MANAGERIAL ECONOMICS

1ˢᵗ Semester Paper-III

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MHRM: Managerial Economics

FOREWORD

Since its establishment in 1976, Acharya Nagarjuna University has been forging ahead in the path of progress and dynamism, offering a variety of courses and research contributions. I am extremely happy that by gaining 'A' grade from the NAAC in the year 2016, Acharya Nagarjuna University is offering educational opportunities at the UG, PG levels apart from research degrees to students from over 443 affiliated colleges spread over the two districts of Guntur and Prakasam.

The University has also started the Centre for Distance Education in 2003-04 with the aim of taking higher education to the door step of all the sectors of the society. The centre will be a great help to those who cannot join in colleges, those who cannot afford the exorbitant fees as regular students, and even to housewives desirous of pursuing higher studies. Acharya Nagarjuna University has started offering B.A., and B.Com courses at the Degree level and M.A., M.Com., M.Sc., M.B.A., and L.L.M., courses at the PG level from the academic year 2003-2004 onwards.

To facilitate easier understanding by students studying through the distance mode, these self-instruction materials have been prepared by eminent and experienced teachers. The lessons have been drafted with great care and expertise in the stipulated time by these teachers. Constructive ideas and scholarly suggestions are welcome from students and teachers involved respectively. Such ideas will be incorporated for the greater efficacy of this distance mode of education. For clarification of doubts and feedback, weekly classes and contact classes will be arranged at the UG and PG levels respectively.

It is my aim that students getting higher education through the Centre for Distance Education should improve their qualification, have better employment opportunities and in turn be part of country's progress. It is my fond desire that in the years to come, the Centre for Distance Education will go from strength to strength in the form of new courses and by catering to larger number of people. My congratulations to all the Directors, Academic Coordinators, Editors and Lesson- writers of the Centre who have helped in these endeavours.

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MASTER OF ARTS: HUMAN RESOURCE MANAGEMENT (H.R.M)
SEMESTER-I
103HM21 - MANAGERIAL ECONOMICS

Unit – I General Foundations of Managerial Economics - Economic Approach - Circular Flow of Activity - Nature of the Firm - Objectives of Firms - Demand Analysis and Estimation - Individual, Market and Firm demand - Determinants of demand - Elasticity measures and Business Decision Making - Demand Forecasting.

Unit-II Law of Variable Proportions - Theory of the Firm – Production Functions in the Short and Long Run - Cost Functions – Determinants of Costs – Cost Forecasting - Short Run and Long Run Costs –Type of Costs - Analysis of Risk and Uncertainty.

Unit-III Product Markets -Determination Under Different Markets – Market Structure – Perfect Competition – Monopoly – Monopolistic Competition – Duopoly - Oligopoly - Pricing and Employment of Inputs Under Different Market Structures – Price Discrimination - Degrees of Price Discrimination.

Unit-IV Introduction to National Income – National Income Concepts – Models of National Income Determination - Economic Indicators - Technology and Employment - Issues and Challenges – Business Cycles – Phases – Management of Cyclical Fluctuations - Fiscal and Monetary Policies.

Unit – V Macro Economic Environment - Economic Transition in India – A quick Review - Liberalization, Privatization and Globalization – Business and Government - Public-Private Participation (PPP) - Industrial Finance - Foreign Direct Investment(FDIs)

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C O N T E N T

LESSON – 1
THE FUNDAMENTALS OF MANAGERIAL ECONOMICS

Learning objectives

After studying this lesson, the students are able to understand.
- Introduction
- Why study economics?
- Managerial economics
- Nature of managerial economics
- Managerial economics and other disciplines
- Circular flow of economic activity
- Nature of the firm

Structure

1.1   Introduction

People have limited number of needs which must be satisfied if they are to survive as human beings. Some are material needs, some are psychological needs and some others are emotional needs. People's needs are limited; however, no one would choose to live at the level of basic human needs if they want to enjoy a better standard of living. This is because human wants (desire for the consumption of goods and services) are unlimited. It doesn't matter whether a person belongs to the middle class in India or is the richest individual in the World, he or she wants always something more. For example bigger a house, more friends, more salary etc., Therefore the basic economic problem is that the resources are limited but wants are unlimited which forces us to make choices.

Economics is the study of this allocation of resources, the choices that are made by economic agents. An economy is a system which attempts to solve this basic economic problem. There are different types of economies; household economy, local

economy, national economy and international economy but all economies face the same problem. The major economic problems are (i) what to produce? (ii) How to produce?(iii)When to produce and (iv) For whom to produce? Economics is the study of how individuals and societies choose to use the scarce resources that nature and the previous generation have provided. The world's resources are limited and scarce. The resources which are not scarce are called free goods. Resources which are scarce are called economic goods.

1.2 Why study economics?

A good grasp of economics is vital for managerial decision making, for designing and understanding public policy, and to appreciate how an economy functions. The students need to know how economics can help us to understand what goes on in the world and how it can be used as a practical tool for decision making. Managers and CEO's of large corporate bodies, managers of small companies, nonprofit organizations, service centers etc., cannot succeed in business without a clear understanding of how market forces create both opportunities and constraints for business enterprises.

Reasons for studying economics:
- It is a study of society and as such is extremely important.
- It trains the mind and enables one to think systematically about the problems of business and wealth.
- From a study of the subject, it is possible to predict economic trends with some precision.
- It helps one to choose from various economic alternatives.

Economics is the science of making decisions in the presence of scarce resources. Resources are simply anything used to produce a good or service to achieve a goal. Economic decisions involve the allocation of scarce resources so as to best meet the managerial goal. The nature of managerial decision varies depending on the goals of the manager. A Manager is a person who directs resources to achieve a stated goal and he/she has the responsibility for his/her own actions as well as for the actions of individuals, machines and other inputs under the manager's control.

1.3 Managerial economics

The study of how scarce resources are directed most efficiently to achieve managerial goals. It is a valuable tool for analyzing business situations to take better decisions. Prof. Evan J Douglas defines Managerial Economics as "Managerial Economics is concerned with the application of economic principles and methodologies to the decision making process within the firm or organization under the conditions of uncertainty"

According to Milton H Spencer and Louis Siegel man "Managerial Economics is the integration of economic theory with business practices for the purpose of facilitating decision making and forward planning by management"

According to Mc Nair and Miriam, 'Managerial Economics consists of the use of economic modes of thoughts to analyze business situations'.

Economics can be divided into two broad categories: micro economics and macro economics. Macro economics is the study of the economic system as a whole. It is related to issues such as determination of national income, savings, investment, employment at aggregate levels, tax collection, government expenditure, foreign trade, money supply etc., **Micro economics** focuses on the behavior of the individuals, firms and their interaction in markets. Managerial economics is an application of the principles of micro and macroeconomics in managerial decision making.

The economic way of thinking about business decision making provides all managers with a powerful set of tools and insights for furthering the goals of their organization. Successful managers take good decisions, and one of their most useful tools is the methodology of managerial economics.

1.4 Nature of managerial economics

1. Managerial economics is concerned with the analysis of finding optimal solutions to decision making problems of businesses/ firms (micro economic in nature).
2. Managerial economics is a practical subject therefore it is pragmatic.
3. Managerial economics describes, what is the observed economic phenomenon (positive economics) and prescribes what ought to be (normative economics)
4. Managerial economics is based on strong economic concepts. (conceptual in nature)
5. Managerial economics analyses the problems of the firms in the perspective of the economy as a whole (macro in nature)
6. It helps to find optimal solution to the business problems(problem solving)

1.5 Managerial economics and other disciplines

Managerial economics has its relationship with other disciplines for propounding its theories and concepts for managerial decision making. Essentially it is a branch of economics. Managerial economics is closely related to certain subjects like statistics, mathematics, accounting and operations research.

Managerial economics helps in estimating the product demand, planning of production schedule, deciding the input combinations, estimation of cost of production, achieving economies of scale and increasing the returns to scale. It also includes determining price of the product, analyzing market structure to determine the price of the product for profit maximization, which helps them to control and plan capital in an effective manner.

Successful mangers make good decisions, and one of their most useful tools is the methodology of managerial economics. Warren E Buffett, the renowned chairman and CEO of Berkshire Hathaway Inc., invested $100 and went on to accumulate a personal net worth of $30 billion. Buffett credits his success to a basic understanding of managerial economics. Buffett's success is a powerful testimony to the practical usefulness of managerial economics.

Managerial economics has a very important role to play by helping managements in successful decision making and forward planning. To discharge his role successfully, a

manager must recognize his responsibilities and obligations. There is a growing realization that the managers contribute significantly to the profitable growth of the firms.

We can conclude that managerial economics consists of applying economic principles and concepts towards adjusting with various uncertainties faced by a business firm.

1.6 Circular Flow of Economic Activity

The individuals own or control resources which are necessary inputs for the firms in the production process. These resources (factors of production) are classified into four types.

Land: It includes all natural resources on the earth and below the earth. Non renewable resources such as oil, coal etc once used will never be replaced. It will not be available for our children. Renewable resources can be used and replaced and is not depleted with use.

Labour: is the work force of an economy. The value of the worker is called as human capital.
Capital: It is classified as working capital and fixed capital (not transformed into final products)
Entrepreneurship: It refers to the individuals who organize production and take risks.

All these resources are allocated in an effective manner to achieve the objectives of consumers (to maximize satisfaction), workers (to maximize wages), firms (to maximize the output and profit) and government (to maximize the welfare of the society).

The fundamental economic activities between households and firms are shown in the diagram. The circular flows of economic activities are explained in a clockwise and counterclockwise flow of goods and services. The four sectors namely households, business, government and the rest of the world can also be considered to see the flow of economic activities. The circular flow of activity is a chain in which production creates income, income generates spending and spending in turn induces production.

The major four sectors of the economy are engaged in three economic activities of production, consumption and exchange of goods and services. These sectors are as follows:

Households: Households fulfill their needs and wants through purchase of goods and services from the firms. They are owners and suppliers of factors of production and in turn they receive income in the form of rent, wages and interest.

Firms: Firms employ the input factors to produce various goods and services and make payments to the households.

Government: The government purchases goods and services from firms and also factors of production from households by making payments.

Foreign sector: Households, firms and government of India purchase goods and services (import) from abroad and make payments. On the other hand all these sectors sell goods and services to various countries (export) and in turn receive payments from abroad

Chart - 1
Circular Flow of Economic Activity

The above said four agents take economic decisions to produce goods and services and to exchange them and to consume them for satisfying the wants of the economy as a whole. Understanding the opportunities and constraints in the exchange is essential to take better decision in business. This is discussed in the forthcoming chapters in detail.

The economy comprises of the interaction of households, firms, government and other
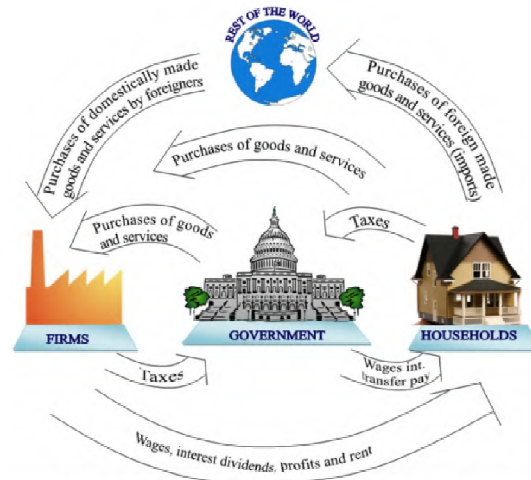
nations. Households own resources and supply factor services like land, raw material, labour and capital to the firms which helps them to produce goods and services. In turn, firms pay rent for land, wages for their labour and interest against the capital invested by the households. The earnings of the household are used to purchase goods and services from the firms to fulfill their needs and wants, the remaining is saved and it goes to the capital market and is converted as investments in various businesses. The household and business firms have to pay taxes to the government for enjoying the services provided. On the other hand firms and households purchase goods and services (import) fromvariouscountriesoftheworld.Firmstendtoselltheirproductstothe   foreign   customers (export) who earn income for the firm and foreign exchange for the country. Therefore, it is clear that households supply input factors, which flow to firms. Goods and services produced by firms flow to households. Payment flows in the opposite direction (refer chart1)

1.7 Nature of the Firm
        A **firm** is an association of individuals who have organized themselves for the purpose of turning inputs into output. The firm organizes the factors of production to produce goods and services to fulfill the needs of the households. Each firm lays down its own objectives which is fundamental to the existence of a firm.

The major **objectives** of the firm are:
- To achieve the Organizational Goal
- To maximize the Output
- To maximize the Sales
- To maximize the Profit of the Organization

- To maximize the Customer and Stakeholders Satisfaction
- To maximize Shareholder's Return on Investment
- To maximize the Growth of the Organization

Firms are established to earn profit, to keep the shareholders happy. To increase their market share, they try to maximize their sales. In the present business world firms try to produce goods and services without harming the environment. Firms are not always able to operate at a profit. They may be facing the operating loss also. Economists believe that firms maximize their long run rather than their short run profit. So managers have to make enough profit to satisfy the demands of their shareholders and to maximize their wealth through the company.

1.8 Summary

People have limited number of needs which must be satisfied if they are to survive as human beings. Some are material needs, some are psychological needs and some others are emotional needs. People's needs are limited; however, no one would choose to live at the level of basic human needs if they want to enjoy a better standard of living. This is because human wants (desire for the consumption of goods and services) are unlimited. It doesn't matter whether a person belongs to the middle class in India or is the richest individual in the World, he or she wants always something more. For example bigger a house, more friends, more salary etc., Therefore the basic economic problem is that the resources are limited but wants are unlimited which forces us to make choices.

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1.9 Keywords
Managerial   : Relating to management or managers.
Society   : The aggregate of people living together in a more or less ordered community.
Decision   : A conclusion or resolution reached after consideration
Individuals   : A single human being as distinct from a group.
Manager   : A person responsible for controlling or administering an organization or group of staff.
Management   : The process of dealing with or controlling things or people
Entrepreneurship: The activity of setting up a business or businesses, taking on financial risks in the hope of profit.

1.10 Self-assessment questions
1) Distinguish betweenmicro economics, macro economics and managerial economics.

2) What is managerial economics? Why does study managerial economics?
3) Describe the circular flow of economic activity of India.
4) Discuss the nature of the firm.
5) List out the major objectives of the firm.
6) How does managerial economics relate with other disciplines for propounding its theories?
7) Identify the areas of decision making where managerial economics prescribes specific solutions to business problems.
8) Discuss the role and responsibilities of a managerial economist.

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-Dr. B. Nagaraju

LESSON – 2
DEMAND ANALYSIS

Learning objectives

After Studying this lesson, the students is able to understand.

