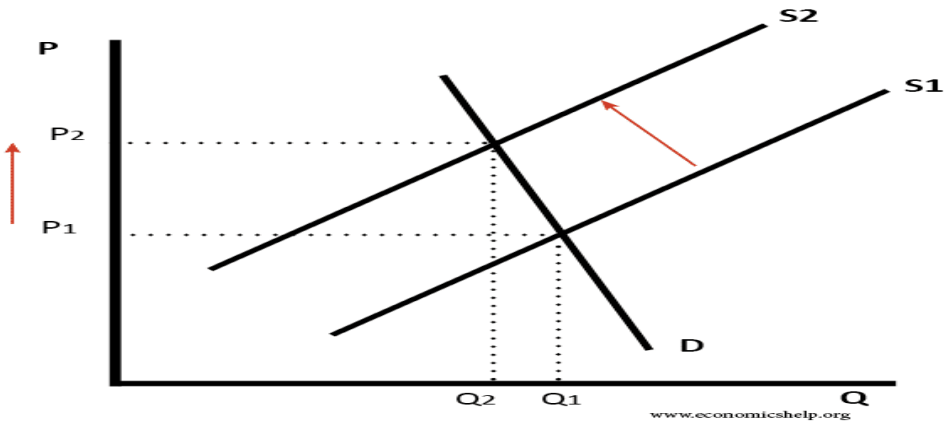


This occurs when firms supply more goods – even at the same price. For example, a new machine which enables more of the good to be produced for the same cost.

Factors affecting the supply curve

1. A decrease in costs of production. This means business can supply more at each price. Lower costs could be due to lower wages, lower raw material costs
2. More firms. An increase in the number of producers will cause an increase in supply.
3. Investment in capacity. Expansion in the capacity of existing firms, e.g. building a new factory
4. The profitability of alternative products. If a farmer sees the price of biofeuls increase, he may switch to growing crops for biofuels on all his fields and this will lead to a fall in the supply of food, such as wheat.
5. Related supply. If there is an increase in the supply of beef (from cows) then there will also be an increase in the supply of leather.
6. Weather. Climatic conditions are very important for agricultural products
7. Productivity of workers. If workers become more motivated and work hard, then there will be significant increase in output and supply.
8. Technological improvements. Improvements in technology, e.g. computers or automation, reducing firms costs.
9. Lower taxes. Lower direct taxes (e.g. tobacco tax, VAT) reduce the cost of goods.
10. Government subsidies. Increase in government subsidies will also reduce the cost of goods, e.g. train subsidies reduce the price of train tickets.
11. Objectives of firms. If firms are profit maximisers and collude with other firms, we may see a fall in supply as they try to maximise profits. However, if they switch to targetting sales or revenue maximisation, then we will see an increase in supply.

Shift in supply to the left

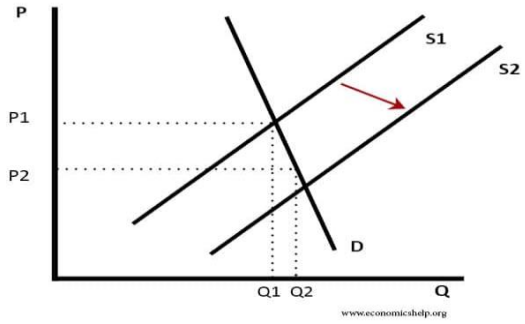


In this case, there is a fall in supply. The supply curve shifts to the left. This causes a higher price. The supply can shift to the left because

- Fewer firms in the market
- Bad weather (agriculture)

- Higher taxes
- Decline in productivity (workers work less hard.)

Factors that cause a shift in supply to the right



1. More firms
2. Improved technology
3. Lower tax
4. Higher government subsidies
5. More firms enter the market

Law of supply

The law of supply is the microeconomic law that states that, all other factors being equal, as the price of a good or service increases, the quantity of goods or services that suppliers offer will increase, and vice versa. The law of supply says that as the price of an item goes up, suppliers will attempt to maximize their profits by increasing the quantity offered for sale.

The elasticity of supply establishes a quantitative relationship between the supply of a commodity and it's price. Hence, we can express the numeral change in supply with the change in the price of a commodity using the concept of elasticity. Note that elasticity can also be calculated with respect to the other determinants of supply.

However, the major factor controlling the supply of a commodity is its price. Therefore, we generally talk about the price elasticity of supply. The price elasticity of supply is the ratio of the percentage change in the price to the percentage change in quantity supplied of a commodity.

$$\mathbf{Es= [(\Delta q/q)\times 100] \div [(\Delta p/p)\times 100] = (\Delta q/q) \div (\Delta p/p)}$$

Δq= The change in quantity supplied

q= The quantity supplied

Δp= The change in price

p= The price

Elasticity from a Supply Curve

Along with the method mentioned above, there are two more ways to calculate the price elasticity of supply, both of which make use of the supply curve. We can either calculate the

elasticity at a specific point on the supply curve, known as point elasticity or between two prices, known as arc-elasticity.

The formula for calculating the point elasticity of supply is:

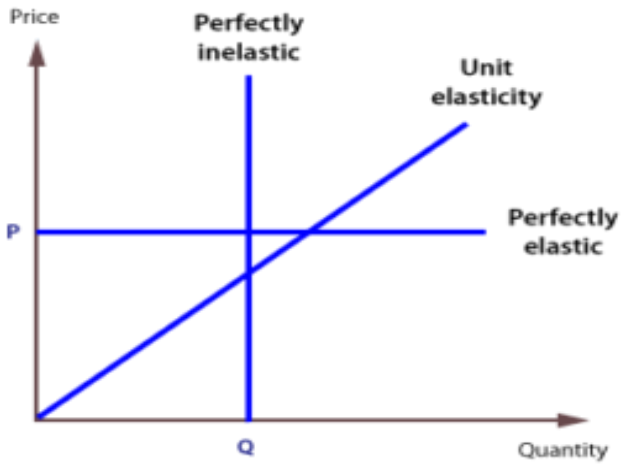
$$Es = (dq/dp) \times (p/q)$$

Here dq/dp is the slope of the supply curve.

The formula for calculating the arc-elasticity of supply is:

$$Es = [(q1 - q2)/(q1 + q2)] \times [(p1 + p2)/(p1 - p2)]$$

Types of Elasticity of Supply



1. Perfectly Inelastic Supply

A service or commodity has a perfectly inelastic supply if a given quantity of it can be supplied whatever might be the price. The elasticity of supply for such a service or commodity is zero. A perfectly inelastic supply curve is a straight line parallel to the Y-axis. This is representative of the fact that the supply remains the same irrespective of the price.

The supply of exclusive items, like the painting of Mona Lisa, falls into this category. Whatever might be the price on offer, there is no way we can increase its supply

2. Relatively Less-Elastic Supply

When the change in supply is relatively less when compared to the change in price, we say that the commodity has a relatively-less elastic supply. In such a case, the price elasticity of supply assumes a value less than 1.

3. Relatively Greater-Elastic Supply

When the change in supply is relatively more when compared to the change in price, we say that the commodity has a relatively greater-elastic supply. In such a case, the price elasticity of supply assumes a value greater than 1.