- Introduction
- Law of demand
- Demand function
- Determinants of demand
- Types of demand
- Exceptional demand curve

Structure

2.1 Introduction

The concepts of demand and supply are useful for explaining what is happening in the market place. Every market transaction involves an exchange and many exchanges are undertaken in a single day. The circular flow of economic activity explains clearly that every day there are a number of exchanges taking place among the four major sectors mentioned earlier.

A market is a place where we buy and sell goods and services. A buyer demands goods and services from the market and the sellers **supply** the goods in the market. In economics, demand is "the quantity of goods and services that will be bought for a given price over a period of time". For example if 10 Lakhs laptops are purchased in India during a year at an average price of Rs.25000/- then we can say that the annual demand for laptops is 10 Lakhs units at the rate of 25,000/-.

This chapter describes demand and supply which is the driving force behind a market economy. This is one of the most important managerial factors because it assists the managers in predicting changes in production and input prices. The manager can take better decisions regarding the kind of product to be produced, the quantity, the cost of the product and its selling price. Let us understand the concept of demand and its importance in decision-making.

2.2 Law of demand

Demand: Demand means the ability and willingness to buy a specific quantity of a commodity at

the prevailing price in a given period of time. Therefore, demand for a commodity implies the desire to acquire it, willingness and the ability to pay for it.

The quantity of a commodity demanded in given time period increases as its price falls, ceteris paribus. (I.e. other things remaining constant)

Demand schedule: a table showing the quantities of a good that a consumer is willing and able to buy at the prevailing price in a given time period. (Table – 1)
Table – 1: The Demand Schedule For Coke

Price of Coke (200 ml) In Rupees	Quantity Demanded
50	1
45	2
40	3
35	5
30	7
25	9
20	12
15	15
10	20

Demand Curve:

A curve indicating the total quantity of a product that all consumers are willing and able to purchase at the prevailing price level, holding the prices of related goods, income and other variables as constant.

A demand curve is a graphical representation of a demand schedule. The price is quoted in the 'Y' axis and the quantity demanded over time at different price levels is quoted in 'X' axis. Each point on the curve refers to a specific quantity that will be demanded at a given price. If for example the price of a 200 ml coke is Rs.10, this curve tells us that the consumer (the students in a class of 50) would purchase 20 units. When the price rises to Rs. 50 there was only one student would buy it. The demand curve, (DD) is downward sloping curve from left to right showing that as price falls, quantity demanded rises. This inverse relationship between price and quantity is called as the law of demand. When price changes, there is said to be a movement along the curve from point A to B.

Graph – Demand Curve
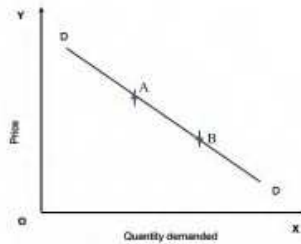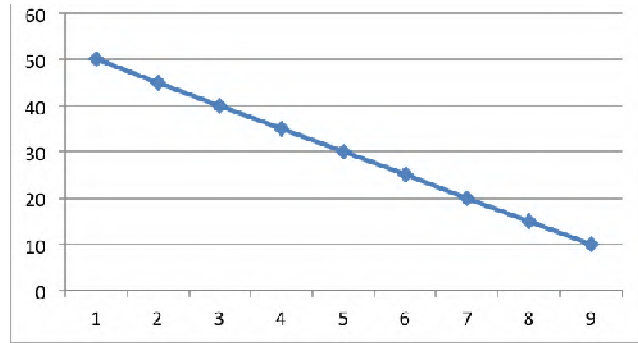
Shifts in Demand:

Shift of the demand curve occurs when the determinants of demand change. When tastes and preferences and incomes are altered, the basic relationship between price and quantity demanded changes (shifts). This shifts the entire demand curve upward (rightward) and is called as increase in demand because more of that commodity is demanded at that price. The downward shift (leftward) is called as decrease in demand. The new demand curves D_1D_1 and D_0D_0 can be seen in the Graph below.

Graph – Shift in Demand Curve
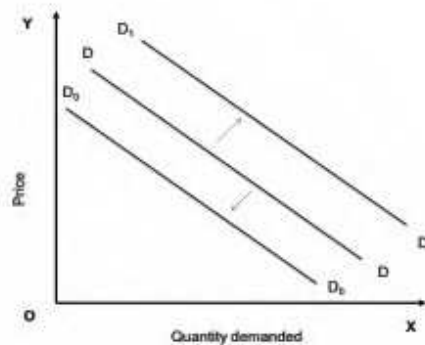
Therefore, we understand that a shift in a demand curve may happen due to the changes in the variables other than price. The movement a long a demand curve takes place (extension or contraction) due to price rise or fall.

Extension and Contraction of Demand curve:
When with a fall in price, more of a commodity is bought, then there is an extension of the demand curve. When lesser quantity is demanded with a rise in price, there is a contraction of demand.
Graph –Extension and Contraction in Demand Curve
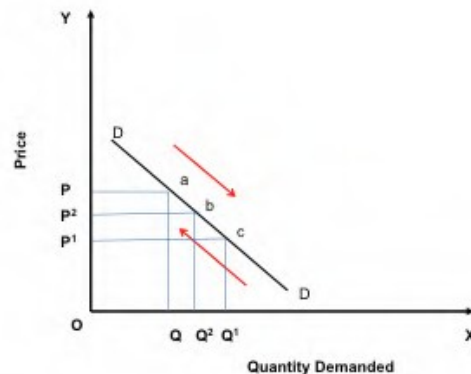
From the above graph we can understand that an increase in prices result in the contraction of demand. If the price increases from P^2 to P then the demand for the commodity fall from OQ^2 to OQ. Therefore the demand curve DD contracts from 'b' to 'a' on the other hand when there is a fall in price, it results in the extension of demand. Let us assume that the price falls from P^2 to P^1 then the quantity demanded OQ^2 increases to OQ^1 and the demand curve extends from point 'b' to 'c'

2.3 Demand function

is a function that describe how much of a commodity will be purchased at the prevailing prices of that commodity and related commodities, alternative income levels, and alternative values of other variables affecting demand.

Price is not the only factor which determines the level of demand for a good. Other important factor is income. The rise in income will lead to an increase in demand for a normal commodity. A few goods are named as inferior goods for which the demand will fall, when income rises. Another important factor which influences the demand for a good is the price of other goods. Other factors which affect the demand for a good apart from the above mentioned factors are: Changes in Population Changes in Fashion Changes in Taste Changes in Advertising

A change in demand occurs when one or more of the determinants of demand change and it is expressed in the following equation.

$Q_d X = f (P_x, P_r, Y, T, E_y, E_p, Adv....)$

Where,

$Q_d X$ = quantity demanded of good 'X' P_x = the price of good X

P_r = the price of a related good

Y   = income level of the consumer

T   = taste and preference of the consumers E_y = expected income

E_p = expected price

Adv   = advertisement cost

The above mentioned demand function expresses the relationship between the demand and other factors. The quantity demanded of commodity X varies according to the price of commodity (P_x), income (Y), the price of a related commodity (P_r), taste and preference of the consumers (T), expected income (E_y) and advertisement cost(Adv) spent by the organization.

2.4 Determinants of Demand

There are various factors affecting the demand for a commodity. They are:

1.   Price of the good: The price of a commodity is an important determinant of demand. Price and demand are inversely related. Higher the price less is the demand and vice versa.

2.   Price of related goods: The price of related goods like substitutes and complementary goods also affect the demand. In the case of substitutes, rise in price of one commodity lead to increase in demand for its substitute.

In the case of complementary goods, fall in the price of one commodity lead to rise in demand for both the goods.

3.   Consumer's Income: This is directly related to demand. A change in the income of the consumer significantly influences his demand for most commodities. If the disposable income increases, demand will be more.

4.   Taste, preference, fashions and habits: These are very effective factors affecting demand for a commodity. When there is a change in taste, habits or preferences of the consumer, his demand will change. Fashions and customs in society determine many of our demands.

5.   Population: If the size of the population is more, demand for goods will be more .The market demand for a commodity substantially changes when there is change in the total population.

6.   Money Circulation: More the money in circulation, higher the demand and vice versa.

7.   Value of money: The value of money determines the demand for a commodity in the market. When there is a rise or fall in the value of money there may be changes in the relative prices of different goods and their demand.

8.   Weather Condition: Weather is also an important factor that determines the demand for certaingoods.

9.   Advertisement and Salesmanship: If the advertisement is very attractive for a commodity, demand will be more. Similarly if the salesmanship and publicity is effective then the demand for the commodity will be more.

10.   Consumer's future price expectation: If the consumers expect that there will be a rise in prices in future, he may buy more at the present price and so his demand increases.

11. Government policy (taxation):High taxes will increase the price and reduce demand, while low taxes will reduce the price and extend the demand.

12. Credit facilities: Depending on the availability of credit facilities the demand for commodities will change. More the facilities higher the demand.

13. Multiplicity of uses of goods: if the commodity has multiple uses then the demand will be more than if the commodity is used for a single purpose.

Demand Distinctions: Types of Demand

Demand may be defined as the quantity of goods or services desired by an individual, backed by the ability and willingness to pay.

2.5 Types of Demand

1. Direct and indirect demand:(or) Producers' goods and consumers' goods: demand for goods that are directly used for consumption by the ultimate consumer is known as direct demand (example: Demand for T shirts). On the other hand demand for goods that are used by producers for producing goods and services. (example: Demand for cotton by a textile mill)

2. Derived demand and autonomous demand: when a produce derives its usage from the use of some primary product it is known as derived demand. (example: demand for tyres derived from demand for car) Autonomous demand is the demand for a product that can be independently used. (example: demand for a washing machine)

3. Durable and non durable goods demand: durable goods are those that can be used more than once, over a period of time (example: Microwave oven) Non durable goods can be used only once (example: Band-aid)

4. Firm and industry demand: firm demand is the demand for the product of a particular firm. (example: Dove soap) The demand for the product of a particular industry is industry demand (example: demand for steel in India)

5. Total market and market segment demand: a particular segment of the markets demand is called as segment demand (example: demand for Laptops by engineering students) the sum total of the demand for laptops by various segments in India is the total market demand. (example: demand for laptops in India)

6. Short run and long run demand: short run demand refers to demand with its immediate reaction to price changes and income fluctuations. Long run demand is that which will ultimately exist as a result of the changes in pricing, promotion or product improvement after market adjustment with sufficient time.

7. Joint demand and Composite demand: when two goods are demanded in conjunction with

one another at the same time to satisfy a single want, it is called as joint or complementary demand. (example: demand for petrol and two wheelers) A composite demand is one in which a good is wanted for several different uses. (example: demand for iron rods for various purposes)

8. <u>Price demand, income demand and cross demand:</u> demand for commodities by the consumers at alternative prices are called as price demand. Quantity demanded by the consumers at alternative levels of income is income demand. Cross demand refers to the quantity demanded of commodity 'X' at a price of a related commodity 'Y' which may be a substitute or complementary to X.

Price Demand: The ability and willingness to buy specific quantities of a good at the prevailing price in a given time period.

Income Demand: The ability and willingness to buy a commodity at the available income in a given period of time.

Market Demand: The total quantity of a good or service that people are willing and able to buy at prevailing prices in a given time period. It is the sum of individual demands.

Cross Demand: The ability and willingness to buy a commodity or service at the prevailing price of the related commodity i.e. substitutes or complementary products. For example, people buy more of wheat when the price of rice increases.

2.6 Exceptions demand curve
The demand curve slopes from left to right upward if despite the increase in price of the commodity, people tend to buy more due to reasons like fear of shortages or it may be an absolutely essential good.
The law of demand does not apply in every case and situation. The circumstances when the law of demand becomes ineffective are known as exceptions of the law. Some of these important exceptions are asunder.
1. Giffen Goods: Some special varieties of inferior goods are termed as Giffen goods. Cheaper varieties millets like bajra, cheaper vegetables like potato etc come under this category. Sir Robert Giffen of Ireland first observed that people used to spend more of their income on inferior goods like potato and less of their income on meat. After purchasing potato the staple food, they did not have staple food potato surplus to buy meat. So the rise in price of potato compelled people to buy more potato and thus raised the demand for potato. This is against the law of demand. This is also known as Giffen paradox.
2. Conspicuous Consumption / Veblen Effect: This exception to the law of demand is associated with the doctrine propounded by Thorsten Veblen. A few goods like diamonds etc are purchased by the rich and wealthy sections of society. The prices of these goods are so high that they are beyond the reach of the common man. The higher the price of the diamond, the higher its prestige value. So when price of these goods falls, the consumers think that the prestige value of these goods comes down. So quantity demanded of these goods falls with fall in their price. So the law of demand does not hold good here.

3. Conspicuous Necessities: Certain things become the necessities of modern life. So we have to purchase them despite their high price. The demand for T.V. sets, automobiles and refrigerators etc. has not gone down in spite of the increase in their price. These things have become the symbol of status. So they are purchased despite their rising price.

4. Ignorance:

A consumer's ignorance is another factor that at times induces him to purchase more of the commodity at a higher price. This is especially true, when the consumer believes that a high-priced and branded commodity is better in quality than a low-priced one.

5. Emergencies:

During emergencies like war, famine etc, households behave in an abnormal way. Households accentuate scarcities and induce further price rise by making increased purchases even at higher prices because of the apprehension that they may not be available. . On the other hand during depression, fall in prices is not a sufficient condition for consumers to demand more if they are needed.

6. Future Changes in Prices: Households also act as speculators. When the prices are rising households tend to purchase large quantities of the commodity out of the apprehension that prices may still go up. When prices are expected to fall further, they wait to buy goods in future at still lower prices. So quantity demanded falls when prices are falling.

7. Change in Fashion: A change in fashion and tastes affects the market for a commodity. When a digital camera replaces a normal manual camera, no amount of reduction in the price of the latter is sufficient to clear the stocks. Digital cameras on the other hand, will have more customers even though its price may be going up. The law of demand becomes ineffective.

8. Demonstration Effect: It refers to a tendency of low-income groups to imitate the consumption pattern of high income groups. They will buy a commodity to imitate the consumption of their neighbors even if they do not have the purchasing power.

9. Snob Effect: Some buyers have a desire to own unusual or unique products to show that they are different from others. In this situation even when the price rises the demand for the commodity will be more.

10. Speculative Goods / Outdated Goods / Seasonal Goods: Speculative goods such as shares do not follow the law of demand. Whenever the prices rise, the traders expect the prices to rise further so they buy more. Goods that go out of use due to advancement in the underlying technology are called outdated goods. The demand for such goods does not rise even with fall in prices.

11. Seasonal Goods: Goods which are not used during the off-season (seasonal goods) will also be subject to similar demand behaviour.

12. Goods In Short Supply: Goods that are available in limited quantity or whose future availability is uncertain also violate the law of demand. At the end of reading this lesson the reader will understand that demand analysis is an important part of economic analysis. The manufacturers produce and supply goods to meet demand. When the demand and supply is equal the economic conditions of the country is in equilibrium position.