4. Unitary Elastic

For a commodity with a unit elasticity of supply, the change in quantity supplied of a commodity is exactly equal to the change in its price. In other words, the change in both price and supply of the commodity are proportionately equal to each other. To point out, the elasticity of supply in such a case is equal to one. Further, a unitary elastic supply curve passes through the origin.

5. Perfectly Elastic supply

A commodity with a perfectly elastic supply has an infinite elasticity. In such a case the supply becomes zero with even a slight fall in the price and becomes infinite with a slight rise in price. This is indicative of the fact that the suppliers of such a commodity are willing to supply any quantity of the commodity at a higher price. A perfectly elastic supply curve is a straight line parallel to the X-axis.

Cost of Production

Cost of production refers to the total cost incurred by a business to produce a specific quantity of a product or offer a service. Production costs may include things such as labor, raw materials, or consumable supplies. In economics, the cost of production is defined as the expenditures incurred to obtain the factors of production such as labor, land, and capital that are needed in the production process of a product.

For example, the production costs for a motor vehicle tire may include expenses such as rubber, labor needed to produce the product, and various manufacturing supplies. In the service industry, the costs of production may entail the material costs of delivering the service, as well as the labor costs paid to employees tasked with providing the service.

Concept of Cost

Cost analysis is all about the study of the behavior of cost with respect to various production criteria like the scale of operations, prices of the factors of production, size of output, etc. It is all about the financial aspects of production. In order to understand the cost function well, in this article, we will look at various cost concepts.

The Nature of Costs:

One crucial distinction in the analysis of costs is between explicit and implicit costs. Explicit Costs refer to the actual expenditures of the firm to hire, rent orpurchase the input it requires in production. These include the wages to hire labour, the rental price of capital, equipment and buildings and the purchase prices of raw materials and semi finished products. These are the recorded expenditure during the process of production. They are thus also known as accounting cost or money cost, as these are actual monetary expenditures incurred by the firm.

An economist however is not satisfied with these explicit costs only. In the economic sense there are certain costs which are implicit in nature. This refers to the value of the inputs owned and used by the firm in its own production activity. Even though the firm does not incur any actual expenditure to use these inputs, they are not free since firm can sell them or rent them out to other firms. The amount for which the firm could sell or rent out these owned inputs to other firms represents a cost of production of the firms owning and using them. Implicit costs include the highest salary that the entrepreneur can earn for him, if working for other firms and thehighest

return the firm could receive from investing its capital in alternatives uses or renting its land and buildings to the highest bidder rather than using them itself. In general, following are the implicit costs, which should be included in the total cost, but go unrecorded in the account of the firm.

1. Wages of labour rendered by the entrepreneur himself.

2. Interest on capital supplied by the entrepreneurs.

3. Rent of land and premises belonging to the entrepreneurs and used in the production.

4. Normal profit of entrepreneur, compensation for being the ultimate risk taker in the firm.

These items are valued at current market rates for estimating the implicit cost. The distinction between explicit and implicit costs is important in analyzing the concept of profit. In the accounting sense, profit is calculated as the residual of total sales receipts minus explicit costs. In economic sense, however normal profit is included in total cost of production, which consists of explicit and implicit costs taken together.

Economic Cost = Accounting cost (Explicit Costs) + Implicit Cost.

Opportunity Cost:

To calculate the market value of implicit cost the concept of opportunity cost is used. Now we elaborate the concept. The opportunity cost of a factor of production is the reward (or value) that factor could have earned in the next best alternative occupation. In fact, a cost is a forgone opportunity; the cost of engaging in an activity is the totality of all the opportunities that the activity requires you to forgo. To avoid double counting only the best alternative is considered as opportunity cost.

Accounting opportunity costs are important for financial reporting by the firm and for tax purposes. For managerial decision making purposes (with which we are primarily interested in economics) opportunity or economic costs is relevant cost concept. With an example of inventory valuation will clarify the distinction. Suppose, a firm purchased a raw material for Rs.100/- but its price subsequently rose to Rs.150/-. The accountant would continue to report the cost of the raw material at its original price of Rs.100/-. The economist however, would value the raw material at its current or replacement value. Failure to do so might lead to the wrong managerial decision. This would occur, if the firm decides to continue the production using the raw material, while more beneficial out come would have been to stop output and sell the raw material booking the profit at price Rs.150/-In the same manner after depreciation accountant could take the value of amachine at zero but economist would have to take its resale value to calculate the true worth.

In discussing production cost, we must also distinguish between marginal cost and incremental cost. Marginal cost refers to the change in total cost for a unit change in output. For example, it total cost is Rs.140/- to produce 10 units of output and Rs.1501- to product II units of output, the marginal cost of 11th. Unit is Rs.10. Incremental cost on the other hand is a broader concept and refers to the change in total cost from implementing a particular management decision, such as the introduction of a new product line, the undertaking of a new advertising campaign or the production of a previously purchased components. The costs that are not effected by the decision are irrelevant and are called sunk cost. In other words, sunk costs are not altered by the change in business activity.

Short Run and Long Run Costs:

Economist usually distinguish between short run and long run costs on the basis of functional or operational time period in production activity. The short run costs are operating costs associated with the change in output. In the short run, the production function contains a set of fixed factor input and a set of variable inputs. Short run costs vary in relation to the variation in the variable input component only.

The long run costs are the operating costs associated with the changing scale of output and the alteration in the size of plant. In the long run production function all thefactor inputs are variable. Their costs are the long run costs.

Behaviour of Costs in the Short-run :

In this section we distinguish between fixed and variable costs and derive the firm's total and per unit cost functions.

Short Run Total and Per-unit Cost function:

As already defined short-run is the time period during which some of the firm's inputs are fixed (i.e. cannot be readily changed, except perhaps at very great expense). The total obligations of the firm per time period for all fixed inputs are called total fixed deposits (TFC). These include interest payment, rental expenditures, property taxes and those salaries (such as for top management) that are fixed by contract and must be paid over the life of the contract whether the firm produces or not.

Total variable costs TYC) : ON the other hand, are the total obligations of the firm per time period for all the variable inputs that the firm use. Variable inputs are those that the firm can change easily and on short notice. Payment for raw materials, depreciation associated with the use of the plant and equipment; most of the labour costs, excise duties are included invariable costs.

Total costs (TC) equal total fixed costs (TFC) plus total variable costs (TVC).

That is TC = TFC + TYC.

Within the limits imposed by the given plant and equipment, the firm can vary its out-put in the short run by varying the quantity used of the variable inputs. This gives rise to the TFC, TYC and TC functions of the firm. In defining cost functions, all inputs are valued at their opportunity cost which includes both explicit and implicit cost. Input prices are assumed to remain constant regardless of the quantity demanded of each input by the firm.

From the total fixed, total variable and total cost function, we can derive the corresponding per unit cost function of the firm. Average fixed cost (AFC) equals total fixed costs (TFC) divided by the level of output (Q). Average variable cost (A YC) equals total variable costs (TVC) divided by output. Average total cost (ATC) equal total cost (TC) divided by output. Finally marginal cost (MC) is the change in total costs or change in total variable cost (TVC) per unit change in output.

AFC TFC/Q

AYC TVC/Q

TC TC/Q = AFC +AVC

MC DTC / DQ = DTVC / DQ

Behaviour of total Costs :

1. TFC remain constant at all level of output it is unchanged even when the output is nil. Thus TFC is independent of output.