2.8   Summary

The concepts of demand and supply are useful for explaining what is happening in the market place. Every market transaction involves an exchange and many exchanges are undertaken in a single day. The circular flow of economic activity explains clearly that every day

there are a number of exchanges taking place among the four major sectors mentioned earlier. This chapter describes demand and supply which is the driving force behind a market economy. This is one of the most important managerial factors because it assists the managers in predicting changes in production and input prices. The manager can take better decisions regarding the kind of product to be produced, the quantity, the cost of the product and its selling price. Let us understand the concept of demand and its importance in decision making.

2.9 Keywords

Demand   : The desire of consumers, clients, employers, etc. for a particular commodity, service, or other item.

Income   : Money received, especially on a regular basis, for work or through investments.

Market   : A regular gathering of people for the purchase and sale of provisions, livestock, and other commodities.

Supply   : A stock or amount of something supplied or available for use.

2.10 Self Assessment Questions
1) What is Law of demand explain it in detail manner?
2) Describe the Demand function?
3) Discuss the Determinants of demand?
4) List out the major objectives of the firm.
5) Discuss the Types of demand?
6) What are the exceptions in demand curve?

2.11 Further Readings

- Dean, Joel: Managerial Economics, PHI., New Delhi
- DN Dwidvedi, Managerial Economics, Vikas, New Delhi
- Trivedi M.L: Managerial Economics, Theory and Applications, TMH,ND
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- Dwivedi, D.N. Macro Economics: Theory and Applications, Tata McGraw Hill

- **Dr. B. Nagaraju**

LESSON – 3
ELASTICITY OF DEMAND

Learning objectives

After studying this lesson, the students are able to understand.

- Introduction
- Elasticity of Demand
- Price Elasticity
- The Determinants of Price Elasticity of Demand
- Income Elasticity
- Cross Elasticity
- Significance of Elasticity of Demand

Structure

3.1 Introduction

3.2 Elasticity of Demand

3.3 Price Elasticity

3.3.1 The Determinants of Price Elasticity of Demand

3.4 Income Elasticity

3.5 Cross Elasticity

3.6 Significance of Elasticity of Demand

3.7 Summary

3.8 Key words

3.9 Self Assessment Questions

3.10 Further Readings

3.1 Introduction

In economics, the term elasticity means a proportionate (percentage) change in one variable relative to a proportionate (percentage) change in another variable. The quantity demanded of a good is affected by changes in the price of the good, changes in price of other goods, changes in income and changes in other factors. Elasticity is a measure of just how much of the quantity demanded will be affected due to a change in price or income.

3.2 Elasticity of Demand

Elasticity of Demand is a technical term used by economists to describe the degree of responsiveness of the demand for a commodity due to a fall in its price. A fall in price leads to an increase in quantity demanded and vice versa.
The elasticity of demand may be as follows:
- Price Elasticity
- Income Elasticity and
- Cross Elasticity

3.3 Price Elasticity

The response of the consumers to a change in the price of a commodity is measured by the price elasticity of the commodity demand. The responsiveness of changes in quantity demanded due to changes in price is referred to as price elasticity of demand. The price elasticity of demand is measured by dividing the percentage change in quantity demanded by the percentage change in price.

Price Elasticity   = $\dfrac{\text{Proportionate change in the Quantity demanded}}{\text{Proportionate change in price}}$

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

$$= \frac{\Delta Q / Q}{\Delta P / P} = \frac{10}{20} = 0.5$$

ΔQ = change in quantity demanded ΔP = change in price

P = price

Q = quantity demanded

For example:

Quantity demanded is 20 units at a price of Rs.500. When there is a fall in price to Rs. 400 it results in a rise in demand to 32 units. Therefore the change in quantity demanded is 12 units resulting from the change in price of Rs.100.

The Price Elasticity of Demand is = 500 / 20 x 12/100 = 3

3.3.1 The Determinants of Price Elasticity of Demand

The exact value of price elasticity for a commodity is determined by a wide variety of factors. The two factors considered by economists are the **availability of substitutes** and **time**. The better the substitutes for a product, the higher the price elasticity of demand. The longer the period of time, the more the price elasticity of demand for that product. The price elasticity of necessary goods will have lower elasticity than luxuries.

The elasticity of demand depends on the following factors:

1. Nature of the commodity: The demand for necessities is inelastic because the demand does not change much with a change in price. But the demand for luxuries is elastic in nature.
2. Extent of use: A commodity having a variety of uses has a comparatively elastic demand.
3. Range of substitutes: The commodity which has more number of substitutes has relatively elastic demand. A commodity with fewer substitutes has relatively inelastic demand.
4. Income level: People with high incomes are less affected by price changes than people with low incomes.
5. Proportion of income spent on the commodity: When a small part of income is spent on the commodity, the price change does not affect the demand therefore the demand is inelastic in nature.

6. Urgency of demand / postponement of purchase: The demand for certain commodities are highly inelastic because you cannot postpone its purchase. For example medicines for any sickness should be purchased and consumed immediately.

7. Durability of a commodity: If the commodity is durable then it is used it for a long period. Therefore elasticity of demand is high. Price changes highly influences the demand for durables in the market.

8. Purchase frequency of a product/ recurrence of demand: The demand for frequently purchased goods are highly elastic than rarely purchased goods.

9. Time: In the short run demand will be less elastic but in the long run the demand for commodities are more elastic.

The following are the possible combination of changes in Price and Quantity demanded. The slope of each combination is depicted in the following graphs.

1.   Relatively Elastic Demand (E_d >1) a small percentage change in price leading to a larger change in Quantity demanded.
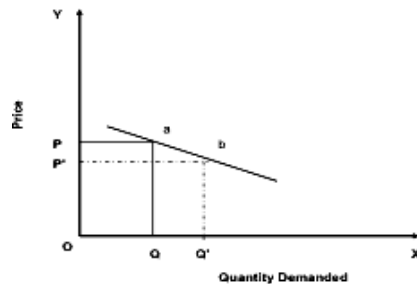
2.   Perfectly Elastic Demand (E_d = ∞) a small change in price will change the quantity demanded by an infinite amount.
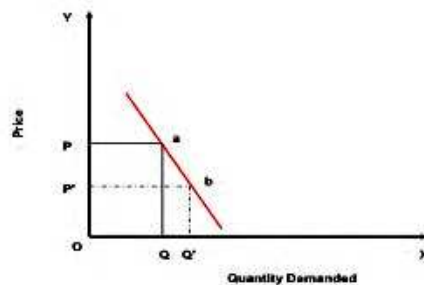
3.   Relatively Inelastic Demand (E_d < 1) a change in price leads to a smaller percentage change in quantity demanded.
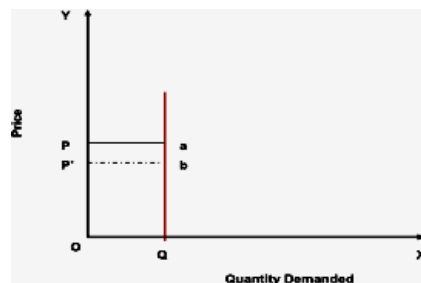
4. Perfectly Inelastic Demand ($E_d = 0$) the quantity demanded does not change regardless of the percentage change in price.
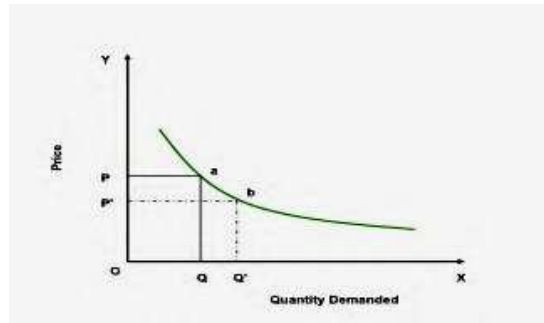
5. Unit Elasticity of Demand ($E_d = 1$) the percentage change in quantity demanded is the same as the percentage change in price that caused it.

3.4 Income Elasticity

Income elasticity of demand measures the responsiveness of quantity demanded to a change in income. It is measured by dividing the percentage change in quantity demanded by the percentage change in income. If the demand for a commodity increases by 20% when income increases by 10% then the income elasticity of that commodity is said to be positive and relatively high. If the demand for food were unchanged when income increases, the income elasticity would be zero. A fall in demand for a commodity when income rises results in a negative income elasticity of demand.

The following are the various types of income elasticity:

Zero Income Elasticity: The increase in income of the individual does not make any difference in the demand for that commodity. ($Ei = 0$)

Negative Income Elasticity: The increase in the income of consumers leads to less purchase of those goods. ($Ei < 0$).

Unitary Income Elasticity: The change in income leads to the same percentage of change in the demand for the good. ($Ei = 1$).

Income Elasticity is Greater than 1: The change in income increases the demand for that commodity more than the change in the income. ($Ei > 1$).

Quantity demanded

Quantity demanded
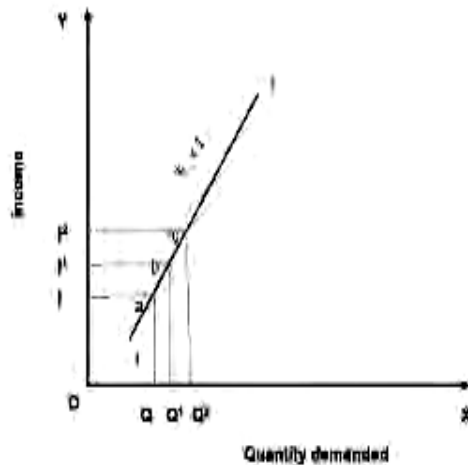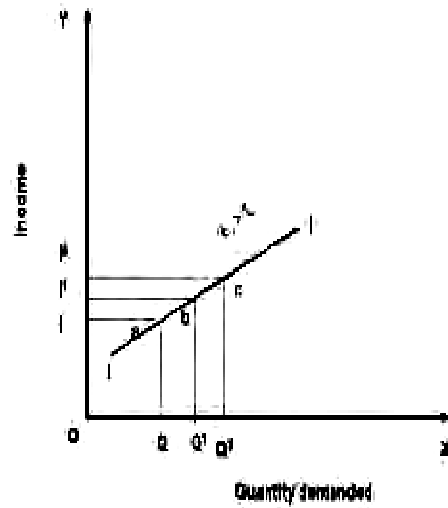
Income Elasticity is Less than 1: The change in income increases the demand for the commodity but at a lesser percentage than the change in the Income. (Ei < 1).The positive income elasticity of demand can be classified as unity, more than unity and less than unity. We can understand from the above graphs that the product which is highly elastic in nature will grow faster when the economy is expanding. The performance of firms having low income elasticity on the other hand will be less affected by the economic changes of the country.
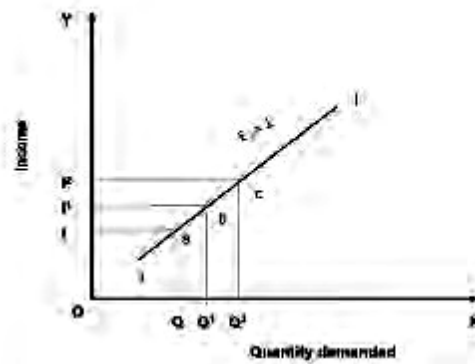
With a rise in consumer's income, the demand increases for superior goods and decreases for inferior goods and vice versa. The income elasticity of demand is positive for superior goods or normal goods and negative for inferior goods since a person may shift from inferior to superior goods with a rise in income.
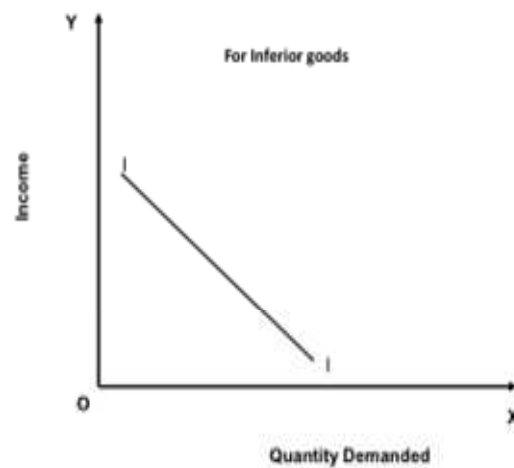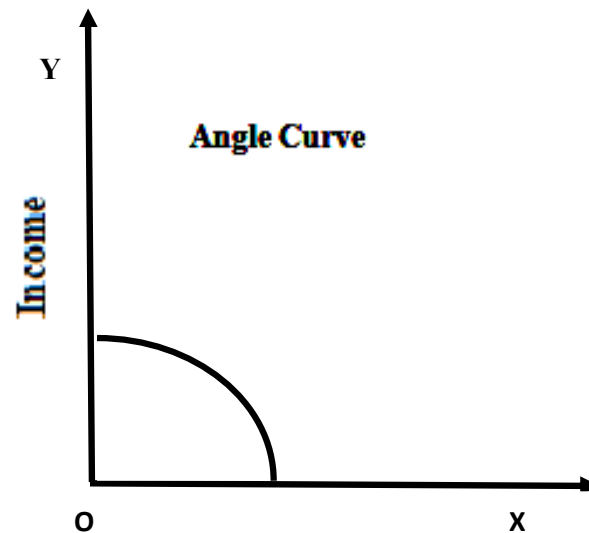
3.5 Cross Elasticity

The quantity demanded of a particular commodity varies according to the price of other commodities. Cross elasticity measures the responsiveness of the quantity demanded of a commodity due to changes in the price of another commodity. For example, the demand for tea increases when the price of coffee goes up. Here the cross elasticity of demand for tea is high. If two goods are substitutes then they will have a positive cross elasticity of demand. In other words, if two goods are complementary to each other then negative income elasticity may arise.

The responsiveness of the quantity of one commodity demanded to a change in the price of another good is calculated with the following formula.

$$\text{A Ec} \quad = \quad \frac{\text{\% Change in demand for commodity}}{\text{\% Change in price of commodity B}}$$

If two commodities are unrelated goods, the increase in the price of one good does not result in any change in the demand for the other goods. For example, the price fall in Tata salt does not make any change in the demand for Tata Nano.

3.6 Significance of Elasticity of Demand

The concept of elasticity is useful for the managers for the following decision-making activities
1) In production i.e. in deciding the quantity of goods to be produced
2) Price fixation i.e. in fixing the prices not only on the cost basis but also on the basis of prices of related goods.
3) In distribution i.e. to decide as to where, when, and how much etc.
4) In international trade i.e. what to export, where to export
5) In foreign exchange
6) For nationalizing an industry
7) In public finance

3.7 Summary

The reader will understand that elasticity of demand is an important. When the demand and supply is equal the economic conditions of the country is in equilibrium position. You can analysis the income elasticity and cross elasticity

3.8 Keywords

Elasticity : The ability of an object or material to resume its normal shape after being stretched or compressed; stretchiness

Price : The amount of money expected, required, or given in payment for something.