2. TVC varies with the output. it is nil when there is no output. Variable costs are thus direct costs of the output

3 TVC does not change in the same proportion. Initially it is increasing at a decreasing rate, but after a point it increases at an increasing rate. This is due of the law of variable proportion.

4. TC varies in the same proportion as the TVC. In other words, the change in total cost is entirely, due to changes in the total variable costs. In fact the distance between TC and TVC is the TFC.

TFG, TVC and TC Curves

Total cost curves are derived by plotting the total cost schedule graphically. A careful observation of fig. 1 reveals the following important characteristics of cost behaviour.

1. The curve TFC is the curve of total fixed costs. Denoting constant characteristics of fixed cost at all level of output, TFC is a straight horizontal line, parallel to the X-axis.

2. The curve TVC represent total variable cost. It reflect the typical behaviour of total variable cost. It initially rises gradually but eventually becomes steeper, denoting a sharp rise in total variable costs.

3. The TC curve represents total cost. It is derived by vertically adding up TVC and TFC curves. Obviously shape of the TVC and TC are identical. The only difference between two is of distance that is total fixed cost.

Short-run per Unit Cost :

From the cost schedule given in table 1, it is clear that costs per unit are derived from the total costs. It is obvious that the firm will have four short period categories of unit costs (I) Average fixed Cost (AFC) (II) Average Variable Cost (A VC) (III) Average Total Cost (A TC) and (IV) Marginal Cost (MC).

Economists, generalize the following relationship with regard to the unit cost data.

1. AFC decreases as output increases. Since AFC = TFC/Q, it is purely a mathematical outcome that with numerator remaining unchanged, the increasing denominator causes a diminishing product:

2. AVC first decreases and them increase as the output increases.

3. Since ATC is the sum of AFC and AVC, it will decrease in the beginning as both component decreases initially. After a point AVC start increasing and pulls up the ATC along with it, out weighing the influence of ever decreasing AFC.

4. Marginal Cost also decreases initially but increases ultimately with the increase in output.

Marginal cost is the rate of change in total costs when output is increased by one unit. In a geometrical sense, marginal cost at any output is the slope of the total cost curve at the corresponding point. In the short run, the marginal cost is independent of fixed cost and is directly related to the variable cost. Hence the MC curve can also be derived from TVC curve. As a matter of fact, AVC curve and MC curve are the reflection and the consequence of the law of variable proportion operating in the short run. As shown in the fig-2 both the curves are U shaped, the explanation of which is as follows. With labour as the only variable input, TVC for any output level (Q) equals the wage rate (W, assumed to be fixed) times the quantity of labour (L) used. Thus

AVC = TVC/Q = W.L./Q. W/Q/L (Q/L = APL) W/APL

As explained in the previous chapter, Average product of labour usually rises first, reaches the maximum and then falls, it follows that AVC curve first falls, reaches a minimum and then rises. Thus AVC is exactly inverse of APL curve whereas MC curve is exactly the reverse of, MP curve. In the last since the C curve is U shaped, the ATC curve is also U shaped. The ATC curve continues to fall after the A VC curve begins to be as long as the decline in AFC exceeds the rise in AVC. The U shape of MC curve can similarly be explained as follows:

MC = DTVC / AQ = - D (WL) / AQ

Since W is constant

W(DL) / DQ = W/DQ/DL

As DQ/DL = MPL

= W/MPL

Since the Marginal product of labour (MPL) first rises, reaches a maximum and then falls, it follows that the MC curve first falls reaches a minimum and then rises. Obviously, MC curve is exactly the reverse of MPL curve.

Relationship between Marginal Cost and Average Cost:

There is a unique relationship between AC (ATC as well AVC) and MC that is described as below:

1. When AC is minimum, MC is equal to AC. Thus MC intersect AC at its lowest Point.

2. When AC is falling, MC is always below AC. In fact, it is the MC that pulls down AC along with its. The point to note here is that MC may be rising, but will remain below AC.

3. When AC is rising, MC must be above AC.

Unit – V

PRODUCT PRICING

Price of a product is determined by demand and supply forces in the market. It is also determined by considering the cost and revenue conditions. To study product pricing, one should have a thorough knowledge about different markets and their features. This chapter deals with product pricing under different market situations.

In the ordinary parlance, market is considered as a place where goods are bought and sold. But, in economics, the term market refers to the whole of region in which buyers and sellers of a commodity are in competition with one another.

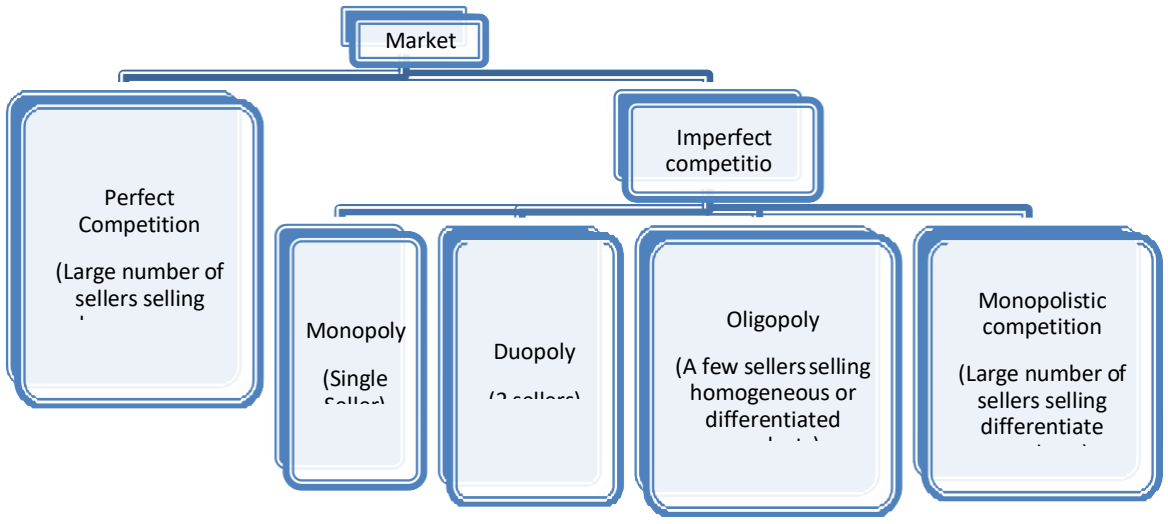
Forms of Markets

Markets may be classified on the basis of two important factors. They are

(i) Competition; and

(ii) Time.

On the basis of degree of competition markets may be classified into two – perfect competition and imperfect competition. These markets have been distinguished from one another on the basis of (i) number of buyers and sellers; (ii) nature of the commodity sold; (iii) entry or exit of firms (iv) knowledge about prevailing price and cost etc. This has been depicted in the following flow-chart.



PERFECT COMPETITION

Competition is an important feature of a perfect market. There exists competition between buyers and buyers for buying a product and sellers for selling a product. According to Joan Robinson, "Perfect competition prevails, when the demand for the output is perfectly elastic". Then, there will be uniform price and the revenue curve will be a horizontal straight line parallel to OX-axis.

Conditions (features)

The following are the features of perfect competition.

1. Large number of buyers and sellers
2. Homogeneous product
3. Free entry or exit.
4. Perfect knowledge.
5. Free mobility of factors.
6. Absence of transport cost.
7. Uniform price.

1. Large number of buyers and sellers

There are large number of buyers and seller for a product. So a single buyer or seller cannot influence the price.

2. Homogeneous product

The product sold by all the sellers should be homogeneous in all respect.

3. Free entry or exit

There should be complete freedom for the entry of new firms or exit of the existing firms from the industry.

4. Perfect Knowledge

The buyers and sellers should have clear knowledge about the market.

5. Free mobility of factors

There should be no restrictions on the movement of factors of production. It is essential in order to enable the sellers (firms) to adjust their supply to demand.

6. Absence of transport cost

There should be no transport cost for the movement of goods from one place to another.

7. Uniform price

All the units of a product should be sold at the same price. This condition makes the demand curve (Revenue curve) as a perfectly elastic one. (horizontal straight line parallel to OX-axis)

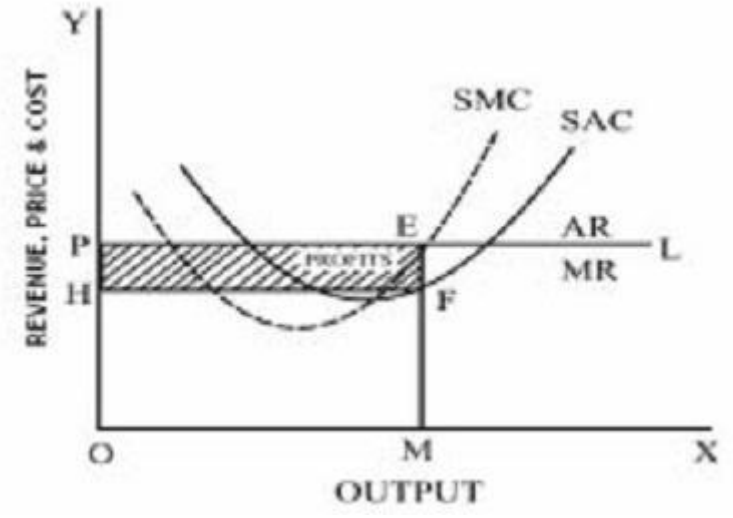
Short run equilibrium, price and output determination under perfect competition

1. Since a firm in the perfectly competitive market is a price-taker, it has to adjust its level f output to maximize its profit. The aim of any producer is to maximize his profit.
2. The short run is a period in which the number and land size of the firms are fixed. In this period, the firm can produce more only by increasing the variable inputs.
3. As the entry of new firms or exit of the existing firms are not possible in the short-run, the firm in the perfectly competitive market can either earn super-normal profit or normal profit or incur loss in the short period.

Super-normal Profit

When the average revenue of the firm is greater than its average cost, the firm is earning super-normal profit.

Short-run equilibrium with super-normal profits



In above figure, output is measured along the x-axis and price, revenue and cost along the y-axis. OP is the prevailing price in the market. PL is the demand curve or average and the marginal revenue curve. SAC and SMC are the short run average and marginal cost curves. The firm is in equilibrium at point „E" where MR = MC and MC curve cuts MR curve from below at the point of equilibrium. Therefore the firm will be producing OM level of output. At the OM level of output ME is the AR and MF is the average cost. The profit per unit of output is EF. The total profits earned by the firm will be equal of EF multiplied by OM or HP. Thus the total profits will be equal to the area HFEP. HFEP is the supernormal profits earned by the firms.

Long run equilibrium, price and output determination

In the long run, all factors are variable. The firms can increase their output by increasing the number and plant size of the firms. Moreover, new firms can enter the industry and the existing firms can leave the industry. As a result, all the existing firms will earn only normal profit in the long run.

If the existing firms earn supernormal profit, the new firms will enter the industry to compete with the existing firms. As a result, the input produced will increase. When the total output increases, the demand for factors of production will increase leading to increase in prices of the factors. This will result in increase in average cost.

On the other side, when the output produced increases, the supply of the product increases. The demand remaining the same, when the supply of the product increases, the price of the product comes down. Hence the average revenue will come down. A fall in average revenue and the rise in average cost will continue till both become equal. (AR=AC). Thus, all the perfectly competitive firms will earn normal profit in the long run.

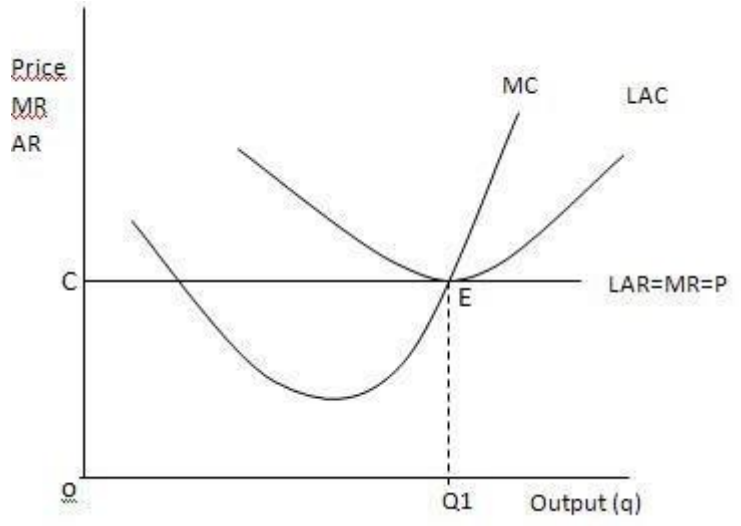


Figure represents long run equilibrium of firm under perfect competition. The firm is in equilibrium at point E where LMC=MR=AR=LAC=P. The long run equilibrium output is OQ1. The firm is earning must the normal profit. The equilibrium price is OC. If the price rises above OC, the firm will earn abnormal profit, which will attract new firms into the industry. If the price is less than OC, there will be loss and the tendency will be to exit. So in the long run equilibrium, OC will be the price and marginal cost will be equal to average cost and average revenue. Thus the firm in the long run will earn only normal profit. Competitive firms are in equilibrium at the minimum point of LAC curve. Operating at the minimum point of LAC curve signifies that the firm is of optimum size .

Imperfect Competition

Monopoly

Monopoly is a market structure in which there is a single seller, there are no close substitutes for the commodity it produces and there are barriers to entry.

Characteristics of monopoly

1. **Single Seller:** There is only one seller; he can control the price or supply of his product. But he cannot control demand for the product, as there are many buyers.
2. **No close substitutes:** There are no close substitutes for the product. The buyers have no alternatives or choice. Either they have to buy the product or go without it.
3. **Price:** The monopolist has control over the supply so as to increase the price. Sometimes he may adopt price discrimination. He may fix different prices for different sets of consumers. A monopolist can either fix the price or quantity of output; but he cannot do both, at the same time.
4. **No Entry:** there is no freedom to other producers to enter the market as the monopolist is enjoying monopoly power. There are strong barriers for new firms to enter. There are legal, technological, economic and natural obstacles, which may block the entry of new producers.
5. **Firm and Industry:** Under monopoly, there is no difference between a firm and an industry. As there is only one firm, that single firm constitutes the whole industry.