Demand : The desire of consumers, clients, employers, etc. for a particular commodity, service, or another item.

Variable : Not consistent or having a fixed pattern; liable to change.

Quantity : The amount or number of a material or abstract thing not usually estimated by spatial measurement

Substitute : Replace (someone or something) with another.

Income : Money received, especially on a regular basis, for work or through investments.

Commodity: A raw material or primary agricultural product that can be bought and sold, such as copper or coffee

3.9 Self-assessment questions

1) Discuss the Elasticity of Demand?
2) Explain the Price Elasticity of demand?
3) Explicate the Determinants of Price Elasticity of Demand?
4) Define and explain the income elasticity?
5) Define and explain the Cross elasticity?
6) What are the Significance of Elasticity of Demand?

3.10 Further readings

- Dean,Joel: Managerial Economics, PHI., New Delhi
- DN Dwidvedi, Managerial Economics, Vikas, New Delhi
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LESSON - 4
DEMAND FORECASTING

Learning objectives

After Studying this lesson, the students is able to understand.

- Short run and long run decisions
- Method of Forecasting
- Demand Forecasting

Structure

4.1 Introduction

4.2 Short run and long run decisions

4.3 Method of forecasting

4.4 Demand Forecasting

4.5 Summary

4.6 Self-Assessment Questions

4.7 Further Readings

4.1 Introduction

All organizations operate in an atmosphere of uncertainty but decisions must be made today that affect the future of the organization. There are various ways of making forecasts that rely on logical methods of manipulating the data that have been generated by historical events. A forecast is a prediction or estimation of a future situation, under given conditions. Demand forecast will help the manager to take the following decisions effectively.

4.2 Short run and long run decisions

The major short run decisions are:	The major long run decisions are:
- Purchase of inputs - Maintaining of economic level of inventory - Setting up sales targets - Distribution network - Management of working capital - Price policy - Promotion policy	- Expansion of existing capacity - Diversification of the product mix - Growth of acquisition Change of location of plant Capital issues - Long run borrowings Manpower planning

The steps to be followed:

- Identification of objectives
- Nature of product and market
- Determinants of demand
- Analysis of factors
- Choice of technology
- Testing the accuracy

4.3 Method of forecasting

- Accuracy
- Plausibility
- Durability
- Flexibility
- Availability

The following are needed for demand forecasting:
- Appropriate production scheduling
- Suitable purchase policy
- Appropriate price policy
- Setting realistic sales targets for salesmen
- Forecasting financial requirements
- Business planning
- Financial planning
- Planning man-power requirements

To select the appropriate forecasting technique, the manager/forecaster must be able to accomplish the following:
1. Define the nature of the forecasting problem
2. Explain the nature of the data under investigation
3. Describe the capabilities and limitations of potentially useful forecasting techniques.
4. Develop some predetermined criteria on which the selection decision can be made.

4.4 Demand Forecasting Methods

1. Survey of buyers' intension
2. Delphi method
3. Expert opinion
4. Collective opinion
5. Naïve model
6. Smoothing techniques
7. Time series / trend projection
8. Controlled experiments
9. Judgmental approach

Time Series / Trend Projection

The linear trend is the most commonly used method of time series analysis. The following are various trend projections used under various circumstances.

linear trend	$Y =$	$a + b\,X$
quadratic trend	$Y =$	$a + bX + cX^2$
cubic trend	$Y =$	$a + bX + cX^2 + dX^3$
exponential trend	$Y =$	$a\,e^{\,b/x}$
double log trend	$Y =$	$a\,X^b$

Linear Trend Equation:

$Y = a + b\,X$ $Y =$ demand

$X =$ time period

a,b constant values representing intercept and slope of the line. To calculate Y for any value of X we have to solve the following equations,

(i)   and (ii). We can derive the values of 'a' and 'b' through solving these equations and by substituting the same in the above given linear trend equation we can forecast demand for 'X' time period.

$$\sum Y \;=\; na + b\sum X \qquad\qquad \text{----- (i)}$$
$$\sum XY \;=\; a\sum X + b\sum X^2 \qquad\qquad \text{----- (ii)}$$

Example:

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Sales	22734	24731	31489	44685	55319	91021	146234	107887	127483	97275

Estimate the sales for 2012, 2015 and fit a linear regression equation and draw a trend line.

Year	X	Sales (Y)	XY	X^2
2002	1	22734	22734	1
2003	2	24731	49462	4
2004	3	31489	94467	9
2005	4	44685	178740	16
2006	5	55319	276595	25
2007	6	91021	546126	36
2008	7	146234	1023638	49
2009	8	107887	863096	64
2010	9	127483	1147347	81
2011	10	97275	972750	100
	$\sum X = 55$	$\sum Y = 748858$	$\sum XY = 5174955$	$\sum X^2 = 385$

$$\sum Y \qquad = \qquad na + b\sum X \qquad\qquad ----(i)$$
$$\sum XY \qquad = \qquad a\sum X + b\sum X^2 \qquad\qquad ----(ii)$$

$$748858 \qquad = 10a + 55b \qquad ----(i)$$

$$5174955 \qquad = 55a + 385\, b \qquad ----(ii)$$

Equation (i) x 3 $\quad 5242006 \qquad = 70a + 385\, b \qquad ----(iii)$

Equation (iii) – (ii) $\quad 67051 \qquad = 15a$

$$\mathbf{4470.07} \qquad = \qquad \mathbf{a}$$

Substitute value of 'a' in equation (i)

$$748858 \qquad\qquad = 44700 + 55\, b$$
$$55b \qquad\qquad = 748858 - 44700$$

$$\mathbf{b} \qquad = \qquad \mathbf{12802.8}$$

$$Y \qquad = \qquad a + b\, X$$
$$Y \qquad = \qquad 4470.07 \quad + \quad 12802.8\, X$$

Sales for **2012** $\quad = \quad 4470.07 \quad + \quad 12802.8\,(11) \qquad = \qquad \mathbf{145300.87}$

Sales for **2015** $\quad = \quad 4470.07 \quad + \quad 12802.8\,(14) \qquad = \qquad \mathbf{183709.27}$
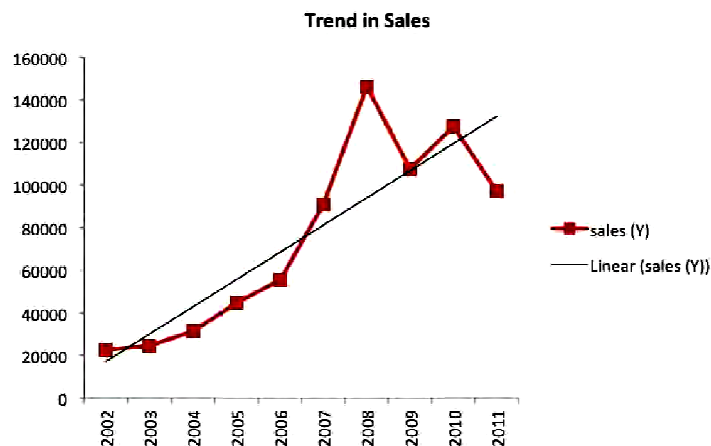
Techniques that should be used when forecasting **stationary series** (the demand patterns influencing the series are relatively stable) include naïve method, simple average method, moving average, and autoregressive moving average (ARMA) and Box-Jenkins method.

When forecasting **trend series** then, moving averages, simple regression, growth curves, exponential models and autoregressive integrated moving average (ARIMA) models and Box-Jenkins methods can be used.

For **seasonal series** census X-12, winter's exponential smoothing, multiple regression and ARIMA models can be used.

When forecasting **cyclical series** econometric models, economic indicators, multiple regression and ARIMA models can be used.

The major forecasting techniques are: naïve, simple average, moving averages, exponential smoothing, linear exponential smoothing, quadratic exponential smoothing, seasonal exponential smoothing, adaptive filtering, simple regression, multiple regression, classical decomposition, exponential trend models, S-curve fitting, Compertz models, growth curves, census X-12, Box-Jenkins, leading indicators, econometric models and time series multiple regression may be used.

The causal forecasting models (simple, multiple regression analysis) will be useful to decide the production, personnel hiring, and facility planning in the short run. In Time series forecasting models like decomposition is suitable to decide the new plant, equipment planning. Moving average and exponential smoothing is used for operations such as inventory, scheduling and pricing decisions. The autoregressive models, Box-Jenkins techniques are used to forecast price, inventory, production, stock and sales related decisions. Neural network method is for forecasting applications in development phase of the organization.

Apart from the above-mentioned statistical methods the **survey methods** are also commonly used. They are:

1. **Complete Enumeration Method:** the survey covers all the potential consumers in the market and an interview is conducted to find out the probable demand. The sum of all gives the total demand for the industry. If the number of customers is too many this method cannot be used.

2. **Sample Survey Method:** the complete enumeration is not possible always. The forecaster can go in for sample survey method. In this method, only few (a sample) customers are selected from the total and interviewed and then the average demand is estimated.

3. **Expert's Opinion:** the experienced people from the same field or from marketing agents can also be taken into consideration for collecting information about the future demand.

The above discussed qualitative and quantitative methods are commonly used to forecast the future demand and based on this information firms will take production decision.

4.5 Summary
All organizations operate in an atmosphere of uncertainty but decisions must be made today that affect the future of the organization. There are various ways of making forecasts that rely on logical methods of manipulating the data that have been generated

by historical events. A forecast is a prediction or estimation of a future situation, under given conditions. Demand forecast will help the manager to take the following decisions effectively.

The causal forecasting models (simple, multiple regression analysis) will be useful to decide the production, personnel hiring, and facility planning in the short run. In Time series forecasting models like decomposition is suitable to decide the new plant, equipment planning. Moving average and exponential smoothing is used for operations such as inventory, scheduling and pricing decisions. The autoregressive models, Box-Jenkins's techniques are used to forecast price, inventory, production, stock and sales related decisions. Neural network method is for forecasting applications in development phase of the organization.

4.6 Keywords

Firm   : Any company that seeks to make a profit by manufacturing or selling products or services – or both – to consumers.

Entities   : An organization created by one or more individuals to carry out the functions of a business, and that maintains a separate legal existence for tax

Inventory   : All the items, goods, merchandise, and materials held by a business for selling in the market to earn a profit.

Production   : The process of combining various material inputs and immaterial inputs (plans, know-how) in order to make something for consumption (output).

4.7 Self-assessment questions

1) What is meant by demand forecasting? Why is it important for the managers of business firm?
2) Discuss the steps to be followed during demand forecast
3) Why do business entities have to forecast demand?
4) Mention the major criteria to choose a suitable forecasting method
5) Explain the consumer survey method and discuss the merits and demerits of complete enumeration method and sample survey method.
6) Exercises:

(a) The demand for petrol rises from 500 to 600 Barrels when the price of a particular scooter is reduced from Rs. 25000 to Rs.22000. Find out the cross elasticity of demand for the two. What is the nature of their relationship?

(b) A company has the following demand equation $Q = 1000 – 3000 P + 10 A$

Q = Quantity demanded P = Product Price

A = Advertisement expenditure Assume that $P = 3$ and $A = 2000$

- Suppose the firm drops the price to Rs. 2.50 would this be beneficial.
- Suppose the firm raises the price to Rs. 4.00 while increasing its advertisement expenditure by 100 would this be beneficial?

(c) Try to collect 10 to 20 years sales details of a company and forecast their demand for the next year and find out the demand for the same after 5 years from now. Fit the linear equation and draw the trend line. And suggest short term and long term decisions to be taken in the organization to meet the future demand.

(d)   The demand for petrol rises from 500 to 600 Barrels when the price of a particular scooter is reduced from Rs. 25000 to Rs.22000. Find out the cross elasticity of demand for the two. What is the nature of their relationship?

(e)   A company has the following demand equation Q = 1000 – 3000 P + 10 A

Q = Quantity demanded P = Product Price

A = Advertisement expenditure Assume that P = 3 and A = 2000

- Suppose the firm drops the price to Rs. 2.50 would this be beneficial.
- Suppose the firm raises the price to Rs. 4.00 while increasing   its advertisement expenditure by 100 would this be beneficial?

Explain

(f)   Try to collect 10 to 20 years sales details of a company and forecast their demand for the next year and find out the demand for the same after 5 years from now. Fit the linear equation and draw the trend line. And suggest short term and long-term decisions to be taken in the organization to meet the future demand.

4.8 Further readings

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Dr. B. Nagaraju

UNIT - II
Lesson –5
LAW OF VARIABLE PROPORTIONS

OBJECTIVES:

After studying this lesson, the students are able to understand.
- ✓ Law of variable proportion/Diminishing marginal product.
- ✓ Assumptions of diminishing marginal product.
- ✓ Causes for the Operation of the Law of Diminishing Returns
- ✓ The Law of Diminishing Returns and Business Decisions
- ✓

STRUCTURE

5.1 Introduction:

The basic objective of a business firm is to make maximum possible profit. Production is done to make profit. Production in business sense means the creation of those goods and services which have exchange value. Production thus involves three things. 1) It requires some sort of activity, physical and mental. Thus, a lawyer, whose activity is mental and farmer, whose activity is physical, are producers. 2) The activity must be for the satisfaction of other people wants. If a farmer produces rice for self-consumption, it is not a production activity. 3) The other people's wants must be satisfied through the process of exchange. Thus, if a doctor does service without receiving fee in exchange, his service cannot be treated as production.

Production function shows the relationship between a given quantity of inputs and its maximum possible output. But the laws of production deal with the relationship between additional inputs and additional outputs. They explain the relationship in the form of:
1. The law of variable proportions of the law of diminishing marginal returns,
2. The law of returns to scale.

5.2 What is the Law of Diminishing Marginal Product or Law of Variable Proportions?

The law of variable proportions explains the input-output relation when the output is increased by putting more and more units of one variable unit. This is a short-run phenomenon. Some of the inputs are fixed in the short-run. Thus, in the short-run any increase in production is possible only by increasing the variable input against a given quantity of fixed input. When variation is made only in one factor keeping the other factors fixed, the proportion between the fixed factors and variable factor is varied.

This law studies the effect of variations in factor proportions on output. Hence it is called *the Law of Variable Proportions.* The variations in inputs lead to a disproportionate increase in output. More and more units of variable factor when applied cause an increase in output but after a point the extra output will grow less and less. The law which brings out this tendency in production is also known as *the Law of Diminishing Returns*.

The law of diminishing returns reveals that any attempt to increase output by increasing only one factor finally faces diminishing returns. The law states that when some factors remain constant if more and more units of a variable factor are introduced the production may increase initially at an increasing rate, but after a point it increase only at a diminishing rate. Land and capital remain fixed in the short-run whereas labour variable.

The following hypothetical numerical table illustrates the operation of the law of diminishing returns.

Table - A

Number of Workers	Total Product (TP)	Average Product (AP)	Marginal Product (MP)
1	10	10	10
2	22	11	12
3	36	12	14
4	52	13	16
5	66	13.2	14
6	76	12.7	10
7	82	11.7	6
8	85	10.6	3
9	85	9.5	0
10	83	8.3	-2

The above table illustrates several important features of typical production function with one variable input. Here both average product (AP) and marginal product (MP) first rise, reach a maximum and then decline. Average product is the product for one unit of labour. It is arrived at by dividing the total product (TP) by the number of workers. Marginal product is the additional product resulting from additional labour. It is found out by dividing the changes in total product by the changes in the number of workers. The total output increases at an increasing rate till the employment of the 4th worker. The rate of increase in the marginal product reveals this. Any additional labour employed beyond the 4th labour clearly faces the

operation of the law of diminishing returns. The maximum marginal product is 16th after which it continues to fall, ultimately, becoming negative.
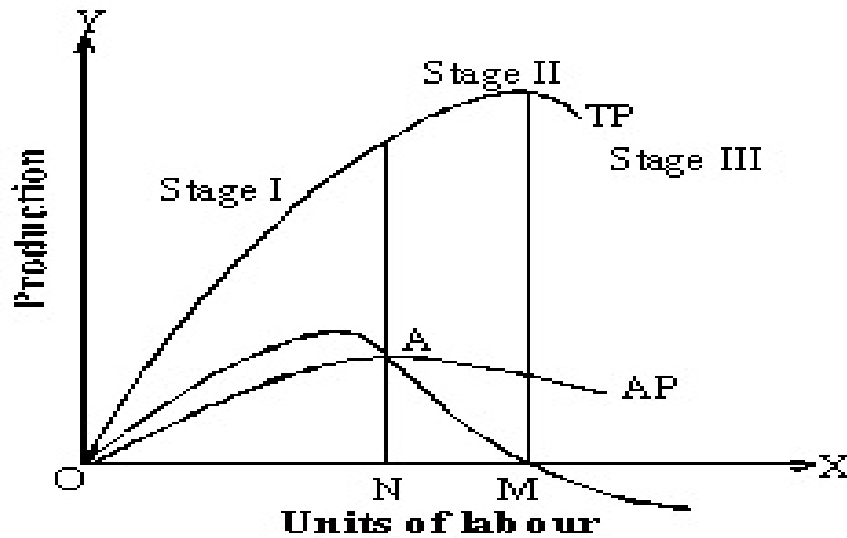
The above figure makes a graphical representation of the information given in the above table. OX axis represents the units of labour and OY axis represents the units of output. The total output (TP) curve has a steep rise till the employment of the 4th labour (point N). This shows that the output increases at an increasing rate till the employment of the 4th labour. The TP curve goes on increasing but only at a diminishing rate (point M). Finally, the TP curve shows a downward trend.

The law of diminishing marginal returns operates in three stages.

Stage 1: In this stage total product increases at an increasing rate. The marginal product in this stage increases at an increasing rate resulting in a greater increase in total product. The average product also increases. This stage continues upto the point where average product is equal to marginal product. The law of increasing returns is in operation at this stage. *The Law of Diminishing returns starts operating from the second stage onwards.*

Stage 2: At this second stage total product continues to increase but at a diminishing rate. As the marginal product in this stage starts falling the total product increases only at a diminishing rate. The average product also declines. The second stage comes to an end where total product becomes maximum and marginal product becomes zero.

Stage 3: The Marginal Product becomes negative in the third stage. So, the total product also declines. The average product continues to decline.

5.3 Assumptions of the Law of Diminishing Returns

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

1. **The production technology remains constant**
   It is assumed that no improvement is made in the method and techniques of production followed so far. If an improved technology is adopted then the increase in returns may be more than proportionate to the increase in the variable factor.
2. **The variable factor is homogeneous**
   The law assumes that all the units of the variable factor are identical i.e., exactly similar to each other. If the next additional unit applied is bigger in size or more productive than the preceding units, then the output obtained out of this also may increase.

3. **Anyone factor remains constant**
   All factors of production need to be increased. But one factor of production remains constant or fixed. So, increase in production can be attempted only with the variable factor.
4. **The fixed factor is indivisible**
   The fixed factor remains constant. Its capacity cannot be divided and used for some other production.

5.3 Causes for the Operation of the Law of Diminishing Returns

1. **Wrong combinations of inputs**
   If the fixed factor is not fully utilised an increased application of the variable factor enables a fuller utilisation of the fixed factor. More and more units of the variable factor say labour, makes possible labour specialisation at a greater rate. The specialisation of labour increases efficiency. Hence the marginal productivity i.e. the productivity of each additional worker goes on increasing till it reaches an optimum combination of the fixed factor and the variable factor. Any further application of the variable factor beyond the optimum stage brings down the marginal return. Now the variable factor, labour is too much in relation to the fixed factor. The capital-labour rate goes on decreasing. The additional workers will be having only less and less tools to work with, thus reducing the efficiency of the additional worker. Thus, the operation of the law of diminishing returns exists.
2. **Scarcity of certain factors**
   Certain factors like land and capital are scarce in the short-run. An increase in output in the short-run is possible only by increasing the variable inputs. This results in diminishing marginal productivity of the variable factor.
3. **Imperfect substitutes**
   One factor of production can substitute another only to a limited extent. For example, in the construction of building capital cannot substitute labour fully.

5.4 The Law of Diminishing Returns and Business Decisions

1. The diagrammatic presentation of the law helps to find out the rational and irrational levels of operation.
2. It also helps to find out the quantum of production and the optimum input combination. In the first stage the existing fixed factors like machinery etc., are not fully utilised. The labour-capital ratio is very low. The firm is not performing at its fully capacity. In the third stage labour introduced in relation to capital is very high. The labour-capital ratio is so high that it even causes a decline in total output. Likewise, a firm working in third stage may reduce labour and increase output. Second stage is the rational stage of operation.
3. The marginality principle helps to decide the number of workers to be employed against the fixed factors. The manager will go on employing workers till the marginal revenue productivity (MRP) of labour equals the marginal wage rate. Marginal revenue productivity is the value of product resulting from the marginal unit of labour.

5.5 Summary

The basic objective of a business firm is to make maximum possible profit. Production is done to make profit. Production in business sense means the creation of those goods and services which have exchange value. Production function shows the relationship between a given quantity of inputs and its maximum possible output. But the laws of production deal with the relationship between additional inputs and additional outputs.

5.7 Keywords
The law of variable proportions: The input-output relation when the output is increased by putting more and more units of one variable unit.
Marginal product is the additional product resulting from additional labour.

5.8 Self-Assessment Questions
1. Explain the law of variable proportions
2. Explain the law of variable proportions. How does it help the business manager in decision-making?

5.9 Further Readings
1. Managerial Economics by P.C. Thomas, Kalyani Publishers, 2015
2. Managerial Economics-Principles and Worldwide Applications by Dominick Salvatore, Oxford Publications 6th Edition
3. Managerial Economics by H.Craig Petersen, W.Chris Lewis, and Sudhir K.Jain by Pearson Education 2010.
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LESSON – 6
THEORY OF THE FIRM

OBJECTIVES: After studying this lesson, the students are able to understand.
- ✓ Business Goals.
- ✓ Characteristics of Business.
- ✓ Managerial economic side of business
- ✓ Theory of the firm

STRUCTURE

6.1 Introduction

A firm is an organisation that combines and organises resources for the purpose of producing goods and/or services for sale. There are millions of firms in India which include proprietorships (owned by one individual), partnerships (owned by two or more individuals) and corporations (owned by stockholders). Firms producing more than 70 per cent of all goods and services consumed in India. The firms that produce identical products are collectively called industry. The primary objective of a business concern is the maximisation of its shareholders' wealth. Each firm has to work under certain restrictions like licensing rules, company law, pollution control regulations etc. Micro-economic theory deals with those concepts that help achieving the target of maximisation of wealth. The object of a business concern of the day is not merely limited to wealth maximisation. Now business firms consider their commitment to the society, to their workers also as other objective of the firm.

6.2 Business Goals

Goals or objectives are the ends which a firm strives to achieve through its existence and operations. Usually, a business concern has more than one objective. Each firm has to face many restrictions in its attempt to win its goals. Goals vary with firms. They may vary with the passage of time also. The various goals are:
1. Profit Making
2. Growth of Business

3. Power
4. Employee satisfaction and development
5. Quality products and services
6. Market leadership
7. Challenging
8. Joy of creation
9. Service to society

6.2.1 PROFIT

Sales revenue minus cost is profit. Making of profit is the primary objective of any business concern. Profit is the main incentive or motivator of a businessman and it sustains and retains him in the business. Profit gives the guidelines and justification for judicious allocation of resources. Profit spells the productivity of a business concern and it is the base for growth, expansion and survival. But profit is not an end in itself; rather it is only the beginning of many future activities of a firm. It is the seed money for more products, more plants, more dividends, more tax payments, more jobs and more opportunities like mergers, consolidations, take-overs etc. Profit should promote the well-being of all-the rich and the poor, privileged consumers and producers and stakeholders.

6.2.2 GROWTH

Growth is essential for the survival of a business. A stagnant firm is one with some basic problems. So, growth is another important objective of a firm. Growth may be in different forms.

a. **By adding more products or markets**
   The growth of Samsung was manifested by adding more products like washing machines, refrigerators, telephones, cellular phones, desktops, laptops etc to its audio-visual products. LG also has achieved the same type of growth and expansion.
   Reid & Tailor textiles aimed at growth by widening its market in association with regional distributors.

b. **By diversifying into new areas**
   When a firm cannot grow by increasing the production of its existing products it shifts to products of different lines. Reliance, for example, attained growth in another form by adding mobile network services-Jio to its existing communication, audio-visual product-line.

c. **By integration-forward and backward**
   Bombay dyeing, which was once limited to production of textiles, got into distribution line also by starting exclusive showrooms. Thereby they make forward integration in their business. Later they brought out ready-mades and other finished form of clothing which the consumers readily use, thus making advancements in forward integration. Reliance Textiles, J.K. Synthetics etc., also have gone for forward integration. Aravind Mills have brought out for consumers readily usable denims under the labels 'Ruf and Tuf' and 'New Port' which helped to increase their profit considerably during

1995s.Modern Mills went for backward integration by stepping into production and processing of raw materials needed for their mills.

d. By increasing market share

Britannia increased its market share by re-launching the products. Flipkart wants to increase its market share by merge with eBay.

e. Expanding markets

Market expansion may be done in two ways

     i)   By expanding geographical segment;

     ii)   By expanding consumer segment.

     Coca-Cola was initially introduced in a few states. They are now expanding their market by reaching other states, and nations, thus expanding their market geographically.With the introduction of Bajaj Sunny, Bajaj Auto could reach another segment of consumers especially ladies. This helped them increase their market share.

6.2.3 POWER

Businessmen can exercise great power as they have vast reserve of money, materials, men and know-how at their disposal. Many businessmen are interested in exercising their power for the good of the society.

6.2.4 EMPLOYEE SATISFACTION

Business with great vision considers the wellbeing of their workers and their development as one of the main objectives of the firm. It was hoped that with increase in the degree of automation labour will gain least importance. On the contrary it can be observed in the present-day business world that quality labour is gaining greater importance. Business houses are building up separate human resource development departments.

6.2.5 QUALITY PRODUCTS AND SERVICES

Providing quality products and services is another objective of the firm. Quality products survive time and competition and remain in the market for long. Products like Horlicks, Lifebouy, Toyota, TCS etc., are some examples. With the entry of more and more multinationals into the Indian market products of near quality are made available thus making competition more rigorous. So, business houses can establish their identity only by providing better products and services. So, the present-day business houses have identified quality products better services as one of their objectives.

6.2.6 MARKET LEADERSHIP

Gaining leadership in the market may be an objective of the firm. It may be made possible by offering the product at very low price, by bringing novel advertisements, by introducing novelty in their products, developing wider distribution networks, offering products at different price ranges, catering to different segments of the society etc. Maruti Suzuki emerged as market leader during 1990s by offering products at different price ranges and by strengthening its distribution and service network. Tata Automobiles Ltd. emerged as the market leader in light commercial vehicles by its product range catering to different users.

6.2.7 CHALLENGING

Business offers great challenges to aspiring people. A successful business is the proof of the calibre of a businessman. Many businessmen find pleasure in encountering challenges and risks involved in business and in overcoming them successfully.

6.2.8 JOY OF CREATION

The businessman converts the new ideas and opportunities into products and services. He is all the more content when he finds product acceptable to his prospective customers.

6.2.9 SERVICE TO SOCIETY

Business is an integral part of society and it derives benefits out of the society. Thus business, in turn, is committed to the society. Some of the obligations of business towards the society are:

       i.   Providing quality goods at reasonable prices
       ii.   Providing employment
       iii.   Promoting cultural and social activities
       iv.   Supporting the less privileged and weaker sections of the society.

6.3   Characteristics of Today's Business

6.3.1   Research and Development:

The hallmark of modern business is change. Modern business is highly dynamic. Modern firms are spending more on marketing research to study the mind and requirements of the consumers. Research and Development (R&D) is another strong area in the firm. The R&D is engaged in constant search to find out new technologies and new products that can be appealing to their customers.

6.3.2   Bigness:

Modern business is run on a large scale. As labour is expensive modern business depends more on machines. Mechanisation requires huge initial investment and this can be justified only with huge turnover. Mass production is possible with machines. Business houses concentrate on mass marketing strategies to take care of the goods produced at mass scale. Mass production and mass marketing bring in the advantages of large-scale operation. This helps to reduce cost.

6.3.3   Diversification:

The growth of modern business firms is mostly in the form of diversification. They step into different lines of products which are not connected to each other. In its attempt to grow the Indian Tobacco Company has stepped into hotel industry and agro based industry.

Product proliferation is another characteristic. Product proliferation implies introduction of different brands in the same product-line. In addition to Vigil and Cinthol soaps Godrej has come out with Ganga, Evita, Protex etc. Hindustand Lever (Now it became UniLiver) has come out with different versions of Lifebouy like original Lifebouy, Lifebouy plus and Lifebouy Gold along with other soaps like Rexona, Liril etc.

6.3.4 Globalisation:

Modern business concerns, irrespective of whether it is small or large, aim not only at home markets but also international markets. The radical changes in the international business environment, massive production technology introduced, explosion in information technology, uninterrupted flow of capital and technology among countries, growing popularities of different media, advanced forms of transportation, political changes experienced in the international

scenario etc., has brought countries closer. Mass production units installed turn profitable only if they find a wider market by entering the global market.

6.3.5 State-of-the-art Technology

New business houses go for the most modern technology. Rapid changes are taking place in the production technology field and these technologies are easily made available in any part of the world within no time, through collaborations, buy-back schemes, outright purchases direct investment etc.New technology helps reduce cost and labour as well. In order to penetrate into the highly competitive market new firms opt for these cost-efficient production techniques. The new firms, even when they opt for the most modern techniques, are under the threat of becoming outdated within no time. So, they are not ready to compromise with a relatively poor technology.