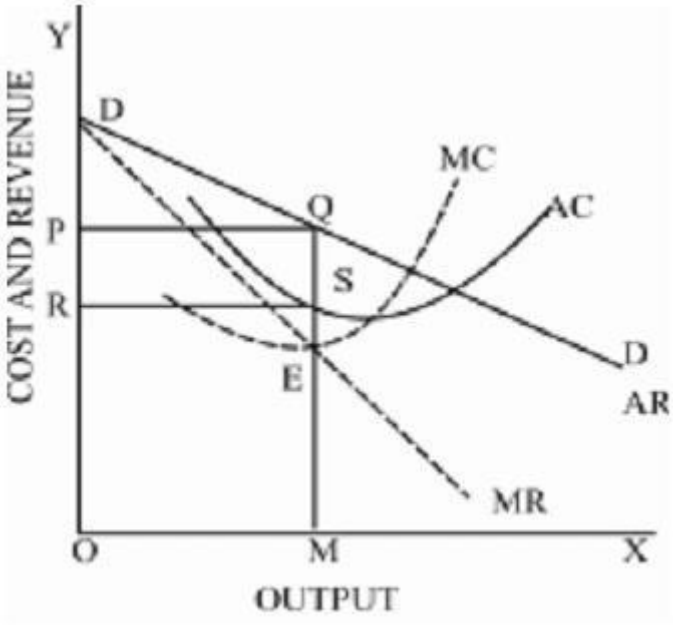
Price and Output Determination

A monopolist like a perfectly competitive firm tries to maximize his profits. A monopoly firm faces a downward sloping demand curve, that is, its average revenue curve. The downward sloping demand curve implies that large output can be sold only by reducing the price. The marginal revenue curve will be below the average revenue curve.

The average cost curve is „U" shaped. The monopolist will be in equilibrium when MC=MR and the MC curve cuts the MR curve from below.

In figure, AR is the Average Revenue Curve and MR is the Marginal Revenue curve. AR curve is falling and MR curve lies below AR. The monopolist is in equilibrium at E where MR=MC. He produces OM units of output and fixes price at OP. At OM output, the average revenue is MQ and average cost MS. Therefore the profit per unit is MQ-MS=SQ. Total profit is average profit (SQ) multiplied by output(OM), which is equal to RSQP. The

monopolist is in equilibrium at point E and produces OM output at which he is earning maximum profit. The monopoly price is higher than the marginal revenue and marginal cost.



Monopolistic competition

Monopolistic competition, as the name itself implies, is a blending monopoly and competition. Monopolistic competition refers to the market situation in which a large number of sellers produce goods which enclose substitutes of one another. The products are similar but not identical. The particular brand of product will have a group of loyal consumers. In this respect, each firm will have some monopoly and at the same time the firm has to compete in the market with the other firms as they produce a fair substitute. The essential features of monopolistic competition are product differentiation and existence of many sellers.

The following are the examples of monopolistic competition in Indian context.

1. Shampoo – Sun Silk, Clinic Plus, Ponds, Chik, Velvette, Kadal, Head and Shoulder, Pantene, Vatika, Garnier, Meera.
2. Tooth Paste – Binaca, Colgate, Forhans, Close-up, Promise, Pepsodent, Vicco vajradant, Ajanta, Anchor, Babool.

Characteristics of Monopolistic Competition

(i) **Existence of Large Number of firms:** Under monopolistic competition, the number of firms producing a commodity will be very large. The term „Very large" denotes that contribution of each firm towards the total demand of the product is small. Each firm will act independently on the basis of product differentiation and each firm determines its price-output policies. Any action of

the individual firm in increasing or decreasing the output will have little or no effect on other firms.

(ii) **Product differentiation:** Product differentiation is the essence of monopolistic competition. Product differentiation is the process of altering goods that serve the same purpose so that they differ in mirror ways.

Product differentiation can be brought about in various ways. Product differentiation is attempted through (a)Physical difference; (b)Quality difference; (c)imaginary difference and (d)Purchase benefit difference. It may be by using different quality of the raw material and different chemicals and mixtures used in the product. Difference in workmanship, durability and strength will also make product differentiation. Product differentiation may also be effected by offering customers some benefits with the sale of the product. Facilities like free servicing, home delivery, acceptance of returned goods, etc. would make the customers demand that particular brand of product when such facilities are available. Product differentiation through effective advertisement is another method. This is known s sales promotion. By frequently advertising the brand of the product through press, film, radio, and TV, the consumers are made to feel that the brand produced by the firm in question is superior to that of other brands sold by other firms.

(iii) **Selling Costs:** From the discussion of „product differentiation", we can infer that the producer under monopolistic competition has to incur expenses to popularize his brand. This expenditure involved in selling the product is called selling cost. According to Prof. Chamberlin, selling cost is "the cost incurred in order to alter the position or shape of the demand curve for a product". Most important form of selling cost is advertisement. Sales promotion by advertisement is called non- price competition.

(iv) **Freedom of entry and exit of firms:** Another important feature is the freedom of any firm to enter into the field and produce the commodity under its own brand name and any firm can go out of the field if so chosen. There are no barriers as in the case of monopoly.

Monopolistic competition presupposes that customers have definite preferences for particular varieties or brand of products. Hence pricing is not the problem but product differentiation is the problem and competition is not on prices but on products. Thus in monopolistic competition, the features of monopoly and perfect competition are partially present.

Determination of Equilibrium price and output under monopolistic competition

The monopolistic competitive firm will come to equilibrium on the principle of equalizing MR with MC. Each firm will choose that price and output where it will be maximizing its profit. Figure shows the equilibrium of the individual firm in the short period.

Short Period Equilibrium of a Monopolistic competitive firm with Profit

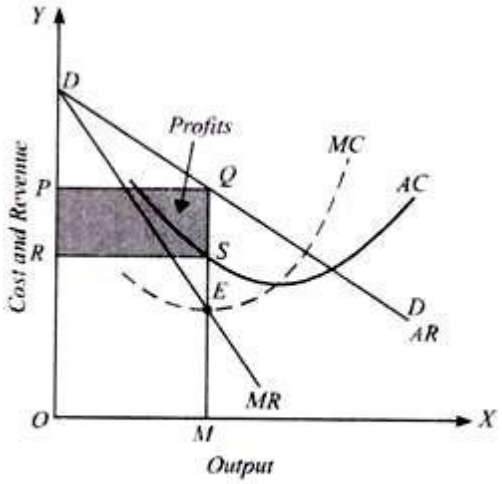
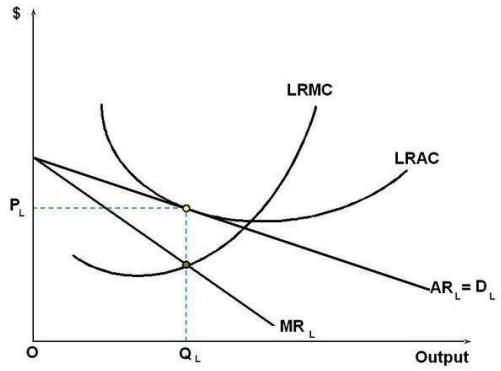


Fig. 28.3. *Individual Firm's Equilibrium under Monopolistic Competition (with Profits)*

MC and AC are the short period marginal cost and average cost curves. The sloping down average revenue and marginal revenue curves are shown as AR and MR. The equilibrium point s E where MR=MC. The equilibrium output is OM and the price of the product is fixed at OP. The difference between average cost and average revenue is SQ. The output is OM. So, the supernormal profit for the firm is shown by the rectangle PQSR. The firm by producing OM units of its commodity and selling it at a price of OP per unit realizes the maximum profit in the short run.

The different firms in monopolistic competition may be making either abnormal profits or losses in the short period depending on their costs and revenue curves.

In the long run, if the existing firms earn super normal profit, the entry of new firms will reduce its share in the market. The average revenue of the product will come down. The demand for factors of production will increase the cost of production. Hence, the size of the profit will be reduced. If the existing firms incur losses in the long-run, some of the firms will leave the industry increasing the share of the existing firms in the market. As the demand for factors becomes less, the price of factors will come down. This will reduce the cost of production, which will increase the profit earned by the existing firms will earn normal profit in the long run.



Oligopoly

Oligopoly refers to a form of imperfect competition where there will be only a few sellers producing either homogeneous or differentiated products.

Characteristics of Oligopoly

1. **Interdependence:** The most important feature of oligopoly is interdependence in decision-making. Since there are a few firms, each firm closely watches the activities of the other firm. Any change in price, output, product, etc., by a firm will have a direct effect on the fortune of its rivals. So an oligopolistic firm must consider not only the market demand for its product, but also the possible moves of other firms in the industry.
2. **Group Behaviour:** Firms may realize the importance of mutual co-operation. Then they will have a tendency of collusion. At the same time, the desire of each firm to earn maximum profit may encourage competitive spirit. Thus, co-operative and collusive trend as well as competitive trend would prevail in an oligopolistic market.
3. **Price Rigidity:** Another important feature of oligopoly is price rigidity. Price is sticky or rigid at the prevailing level due to the fear of reaction for the rival firms. If an oligopolistic firm lowers its price, the price reduction will be followed by the rival firms. As a result, the firm loses its profit. Expecting the same kind of reaction, if the oligopolistic firm raises the price, the rival firms will not follow. This would result in losing customers. In both ways the firm would face difficulties. Hence the price is rigid.

PRICE DETERMINATION UNDER OLIGOPOLY

a. **Price Rigidity or The Kinked Demand Curve Model**

The Price rigidity model was given by **Paul M. Sweezy.** Oligopolistic prices that remain stable over a period of time are called rigid price. The sellers will have no

inclination to change the price even though there are changes in cost or demand conditions. For example, the wholesale prices of durable consumer goods remain stable for the entire year or season.

Assumption

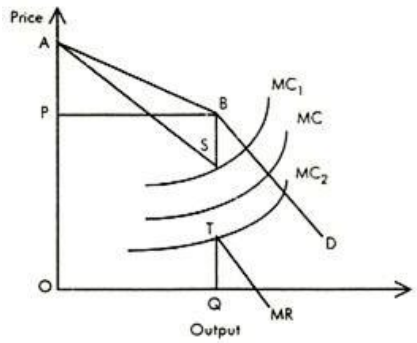
1. Each seller"s attitude depends on the attitude of his rivals.
2. Any attempt of every seller to push up his sales by reducing the price will be counteracted by other sellers.
3. Any attempt to raise the price will not be followed by other firms. Others will stick to the prevailing price.
4. The marginal cost curve passes through the dotted portion of the MR curve so that change in MC do not affect price and output.

Reasons for Price-Rigidity

1. Sellers might have learnt through experience the futility of price war.
2. They may be content with the current price and profit.
3. To prevent the entry of new firms
4. Non-price competition may be better than price rigidity.
5. To increase sales through advertisement
6. Setting stable price through agreement, and
7. The kinked demand curve.

Price Determination

Like sellers under other market situations, oligopolists also try to earn maximum profit by fixing a rigid price. Price of the product tends to the fixed at the kink on the demand curve. The kink on the demand curve implies that demand elasticity differs as between different portions of the demand curve. The price fixed on the kink is the rigid price.



ABD – Kinked demand Curve OP –Prevailing price

MR – Marginal revenue curve

MC, MC_1, MC_2 = Marginal cost curves

Any increases in price above point P will reduce the sales of the oligopolists. It is because of the fact that the other rivals are not expected to follow his price increase. This is shown by the AB portion of the AR curve which is less elastic. The corresponding portion of the MR curve is positive.

If the oligopolists reduce the price of the product below OP his rivals will also reduce their prices. The demand curve ABD has a kink at „B". It brings a discontinuity in marginal revenue curve from S to T. The size of the gap depends upon the elasticity of demand curve (ABD). MC curve can shift up and down between S and T without causing a change in price. However, if the cost of production rises, the MC curve rises above point S. It will intersect the MR Curve in the SA portion. As a result, the seller can sell lesser quantity at a higher price.

Under oligopoly the firm is said to be in equilibrium at point S. It is because any point to the left of „S" makes MC greater than MR. Only at S, MR is equal to MC and the firm is in equilibrium.

B. PRICE LEADERSHIP

Price leadership is a leading form of informal collusion among oligopolists. Here one firm acts as the price leader and other firms agree to follow the leader. An oligopolists may become a price leader because of its expert knowledge of market conditions or its dominant position in the market. In real world, price leadership by the largest firm is more common. The price leadership is established as a result of price war.

Kinds of Price Leadership

Price leadership is of various kinds. The important among them are

(i) Barometric price leadership

(ii) Dominant price leadership; and

(iii) Aggressive or Exploitative price leadership

(i) Barometric price leadership

A firm is called the price leader because it announces a price change first by estimating demand and cost conditions. The leader firm is sensitive to changes in the demand and supply conditions in the market.

(ii) Dominant Price Leadership

The largest firm dominates in the industry. It fixes the profit maximizing price for its product and other firms will accept that price.

(iii) Aggressive or Exploitative Price Leadership

Sometimes, the price leader may fix a very low price. It will force some of the firms to leave the industry (market). This type of price leadership is called „aggressive or exploitative price leadership".

Assumptions

1. There are only two firms, A and B.
2. Commodity produce by them are homogeneous.
3. The cost conditions of two firms differ.
4. The dominant firm alone is capable of estimating the market demand curve for the product.

Price Determination

Like other sellers in different market situations, a price leader also aims to maximize his profit. He tries to achieve his goal by selling an output for which MC=MR. It can be illustrated with the help of the following figure:

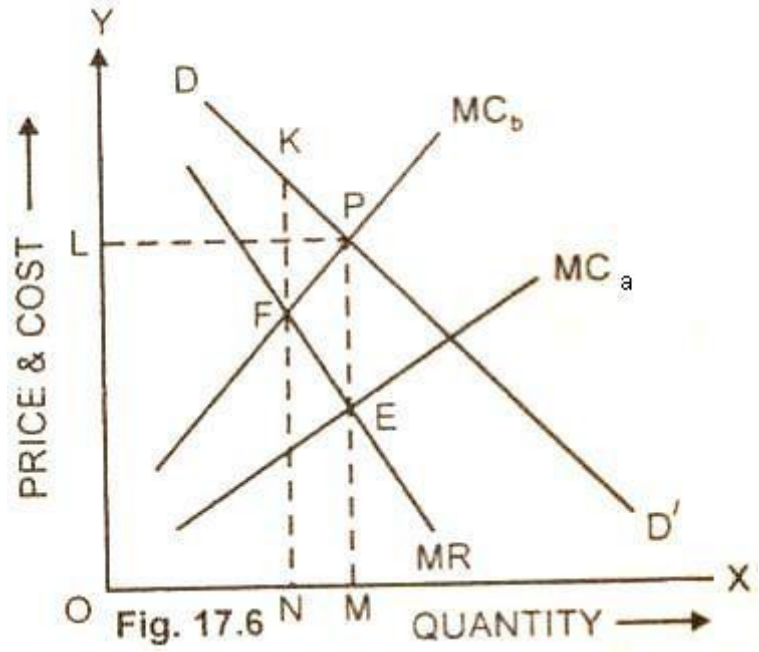


Fig. 17.6

In the figure,

DD` = Demand Curve (Average revenue curve)

MR= Marginal revenue curve

MC_a and MC_b = Marginal cost curves of firms, A and B.