6.3.6 Information Technology:

Present day business world opts for the most modern technology. Introduction of computer and mobile internet and other modern electronic devices has made it possible. The computer networking and the information superhighway brought in radical changes in information technology. Five hundred hours of internet facility is available to a business house at a nominal rate Rs. 25000 which gives them access to any information in any part of the world. The constant cut in the prices of computers and regular updating in both hardware and software makes computer appealing to any business concern whether it is small or big.

6.3.7 Competition:

Competition is another feature of the present-day business world. Modifications and liberalisations in licensing policies, abolition of subsidies and protected markets and free entry of foreign investors has increased the degree of competition. So, businessmen are alwaysunder pressure to improve the quality and reduce cost. Only competitive firms, bothquality wise and cost wise can survive.

6.4 Summary

The primary objective of a business concern is the maximisation of its shareholders' wealth. Each firm has to work under certain restrictions like licensing rules, company law, pollution control regulations etc. Micro-economic theory deals with those concepts that help achieving the target of maximisation of wealth. Goals or objectives are the ends which a firm strives to achieve through its existence and operations. Making of profit is the primary objective of any business concern. Profit is the main incentive or motivator of a businessman and it sustains and retains him in the business.

6.5 Keywords

Diversification: the process of a business enlarging or varying its range of products or field of operation.

Globalization: Globalization is the word used to describe the growing interdependence of the world's economies, cultures, and populations, brought about by cross-border trade in goods and services, technology, and flows of investment, people, and information.

Competition: the activity or condition of striving to gain or win something by defeating or establishing superiority over others.

Information Technology: the study or use of systems (especially computers and telecommunications) for storing, retrieving, and sending information.

6.6 Self-Assessment Questions
1. Discuss the various business goals
2. Discuss the characteristics of modern business.

6.7 Further Readings
1. Managerial Economics by P.C. Thomas, Kalyani Publishers, 2015
2. Managerial Economics- Principles and Worldwide Applications by Dominick Salvatore, Oxford Publications 6th Edition
3. Managerial Economics by H.Craig Petersen, W.Chris Lewis, and Sudhir K.Jain by Pearson Education 2010.
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Lesson – 7
PRODUCTION FUNCTIONS

OBJECTIVES:

After studying this lesson, the students are able to understand.
- ✓ What is production?
- ✓ Production function.
- ✓ Managerial use of production function
- ✓ Production function with different variables
- ✓ Isoquants and Isocosts
- ✓ Law of returns scale

STRUCTURE

7.1 Introduction

Production is the process of converting an input into a more valuable output. It is the process of transforming the factor inputs like land, labour, capital and organisation into output. Production theory speaks of the relation between inputs and output.

Input   Output
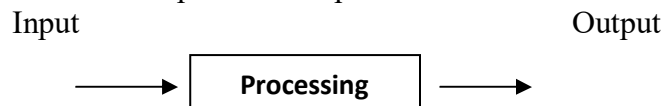
Sales revenue minus cost is profit. Profit can be maximised by increasing selling price or by reducing cost price. In a competitive market the producer has only very little control over price. Selling price is fixed by the interaction of market forces viz. Demand and Supply. Hence all managers are confronted with the problem of reducing cost and thereby achieving the objective

of maximisation of profit. Production theory studies the relationship between various possible input combinations and output. The various inputs used for production are scare and are capable of alternative uses. The problem before the management is how to reduce cost y economically utilising the scarce resources which can be put to alternative uses. The manager has to take a lot of decisions relating to production. He has to decide how much one input can be substituted for another, how least-cost input combination of inputs can be achieved, how the rate of return changes when the scale of production is changed etc. Production theory provides tools to understand these problems and to take profitable decisions.

7.2 Production Function

Production function expresses the technological relationship between physical output and physical quantities of outputs. Production function shows the relationship between quantity of output and the quantity of various inputs used in production. These inputs are also known as *the factors of production*. Land, labour, capital, organisation and technology are the five major determinants of any output. The output (Q – Quantity of output) is considered as the dependent variable. Production inputs (Land, Labour, Capital, Organisation and Technology) are considered as independent variables. Q is a positive function of the independent variables i.e. the factors of production. Output is the function of inputs. This can be expressed algebraically as:

$$Q = f\{Ld, L, C, O, T\}$$

Where

f= Function
Q = Output
Ld = Land (Land does not only mean soil, it comprises of all the natural resources that have exchange value and can be used for production of goods)
L = Labour employed in production
C = Capital
O = Organisation
T = Technology

An increase in any of these factors of production, when the other factors are remain constant, will lead to an increase in output. In other words, all the partial derivatives of the output function, with respect to inputs are positive.

A change in the present production technology will result in a change in the production function. An improved technology helps to produce a given output with a lesser quantity of inputs.

7.3 Managerial use of Production Function

Knowledge of the production function helps the manger very much in business decision-making and management of the production process. It helps to find out the least-cost input combination to produce a certain quantity of output. It provides the manager with several possible combinations of inputs to attain a given quantity of output. He can choose the most desirable one. He can analyse the profitability of increasing only one variable input. It helps him to take long-run decisions. A long-run production function helps him to decide whether he

can increase the production by increasing all the inputs. An increasing return to scale permits an increase in production and a decreasing return to scale suggests a decrease in production. The manager is always eager to reduce the cost of production. If the price of a factor of production increases and that of another decreases, he will substitute the costly one with the less costly one. Production function helps the manager very much in this. It can give guidance in two directions: i) How to obtain the maximum output from a given set of inputs, ii) How to obtain a given output from the minimum combination of inputs.

Types of Production Function

Production Function

Traditional/Theoretical Production Functions

Empirical Production functions

Short-run Production Function

Long-run Production Function

Production Function with one variable (i.e.Labour) case

When other factor inputs are constant, the change in Labour influence the production output or quantity

This can be explained through "The Law of Variable Proportions"

Production Function with Two Variable (Labour and Capital) Case

Changes in output at various combinations of Labour and Capital.

This can be understood through the concept of "Isoquants"

Production Function with all Variable Case

In this case, all the factor inputs are subjected to change to derive an optimal input combination to increase the quantity output.

This can be understood through the concept of "Iso-cost Lines"

These are most practical and tested experimentally. They are

1. Linear Homogeneous Production Function
2. Cobb-Douglas Production Function
3. C.E.S (Constant Elasticity of substitution) Production Function
4. V.E.S (Variable Elasticity of Substitution) Production Function

A firm has two types of production function: i) Short-run production function and ii) Long-run production function. Short-run refers to a period during which some of the inputs remain fixed, an increase in production during this period is possible only by increasing the variable inputs. The short-run production function is otherwise called *single variable production function*. In the long-run all the inputs are variable.

7.4 Short-run Production Function

The short-run production function can be best explained through the "Law of Variable Proportions" which was explained in Lesson 1.

Long-run Production Function

7.4.1 Production Function with Two-Variable Inputs (Labour and Capital)

Suppose we want to produce apples. We need land, water, fertilizers, workers and some machinery. These are called inputs or factors of production. The output is apples. In abstract terms, it is written as $Q = F(X_1, X_2 \ldots X_n)$. Where Q is the maximum quantity of output and X_1, $X_2 \ldots X_n$ are the quantities of the various inputs. If there are only two inputs, labour L and capital K, we write the equation as $Q = F(L, K)$.

From the above equation, we can understand that the production function tells us the relationship between various inputs and outputs. However, it does not say anything about the combination of inputs. The optimal combination of inputs can be derived from the technique of isoquant and isocost line.

7.5 Isoquants

We now examine the production function when there two variable inputs. This can be represented graphically by isoquants. The variation in inputs and the resultant behaviour of output can be understood in greater depth if we are able to determine the output when the inputs are substituted.

Isoquants show the production function with two variable inputs. The word "Iso" means equal, "quant" means quantity. Isoquants are equal product curves. An isoquant curve shows all possible combinations of two inputs, capital and labour, which can be produce a particular quantity of output. Different points on an isoquant curve show the different combinations of the two inputs that can give the same output. An isoquant curve all along its length represents a fixed quantity of output. Isoquant curves are also called *Iso-Product Curves, Equal Product Curves or Product Indifference Curves*.

The following table helps to understand the concept of isoquant curves.

Table B

Combinations	Capital (C)	Labour (L)	Output (Q)
A	1	12	1000
B	2	8	1000
C	3	5	1000
D	4	3	1000
E	5	2	1000

The above table gives five different combinations of inputs Capital (C) and Labour (L) which gives the same output i.e.1000 units. The combination 'A' uses 1 unit of C and 12 units of L to produce 1000 units. Likewise, the combinations B, C,D and E give the same output i.e.1000 units.

6	10	24	31	36	40	39	Capital (C)
5	12	28	36	40	42	40	
4	12	28	36	40	40	36	
3	10	23	31	36	36	33	
2	7	18	28	30	30	28	
1	3	8	12	14	14	12	

   1 2 3 4 5 6
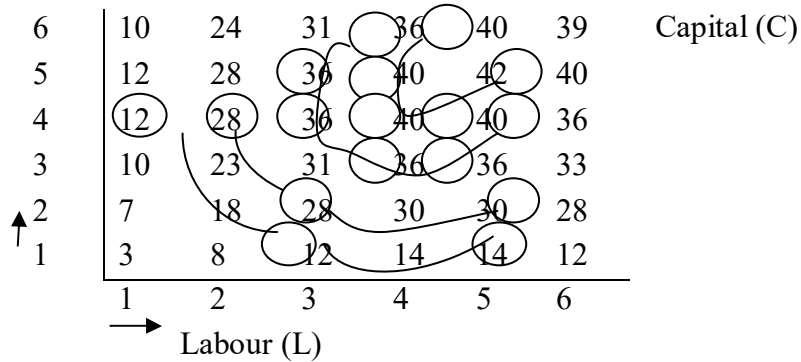
Labour (L)

These various combinations plotted on a graph give the isoquant curve.

The two axes measure the quantities of labour and capital and the curve IQ shows the different combinations that produce 1000 units of output. Each of the points R_1, R_2, R_3, R_4 and R_5 on the curve shows a capital-labour combination that can produce 1000 units of output. Therefore, the curve is known as an equal product curve or an iso-quant curve.Thus, an isoquant curve provides different combinations of two inputs to produce a fixed quantity of output.

Isoquant Curve
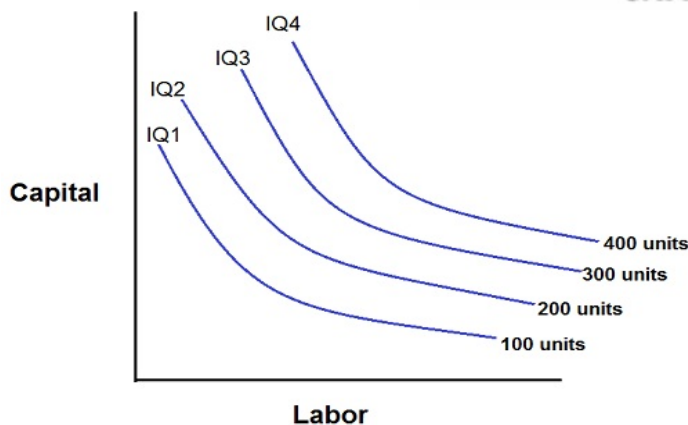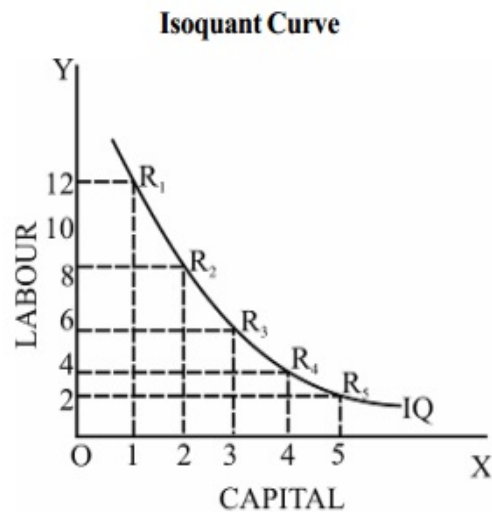
The producer can choose the most economical combination. The upper isoquant Iq_2 and Iq_3 represent larger quantities of output say 40 units and 60 units, with larger input combinations. The shape of the isoquants reveals the degree of substitutability of one factor for another to yield the same level of output. It also implies the diminishing marginal rate of technical substitution.

The marginal rate of technical substitution (MRTS) refers to the rate at which one input can be substituted for another in order to keep the output constant. The slope of an isoquant at a point indicates the marginal rate of technical substitution at that point.

The information in the above table shows various combinations of factors 'C' and 'L' that give the same output 1000 units. The combinations 'A' and 'B' when compared shows that 4 units (12-8) of factor L can be substituted by 1 unit (2-1) of factor 'C' when the output remains the same as 1000 units. Therefore the marginal substitution of C for L at this stage is 4:1. It can be written as

$$MRTS = \frac{\Delta C}{\Delta L}$$

Figure   Isoquant map

Marginal rate of technical substitution of labour for capital is the ratio of the marginal product of labour to the marginal product of capital. The MRTS of labour for capital diminishes because no factor is perfect substitute for another. So, more and more units of labour are needed to replace each additional unit of capital.

7.5.1 Characteristics of an isoquant

a) *Isoquants have a negative slope*
The isoquant slopes downwards from left to right. The slope reveals that the substitution of inputs is possible. The negative slope implies that if an input C is reduced, the other input L has to be increased to maintain the same level of output.

b) *Isoquants are convex to origin*
Convex nature of isoquants shows that substitutability of one factor for another and the diminishing marginal rate of technical substitution.

Figure   Iso cost lines

c) *Isoquants will not intersect*
Two isoquants can never intersect each other. If it did it could imply IQ1 representing 100 units and IQ2 representing 200 units of output at one point. Then it would mean that one input combination could provide two different quantities of output with the same technology. This will not happen.
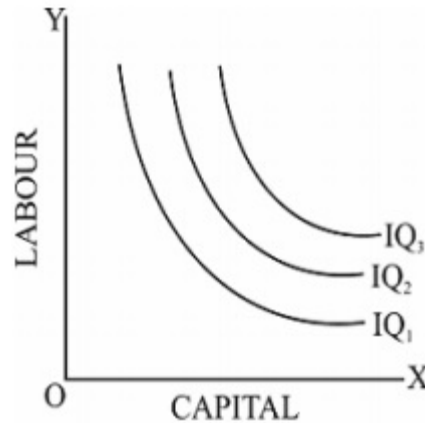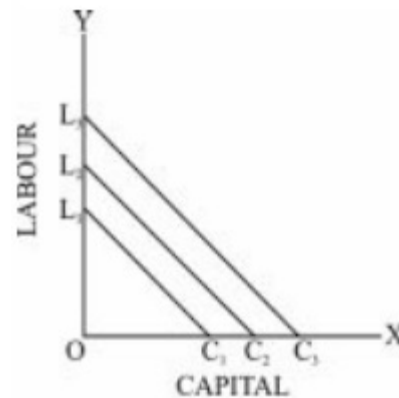
7.6 Production function with all variable case

Law of Returns to Scale

The production function with all variable inputs case can be best explained through an economic concept Returns to Scale. In the long-run all the factors of production are variable, and an increase in output is possible by increasing all the inputs. The firm can hire large quantities of inputs and change the scale of production. The technological relationship between changing scale of inputs and outputs is explained under the law of returns to scale. By returns to scale, we

mean the change in output or returns when all the factors are increased simultaneously in the same ratio. In other words, in returns to scale, we analyse the effect of doubling, trebling and so on of all the inputs on the outputs. In the law of variable proportions change in inputs means the change only in the variable inputs when other inputs remain constant. This results in a change in the proportion among the factors of production. In the law of returns to scale all the factors of production are changed to the same extent thereby keeping the proportion among the factors the same.

Assumptions

This law is based on the following assumptions:

1. All the factors of production (such as land, labor and capital) but organization are variable

2. The law assumes constant technological state. It means that there is no change in technology during the time considered.

3. The market is perfectly competitive.

4. Outputs or returns are measured in physical terms

Three phases of returns to scale

There are three phases of returns in the long-run which may be separately described as:

   i) The law of increasing returns

   ii) The law of constant returns and

   iii) The law of decreasing returns.

i) Increasing Returns to Scale:

Increasing returns to scale is the stage of production when a proportionate increase in all factors of production results in a more than proportionate increase in output. It is the first stage of production. The marginal output increases at this stage. The increase in efficiency resulting in increased output is due to the better utilisation of plant or higher degree of specialisation. The factors of production which are already in use may be some indivisible units. The nature of production is such that large investments must be made in these indivisible units before production starts. For example, a huge machine is to be installed in order to start production. Initially only 60% capacity is utilised for production. When the production increased, making use of the idle capacity, the fixed cost is spread over a large output thus reducing the cost per unit of output.

The increased returns may be due to the increased specialisation. Increase in output helps to adopt higher scale of specialisation leading to increased efficiency and falling costs. It may be now able to use large and expensive machines, and the services of experts or of highly skilled labour which will result in fall in marginal cost.

Figure 1
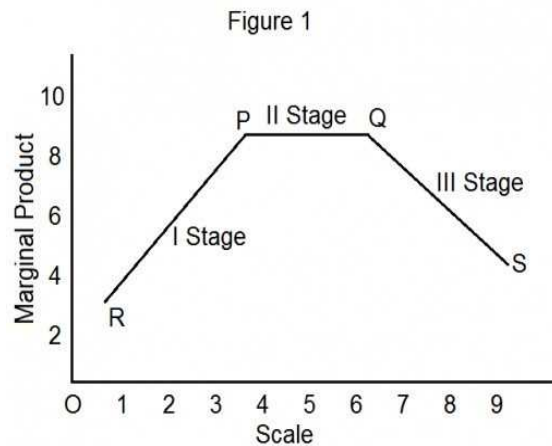
ii) Constant Returns to Scale

The increasing returns to scale stage will not continue indefinitely. The firm gradually loses all the economies of production. Now the firm enters a stage at which total output tends to increase at a rate which is equal to the rate of increase in inputs. That is when the inputs are doubled it results in a doubling of output. This stage comes to operation when the economies of large-scale production are neutralised by the diseconomies of large-scale operation.

iii) Diminishing Returns to Scale

If the firm continuous to expand beyond the stage of constant returns, the stage of diminishing returns to scale starts operating. A proportionate increase in all the inputs in this stage results only in a less than proportionate increase in output. This is because of the diseconomies of large-scale production. When a firm grows in size beyond a certain scale the management becomes difficult. Thus, inefficiency creeps in.

7.7 Summary

Production is the process of converting an input into a more valuable output. It is the process of transforming the factor inputs like land, labour, capital and organisation into output. Production theory speaks of the relation between inputs and output. Production function expresses the technological relationship between physical output and physical quantities of outputs. Production function shows the relationship between quantity of output and the quantity of various inputs used in production.

7.8 Keywords

Law of Returns to Scale: The technological relationship between changing scale of inputs and outputs is explained under the law of returns to scale.

Diminishing Returns to Scale: A proportionate increase in all the inputs in this stage results only in a less than proportionate increase in output.
An isoquant curve is a concave-shaped line on a graph, used in the study of microeconomics, that charts all the factors, or inputs, that produce a specified level of output.
An isocost line shows all combinations of inputs which cost the same total amount. Although similar to the budget constraint in consumer theory, the use of the isocost line pertains to cost-minimization in production, as opposed to utility-maximization.

7.9 Self-Assessment Questions

1. Explain isoquants and isocost curves
2. What are the properties of isoquants?
3. Explain the law of variable proportions. How does it help the business manager in decision-making?
4. Distinguish the three stages of short period production function hen only two factors are being employed.
5. Explain the production function with all variable case by using returns to scale concept.

7.10 Further Readings

1. Managerial Economics by P.C. Thomas, Kalyani Publishers, 2015
2. Managerial Economics- Principles and Worldwide Applications by Dominick Salvatore, Oxford Publications 6th Edition
3. Managerial Economics by H.Craig Petersen, W.Chris Lewis, and Sudhir K.Jain by Pearson Education 2010.
4. Managerial Economics - PL Mehatha, Sulthan Chand & Sons, 2018.
5. Managerial Economics - Theory and Applications - D.M.Mithani, Himalaya Publishnig House, 2017.

Dr. V. Tulasi Das

Lesson- 8
COST FUNCTIONS

OBJECTIVES:
After studying this lesson, the students are able to understand.
- ✓ Determinants of Cost
- ✓ Cost function
- ✓ Types of costs
- ✓ Cost Output relationship
- ✓ Economies of scale
- ✓ Diseconomies of scale

STRUCTURE

8.1 Introduction

Profit maximisation is different from wealth maximisation. While the former is concerned with profits, that are the excess of revenues over costs, the later aims at maximising the net present value of future cash flows that are derived from costs and benefits. Whatever may be the firm's objective, the analysis of costs and benefits is the central concern of managerial decision. Few significant resource allocation decisions are made without a thorough analysis of costs. For the profit maximizing firm, the decision to add a new product is made by comparing additional revenues to the additional costs associated with that new product. Costs are

also important in the non-profit sector. For example, to obtain funding for a new dam, the department of irrigation must demonstrate that the value of the benefits of the dam, such as flood control and water supply, exceeds the cost of the project.The word 'cost' has different meanings in different situations. The accounting cost concept or the historical concept is not useful as such for business decision-making.
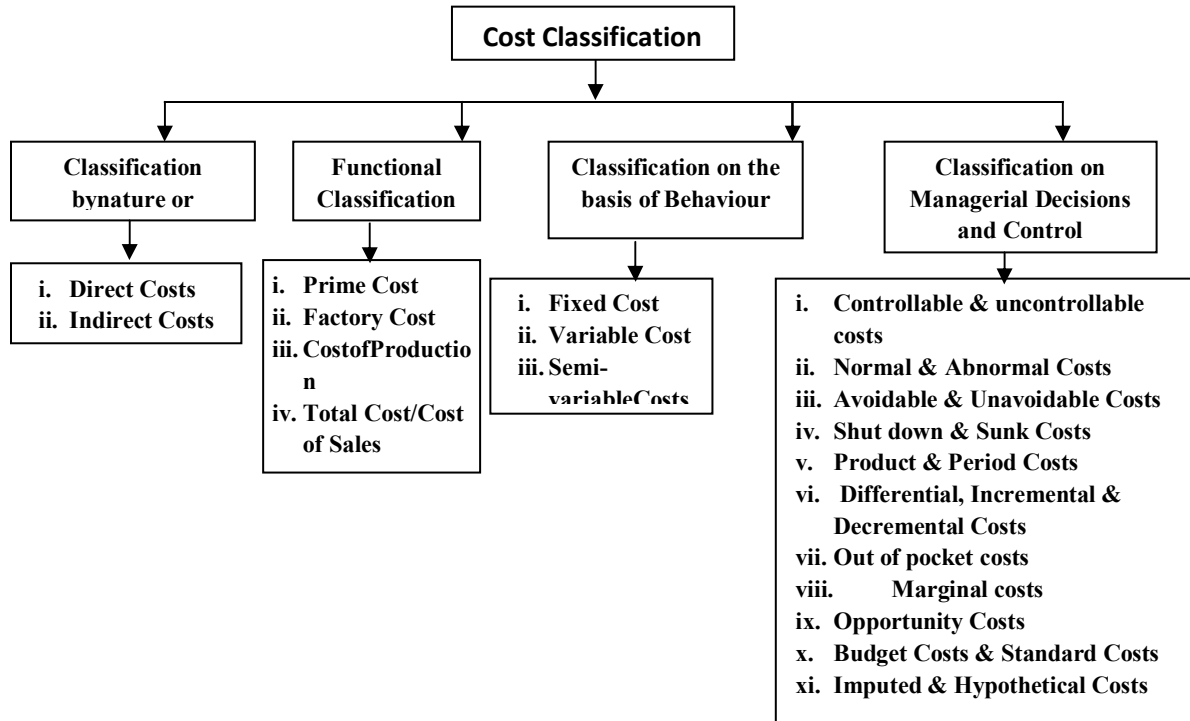
8.2 Determinants of Cost

There are many factors that determine the cost behaviour. In different firms there are different factors that affect the costs. In the following discussion we shat attempt to arrive at some general determinants of costs.

1. **Price of Factors of Production**: Total cost comprises of the cost of factors of production and the cost of raw material. When the price of any one or more factors of production increases, while everything else is kept constant, the total cost of production increases. The nature of this increase will vary from case to case. It will depend upon the extent to which the factors of production can be substituted for one another. If the factor inputs are readily substitutable, it is possible for the firm to replace a costly input by a relatively cheaper input. In this case, the increase in cost will not be as large as what it would have been if the substitution was not possible. Thus, the cost of production varies directly with the prices of the factor inputs.
2. **Productivity of Factors of Production:** The Productivity of a factor of production may be defined as the unit contribution of that factor to the output. Productivity, in a sense, is a measure of the efficiency of the input factor. A factor with higher productivity will be able to produce a larger output, when other things remain the same. In other words, the same output can be produced by using smaller quantities of the factor inputs which have higher productivity. Naturally, the cost of production in such cases will decrease. Thus, cost of production varies inversely with the productivity of factor inputs.
3. **Technological Advancements**: Technological advancement improves the efficiency or productivity of a factor of production. The cost of production is inversely related to technological advancements.
4. **Output:** Output is the most important determinant of cost. A larger output requires more of the factor inputs and the raw materials. *Ceteris paribus*, larger quantities of raw materials and factors of production would mean higher costs of production. Thus, cost varies directly with the output.

8.3 TYPES OF COSTS

Cost analysis refers to the breakup of total cost into certain elements or sub-divisions. Such analysis is essential for the purpose of accounting and control over costs. In the words of Herald J. Wheldon, "a classification has to be made to arrive at the detailed costs of departments, process production orders, jobs or other cost units. The total cost of production can be found without such analysis, but in many instances an average unit cost could be obtained but none of the advantages of an analysed cost would be available".

Costs may be classified into different categories depending upon the purpose of their classification. Some of the important basis of cost classification is as follows:

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                              ┌─────────────────────┐
                              │ Cost Classification │
                              └─────────────────────┘
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Classification by nature or	Functional Classification	Classification on the basis of Behaviour	Classification on Managerial Decisions and Control
i. Direct Costs ii. Indirect Costs	i. Prime Cost ii. Factory Cost iii. Cost of Production iv. Total Cost/Cost of Sales	i. Fixed Cost ii. Variable Cost iii. Semi-variable Costs	i. Controllable & uncontrollable costs ii. Normal & Abnormal Costs iii. Avoidable & Unavoidable Costs iv. Shut down & Sunk Costs v. Product & Period Costs vi. Differential, Incremental & Decremental Costs vii. Out of pocket costs viii. Marginal costs ix. Opportunity Costs x. Budget Costs & Standard Costs xi. Imputed & Hypothetical Costs

8.3.1 Classification by Nature or Element

According to the nature of elements of costs, costs can be broadly classified as:

      i.   Direct costs
      ii.   Indirect costs

i.   **Direct Costs:** Direct costs are the costs which can be conveniently identified with and allocated to a particular unit of final product. Such costs are treated as the cost of the unit produced. The examples of direct costs are raw materials, labour and other direct expenses which are exclusively incurred for a particular unit of cost i.e. job, product or process. Hence direct costs can be further classified as: i)Direct Material; ii) Direct Labour; iii) Direct Expenses

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                        ┌──────────────────┐
                        │ Elements of Costs│
                        └──────────────────┘
            ┌────────────────┐        ┌──────────────────┐
            │  Direct Costs  │        │  Indirect Costs  │
            └────────────────┘        └──────────────────┘
   ┌────────┬────────┬────────┐   ┌────────┬────────┬────────┐
   │ Direct │ Direct │ Direct │   │Indirect│Indirect│Indirect│
   │Material│ Labour │Expense │   │Material│ Labour │Expenses│
   └────────┴────────┴────────┘   └────────┴────────┴────────┘
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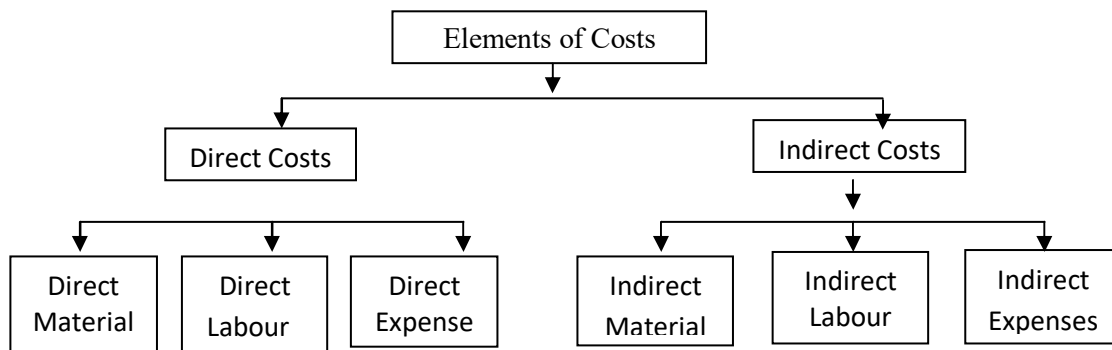
ii.   **Indirect Costs:** Are those costs which cannot be assigned to any particular cost unit i.e. job, product or process. Indirect costs are usually, incurred for the business as a whole and are therefore, apportioned among the various cost units on some reasonable base.