The firm is in equilibrium at point E. Therefore, the equilibrium price is MP and equilibrium output is OM. Marginal cost of firm „a" (MC_a) lies below marginal cost of firm „b" (MC_b). Firm B is in a position to sell ON units of the product at KN price. His rival, firm A will not follow firm B. therefore, firm B is compelled to follows the price (PM) fixed by firm A. Here, firm A is the price leader and firm B has to follow the price fixed by Firm A. Thus, price is determined under price leadership in an oligopoly market.

PRICING POLICY

The exchange value of a commodity or service expressed in term of money is called „price". Price is an important element to be considered by both the buyers and sellers. Distinction between different markets is also made on the basis of price. If there is uniform price in the market, it is a perfect market. According to A.C. Pigou, "Perfect competition implies uniformity of price. But uniformity of price does not necessarily mean market is perfect. There may be simple monopoly charging only one or price discriminating monopoly."

Steps in Price Decision

(i) Determining the broad objectives of price policy;

(ii) Study the factors influencing price policy;

(iii) Formulating appropriate price policies for different (old and new) products; and

(iv) Farming a long term integrating price policy for the firm.

Objective of Pricing Policy

The following are the important objectives of price policy of a firm;

1. Maximization of profit

Profit maximization is the goal of every business firm. It can be achieved either through cost minimization or fixing a higher price for the product.

2. Return on Investment

A firm must have a minimum return on its investment to continue a particular business. The rate of return on investment should be estimated in advance and pricing policy should be framed accordingly.

3. Capturing Market

Each firm uses different techniques to capture market for their product. Pricing is one of the important techniques next to quality of the product. For instance, in the case of price

discriminating monopoly, a monopolist charges a low price in the foreign market in the home market to capture market for his product. This act is called as „Dumping".

4. Affordable Price

While fixing the price, business firms aim to attract more new buyers and make the old buyers to buy more. But, the price fixed should be according to the „ability to pay principle". For instance, many doctors charge different price for their service on the basis of the economic conditions of the patients. Otherwise, many people cannot make use of such services.

5. Competition

There are price and non-price competitions among the sellers of a particular product. Price war leads to competitive wastages and the burden is passed on to the buyers. To avoid this, the firm must produce the product or service at the least cost and fix a low price.

6. Price Stability

Frequent fluctuation in the price of a product will cause loss of market for that product. Government also fixes minimum price for both the products and factors to avoid instability in different sectors of the economy.

7. Long run Welfare of Firm

Many firms earn fame and name by fixing a price acceptable by the consumers. A firm fixing a higher price may earn abnormal profit at a given point of time due to various reasons. But, ultimately it will lose the market for its product. Thus, the long run welfare of firm depends on its pricing decision.

FACTORS INFLUENCING PRICING POLICY

Before fixing the price for his product, a business firm must consider the following factors: (i) Demand; (ii) Cost; (iii) Nature of the product; (iv) Nature of market; (v) Competition; (vi) Public opinion; (vii) Government opinion; (viii) Availability of Substitutes; (ix) Status of the firm; and (x) Objectives of business.

(i) Demand

Demand for the product or service is the most important factor in the determination of price. The firm must consider whether the demand for his product is elastic or inelastic. If it is elastic, firm can fix a lower price and increase its sales to maximize its profit and vice versa.

(ii) Cost

Pricing policy is influenced by cost of production. Higher the cost, higher should be the price to avoid business loss and vice versa. If production is subject to the Law of Increasing Cost, the firm should reduce output and increase its price to earn profit. On the other hand, if production is subject to the Law of Diminishing Cost, the firm should increase its output and fix a lower price to maximize sales to earn more profit.

(iii) Nature of the Product

The product sold in the market may be necessaries, comforts and luxuries. If the products are necessaries, the firm may fix a higher price since their demand is more or less inelastic. On the other hand, in the case of comforts or luxuries, their demand will be elastic and so the firm can fix only a low price.

(iv) Nature of the Market

The business firm should look into the nature and composition of the market before fixing price. It should try to find whether industrial users demand the product or commercial houses or individuals demand the product. If its market consists of individual consumers, it should see whether they are rich, middle-class or poor. These things will act as a better guide to the business firm while fixing prices.

(v) Competition

No seller is free to fix any price as he likes. If the firm is a monopoly, it can fix a higher price. In cases where competition is very keen, a higher price may be fixed along with product differentiation.

(vi) Public opinion

Now a days, consumers protest against higher prices. If it is so, business firms must give due importance to public opinion while fixing price for their product.

(vii) Government opinion

Modern government undertakes many welfare activities. It passes legislations against fixation of prices for products and factors. If the government is for the people, the firm can fix only a reasonable price.

(viii) Availability of Substitutes

Presence of substitutes to a product is a matter of great concern while determining the price of a product. If substitutes are available the firm can fix only a lower price and vice versa.

(ix) Objectives of business

Every business firm functions with the objectives like maximization of profit, capturing market for their product, avoiding or eliminating competitions and so on. But, it has to consider the long run welfare while taking pricing decisions.

PRICING METHODS

Price is the exchange value of a product expressed in terms of money. It is the amount paid by the buyers while buying a product or service. A firm may fix different prices by considering the situations prevailing in the market. The following are the important pricing methods:

(i) Full Cost Pricing (Cost plus Pricing)

Full cost pricing method is commonly used in practice. Under this method, the business firm attempts to avoid business loss. To achieve this, the firm calculates the cost of producing the product or products purchased for resale. Then a reasonable profit margin is added to it. Thus, the price for the product is determined. In the case of retail price,

Price = Manufacturer‟s Cost + Profit Margin + Wholesaler‟s Profit Margin + Retailer‟s Profit Margin

This method is also called as „sum of margin method‟. It is also known as „mark-up pricing‟ or „average cost pricing‟ because businessmen add a mark-up to their average cost of production before fixing price. This type of pricing is more common in large contracts.

(ii) Marginal or Incremental Cost Pricing

Under this method, prices are determined on the basis of variable costs or direct costs like cost of raw materials and wages. It is also called as „direct-cost pricing.‟ It is an alternative to full-cost pricing. This pricing is guided by cost accounting information‟s.

According to this method, a part of fixed cost need not be covered while fixing price of a product in the short run. This method is useful when a new product is to be introduced in the market by the existing firm. A firm cannot follow this method for a long period as the firm cannot afford to sell at marginal cost only for long.

This policy cannot be used under the following situations:

(i) This method assumes the presence of excess capacity. IF the plant capacity needs to be enhanced to meet the additional demand it shall for a part of incremental cost.

(ii) This method is not suitable in the cases where there are frequent changes in prices.

(iii) When there is the need for estimating demand elasticity‟s and sales forecasting this method will be expensive. It is because its administrative cost will be high.

(iv) When pricing covers only variable cost there is the possibility of incurring losses in the long run. It is because fixed costs are ignored under this method.

(v) When businessmen do not have adequate knowledge about marginal cost and marginal revenue this method cannot be used.

(iii) Rate of Return on Investment

Under this method, price is set to achieve a target return on investment (ROI). Many firms follow this method. This method is suitable for distributors who wish to sell bulk quantity and get a quick turnover of capital. When turnover is quick a low rate of return can be fixed and more profit can be obtained.

To find the profit margin the firm has to estimate the „normal rate of production‟ and its „total cost‟. It is called as „standard cost.‟ Then, the firm has to compute the „ration of investment capital‟ to „annual standard cost‟. It is known as „capital turnover‟. Multiplying turnover by the planned rate of return gives the mark-up percentage of profit margin of the firm.

$$\text{Mark-up percentage of profit margin} = \frac{\text{Invested Capital}}{\text{Planned Rate of Return}} x \text{ Annual Standard Cost}$$

Higher the production higher will be the rate of return on investment and vice versa. It is because the actual unit cost will be lower than the standard unit cost when goods are produced on a large scale. This method is applicable only when,

(i) The firm is able to fix and control its price;

(ii) The firm is able to estimate sales information; and

(iii) The firm operates with a long run perspective.

(iv) Going Rate Pricing

Generally, small firms do not have a price policy of their own. They usually fix a price, which is close to the prevailing price. This method is also called „imitative pricing‟. Under this method, there is no need to estimate or calculate the costs incurred so far. The price fixed is the result of choice exercised by firms and not their inability to fix a price. The going-rate pricing is adopted under the following situations:

(i) When the firm finds it difficult to calculate costs of production;

(ii) When the firms want to avoid competition and its wastages;

(iii) When there is a price leader (oligopolists) in the market. A price leader is a dominant fir, which fixes the price and makes the other firms to follow.

(v) Product Line Pricing

Many firms produce a number of products and different sizes of the same product. For example, the manufacturers of fan belts may manufacture belts for different vehicles and also industrial uses. This pricing indicates the relationship in prices of different sizes and different uses of the products if any. The solution to this problem is provided by the objective function of the firm. The firm‟s objective may be to get returns on investment or get profit from every size and use of the product. Thus, product line pricing is based on the objective of the firm and the characteristics of the market. Joel Dean has provided the following alternatives

1. Prices having a relationship with the full cost including a proportion of overhead costs.
2. Prices that are related to the incremental costs of products suggesting that this pricing policy is only for the short run.
3. Prices related to value added by the firm.
4. Prices that take into account the market conditions as reflected by the intensity of competition and elasticity of demand.
5. Prices based on the stage of the product life-cycle of different products.
6. Prices to maximize (a) total net revenue, or (b) sales volume or (c) sales volume subject to a minimum profit.

Most of the firms producing different size of the same product in India follow cost-plus without considering the above said alternatives.

(vi) Dual Pricing (Double Pricing)

When the manufacturers sell the same product at two or more than two prices it is „dual or double pricing‟. This is possible only when different brands of the same product are marketed in the same market. The price differential is justified on account of varying distribution costs. The dual pricing is adopted in Railways. For the same distance of travel, in very same vehicle, the services are sold to passengers at different prices under different classes. In the case of sales of products, two prices are given on the pack of the article. The original price is usually crossed and the new lower price is mentioned below it.

(vii) Administered Pricing

Administered prices are purely based on the policy decisions of the sellers following government instructions. Generally, the government on the basis of cost plus a stipulated profit fixes prices. These prices usually remain unchanged for substantial periods of time. For example, commodities like steel, coal, aluminum. Fertilizers and cement are subject to administered price. Commodities sold at the fair price shops under the public distribution system are also subject to administered prices. These prices are fixed with the following objectives:

(i) To maintain the prices of essential commodities and also inputs to avoid price escalation; and

(ii) To ensure reasonable prices to uneconomic units.

(viii) Transfer Pricing

Transfer price is the price at which product; materials and services are transferred from autonomous division to another division within the same firm. It is an internal pricing technique. It refers to a price at which output of one department is transferred to another in order to maximize the overall profits of the firm.

In the case of company having multiple processes, the output of one process is the input of the next. The output price of one process affects the output price of the next process. For example, the engine department of kinetic Honda makes scooter engines and forwards these to the assembly department. The assembly department in turn assembles the scooter. Here, the price at which engine department forwards each engine affects the price of the scooter.

PRICING OF A NEW PRODUCT

Pioneering Pricing

A product is new when it is unique, new to the industry and has no close substitute. Businessmen are always short of information‟s to take decisions regarding a new product. A strategic decision in pricing a product is the choice between:

(i) A policy of high initial prices than skim the cream demand; and

(ii) A policy of low price for market penetration.

The former is known as „skimming pricing‟ and the latter is known as the „penetrating pricing policy‟.

a) Skimming Pricing Policy (High pricing)

It is a discriminatory pricing method. It is adopted in the case of specialty goods. Under this method, a higher price is charged from those buyers who can afford or willing to pay more. It is essentially what the traffic can bear. A firm by introducing new technology can upgrade the quality of the product. Through advertisement and publicity it may convince buyers the better quality of its product and charge a higher price. This is because a relatively higher price will tend to attract new sellers and the firm will have to reduce the price. Since the skimming price skims the cream demand it is also called as „cream pricing".

Skimming pricing will be successful under the following situation

(i) When the life-cycle of the product is expected to be short;

(ii) When demand is likely to be more inelastic in the initial stage;

(iii) When the firm can classify the market into segments based on their pricing sensitivity and ability to pay;

(iv) When the introduction of a new product has caused very heavy expenditure on research and promotional efforts;

(v) When cross-elasticity of demand is very low due to lack of market information"s and absence of substitutes;

(vi) When high prices does not attract competitors;

(vii) When there is high ratio of variable cost of fixed costs.

Merits

1. This method improves the quality image o the firm and thus allows it to charge a high initial price.
2. It helps for the recovery of the expenses in the initial year itself.
3. It creates possibility for tapping lower segments of the market at a later stage.
4. It is useful when newly promoted product is luxury, in fashion or is a status symbol.
5. When tough competition in future is feared, this policy should be followed.

b) Penetrating Pricing

Penetrating pricing refers to an alternative policy to skim pricing, which uses low prices as the principal agent for market penetration. This policy attempts to create permanent customers for a product. It is the reverse of the skimming price policy. The penetrating price policy aims to earn maximum profit in the long run. A firm may adopt the strategy of charging low price to obtain a large share of the market and to develop brand preference. It prevents the entry of new firms by keeping margin of profit low and helps to obtain the

advantage of economies of scale. This strategy is useful to the products having a steady long- term demand. This policy is suitable in the following circumstances

(i) When there s high responsiveness of sales to reduction in prices;
(ii) When low price discourages competition;
(iii) When the firm has the advantage of economies of scale in production and distribution;
(iv) When low prices acts as a shield to avoid government intervention in pricing;
(v) When an important segment (lowest segment) of the market remain untapped by existing high-priced products.

There are three demerits of this price policy:

(i) It attracts competition; (ii) entry of new firms is easy but this policy is risky; and (iii) this policy can be followed for a short period only.