Like direct costs indirect costs include: i) Indirect Material; ii) Indirect Labour; iii) Indirect Expenses.

8.3.2 Functional Classification of Costs

Functionally, costs can be classified under the following heads:
a) **Prime Cost:** it consists of the costs of direct materials that go into the product, the costs of direct labour and direct expenses. It is also known as direct cost or fist cost.
b) **Factory Cost:** It consists of prime cost plus factory overhead or works expenses or factory on cost. Factory cost is also known as works cost, production cost or manufacturing cost.
c) **Cost of Production:** also called office cost, administration costs or gross costs of production, it consists of factory cost plus office and administrative expenses.
d) **Total Cost or Cost of Sales:** It comprises cost of production plus selling and distribution overheads.

8.3.3 Classification of Costs on the basis of Cost Behaviour

a) **Fixed Cost:** Cost which does not change when there is change in the production. These costs are called fixed costs because these remain constant irrespective of the level of output. Eg: Rent of the building, interest on capital, salaries, and wages. It must be, however be noted that fixed costs do not remain constant for all times. In fact, in the long run all costs have a tendency to vary.
b) **Variable cost:** Cost which changes in accordance with production change. Eg: Raw material, power, fuel. They almost vary in direct proportion to the volume of production.
c) **Semi-variable Cost:** Those costs which are partly fixed and partly variable are called semi-variable costs. These costs vary with the level of production but not in direct proportion to the level of production. Eg. Depreciation on Machinery, Maintenance of Equipment, administrative costs etc.

8.3.4 Classification by Managerial Decisions and Control

For the managerial decision making the cost data can be analyzed keeping in view the following cost concepts:

i. Marginal Cost: The term 'marginal cost' is defined as the amount at any given volume of output by which aggregate costs are changed if the volume of output is increased or decreased by one unit. It is a variable cost of one unit of a product or a service i.e., a cost which would be avoided if that unit was not produced or provided.

ii. Differential Cost: It is also known as 'incremental cost'. It is the difference in total cost that will arise from the selection of one alternative to the other. It is an added cost of a change in the level of activity. This concept is similar to the economists' concept of marginal cost which is defined as the additional cost incurred by producing one more unit of product. It refers to any kind of change like add or drop a new product/existing product, changing distribution channels, add or drop business segments, adding new machinery, sell or process further, accept or reject special orders etc.

iii. Opportunity Cost: It is the value of a benefit sacrificed in favour of an alternative course of action. It is the maximum amount that could be obtained at any given point of time if a resource was sold or put to the most valuable alternative use that would be practicable. Opportunity cost of good or service is measured in terms of revenue which could have been earned by employing that good or service in some other alternative uses. Opportunity cost can be defined as the revenue forgone by not making the best alternative use. Opportunity costs represent income foregone by rejecting alternatives. They are, therefore not incorporated into formal accounting systems because they do not incorporate cash receipts or outflows.

iv. Relevant Cost: The relevant cost is a cost appropriate in aiding to make specific management decisions. Business decisions involve planning for future and consideration of several alternative courses of action. In this process the costs which are affected by the decisions are future costs. Such costs are called relevant costs because they are pertinent to the decisions in hand. The cost is said to be relevant if it helps the manager in taking a right decision in furtherance of the company's objectives. A relevant cost is a future cost which differs between alternatives. It can also be defined as any cost which is affected by the decision at hand. The relevant cost must be a future cost, i.e., one which is expected to be incurred and not a historic or sunk cost which has already been incurred.

v. Sunk Cost: The sunk cost is one for which the expenditure has taken place in the past. This cost is not affected by a particular decision under consideration. Sunk costs are always results of decisions taken in the past. This cannot be changed by any decision in future. The sunk costs are those costs that have been invested in a project and which will not be recovered if the project is terminated. The sunk cost is one for which the expenditure has taken place in the past. This cost is not affected by a particular decision under consideration. Sunk-costs are always results of decisions taken in the past;-This cost cannot be changed by any decision in future. Investment in plant and machinery as soon as it is installed, its cost is sunk cost and is not relevant for decisions.
Amortisation of past expenses, e.g., depreciation is a sunk cost. Sunk costs will remain the same irrespective of the alternative selected. Thus, it need not be considered by the management in evaluating the alternatives as it is common to all of them.

vi. Replacement Cost: The replacement cost is a cost at which material identical to that is to be replaced could be purchased at the date of valuation (as distinct from actual cost price at the date of purchase). The replacement cost is a cost of replacing an asset at any given point of time either at present or in the future (excluding any element attributable to improvement).

vii. Normal Cost: The normal cost is normally incurred at a given level of output in the conditions in which that level of output is achieved. Normal cost includes those items of cost which occur in the normal situation of production process or in the normal environment of the business. The normal idle time is to be included in the ascertainment of normal cost.

viii. Abnormal Cost: It is an unusual or a typical cost whose occurrence is usually irregular and unexpected and due to some abnormal situation of the production. Abnormal cost arises due to idle time for some heavy break down or abnormal process loss. They are not considered in the cost of production for decision making and charged to Profit and Loss Account.

ix. Avoidable Cost: The avoidable costs are those cost which under given conditions of performance efficiency should not have been incurred. Avoidable costs are logically associated with some activity or situation and are ascertained by the difference of actual cost with the happening of the situation and the normal cost. When spoilage occurs in manufacture in excess of normal limit, the resulting cost of spoilage is avoidable cost. Cost variances which are controllable may be termed as avoidable cost. These costs are also called as 'escapable costs'. The avoidable cost will not be incurred if an activity is not undertaken or discontinued. Avoidable cost will often correspond with variable costs. Avoidable cost can be identified with an activity or sector of a business and which would be avoided if that activity or sector did not exist. It refers to costs which can be reduced due to a contraction in the activities of a business enterprise. It is the net effect on costs that is important, not just the costs directly avoidable by the contraction.

x. Unavoidable Cost: The unavoidable costs are 'inescapable costs' which are essentially to be incurred, within the limits or norms provided for. It is the cost that must be incurred under a program of business restriction. It is fixed in nature and inescapable.

xi. Pre-Production Cost: The costs incurred prior to the starting of commercial production are called as 'pre-production costs'. These costs include preliminary expenses, trail run costs etc. These costs are incurred from the initiation of project till its formal commercial production.
When a new factory is in the process of establishment or a new product line or product is taken-up, a new project is undertaken, but the commercial operations have not started, during such period all costs incurred are considered as pre-production costs and are treated as deferred revenue expenditure except the costs which have been capitalized. Such deferred expenses are charged to future production.

xii. Product Cost: The product cost is aggregate of costs that are associated with a unit of product. Such costs may or may not include an element of overheads depending upon the type of costing system in force – absorption or direct. Product costs are related to goods produced or purchased for resale and are initially identifiable as part of inventory. These product or inventory costs become expenses in the form of cost of goods sold only when the inventory is sold. Product cost is associated with unit of output. The costs of inputs in forming the product viz., the direct material, direct labour, factory overhead constitute the product costs.

xiii. Period Cost: The period cost is a cost that tends to be unaffected by changes in level of activity during a given period of time. Period cost is associated with a time period rather than manufacturing activity and these costs are deducted as expenses during the current period without previously classified as product costs. Selling and distribution costs are period costs and are deducted from the revenue without their being regarded as part of the inventory cost.

xiv. Traceable Cost: The traceable costs are those which can be identified easily and indisputably with a unit of operation or costing unit or cost centre. Costs of direct material, direct labour and direct expenses can be directly allocated or identified with particular cost centres or cost units and can be directly charged to such cost centres or cost units.

xv. Common Cost: The common costs cannot be allocated but which can be apportioned to cost centres or cost units. The indirect costs are not traceable to any plant, department, operation or to any individual final product. All overhead costs are indirect costs. Cost of indirect material, indirect labour and indirect expenses in aggregate constitute the overhead costs and are the indirect component of the total cost. The concepts of direct and indirect costs are meaningless without identification of the relevant cost unit or cost centre. Segregation of costs into direct and indirect costs is essential for proper accounting and control of costs and also for managerial decision-making purpose.

xvi. Controllable Cost: The controllable cost is a cost chargeable to a budget or cost centre, which can be influenced by the actions of the person in whom control of the centre is vested. It is always not possible to predetermine responsibility, because the reason for deviation from expected performance may only become evident later. For example, excessive scrap may arise from inadequate supervision or from latent defect in purchased material. The controllable cost is a cost that can be influenced and regulated during a given time span by the actions of a particular individual within an organization.

xvii. Uncontrollable Cost: These costs cannot be influenced by the action of a specified member of the organization. The controllability of cost depends upon the level of responsibility under consideration. Direct costs are generally controllable by the shop level management. The uncontrollable cost is a cost that is beyond the control (i.e., uninfluenced by actions) of a given individual during a given period of time.

xviii. Short-Run Cost: The short-run costs are costs that vary with output when fixed plant and capital equipment remain the same and become relevant when a firm has to decide whether or not to produce more in the immediate future.

xix. Long-Run Cost: The long-run costs are those which vary with output when all input factors including plant and equipment vary and become relevant when the firm has to decide whether to setup a new plant or to expand the existing one.

8.3.5 Cost Classification by Nature of Production Process:

Depending on the nature of production process, the cost can be classified into the following:

i. **Batch Cost:** It is the aggregate cost related to a cost unit which consists of a group of similar articles which maintain its identity throughout one or more stages of production.

ii. **Process Cost:** When the production process is such that goods are produced from a sequence of continuous or repetitive operations or processes, the cost incurred during a period is considered as process cost. The process cost per unit is derived by dividing the process cost by number of units produced in the process during the period. Accounts are maintained for cost of a process for a period. The average cost per unit produced during the period is process cost per unit.

iii. **Operation Cost:** It is the cost of a specific operation involved in a production process or business activity. When there are distinctly separate operations involved in a process, cost for each operation is found out for effective control mechanism.

iv. **Operating Cost:** It is the cost incurred in conducting a business activity. Operating costs refer to the cost of undertakings which do not manufacture any product but which provide services.

v. **Contract Cost:** It is the cost of a contract with some terms and conditions of adjustment agreed upon between the contractee and the contractor. Contract cost usually implied to major long- term contracts as distinct from short-term job costs. Escalation clause is sometimes provided in the contract in order to take care of anticipated change in material price, labour cost etc.

vi. **Joint Cost:** These are the common costs of facilities or services employed in the output of two or more simultaneously produced or otherwise closely related operations, commodities or services.

When a production process is such that from a set of same input, two or more distinguishably different products are produced together, products of greater importance are termed as joint products and products of minor importance are termed as by-products and the costs incurred prior to the point of separation of the products are termed as joint costs. For example, in a petroleum refinery industry, petrol, diesel oil, kerosene oil, naptha, tar etc. are produced jointly in the refinery process. By-product cost is the cost assigned to the by -products.

8.4 Cost Functions

A cost function relates cost to the rate of output. The basis for a cost function is the production function and the prices of inputs. The cost-output relationship plays an important role in determining the optimum level of production. Knowledge of the cost-output relation helps the manager in cost control, profits prediction, pricing, promotion etc. The relation between cost and output is technically described as the cost function.

$$TC = f(Q)$$

Where: TC = Total Cost
  Q = Quantity produced
  f= Function of

The production function combined with the prices of inputs determines the cost function of the firm. Considering the period the cost function can be classified as a) Short-run cost function; b) Long-run cost function.

8.5 Cost-Output Relation during Short Run or Short Run Cost Curves:

Time element plays an important role in price determination of a firm. During short period two types of factors are employed. One is fixed factor while others are variable factors of production. Fixed factor of production remains constant while with the increase in production, we can change variable inputs only because time is short in which all the factors cannot be varied. Raw material, semi-finished material, unskilled labour, energy, etc., are variable inputs which can be changed during short run. Machines, capital, infrastructure, salaries of managers and technical experts are included in fixed inputs. During short period an individual firm can change variable factors of production according to requirements of production while fixed factors of production cannot be changed.

The cost-output relation during short period can be studied with the help of short run cost curves based on short run costs as given below:

8.5.1 Short Run Total Costs:

Short run total costs of a firm are of following types:
(1) Total Costs: Those costs which are incurred by a firm in the production of any commodity on the basis of total fixed cost and total variable cost.
Total costs are calculated on the basis of the following formula:
Total cost (TC) = Total fixed cost (TFC) + Total variable cost (TVC)
Total costs change due to change in the total variable costs only during short period because total fixed costs (TFC) remain constant.

Short run total costs can be seen from the following table:

Table 1:Short-run Total Costs

| Output (units)	Total Fixed Cost (TFC)	Total Variable Cost (TVC)	Total Cost (TC)
0	100	0	100
1	100	30	130
2	100	60	160
3	100	80	180
4	100	90	190
5	100	100	200
6	100	120	220
7	100	150	250
8	100	190	290
9	100	240	340
10	100	320	420

The table reveals that total fixed cost remain constant when the production is zero or its is increasing while total variable cost is zero when production is zero and it changes with the change in output and total cost is the aggregate of total fixed cost and total variable cost.

8.5.2 Total Fixed Cost (TFC):

Those costs which remain constant when the output is zero as well as it is increasing are called total fixed costs. Such costs are borne by the firm whether there is production or not. These costs are not concerned with the production of a commodity. Plant, land and building, machinery, tools, equipment, implements, contractual rent, insurance fee, maintenance cost, property tax, interest on the capital, manager's salary, etc., are the items which are included in total fixed costs.

These costs are borne even there is zero production during short period. The Table 1 shows when production is zero the total fixed cost is Rs. 100 and when it is 10 units even then it is Rs. 100. Hence, total fixed costs remain constant. These costs are also known as supplementary costs, general costs, indirect costs and overhead costs. TFC is shown in Diagram 1 which is perfectly horizontal to OX-axis.

Diagram 1 : Opportunity Cost
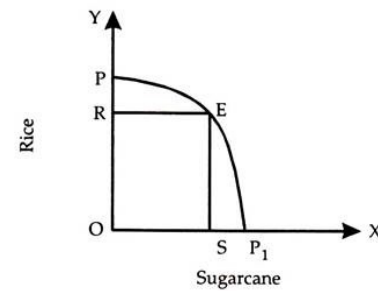
8.5.3 Total Variable Costs (TVC):

Those costs which vary with the production of a commodity during short period and they have direct relation with the change in production. When production is zero these costs will be zero and when production increases they will move in the same direction. These costs are incurred on raw material, direct wages and expenses on energy or power. Variable costs are also called prune costs or direct costs. Total variable costs show an increasing trend as shown in Diagram 1.

Thus, total costs are the summation (aggregates) of total fixed costs and total variable costs. All these costs are related to short run production. They are shown in the Diagram 2 on the basis of the Table 2.

Table 2:Short-run output relation (Rs.)

Output (Units)	Total Costs			Average Costs			
	TFC	TVC	TC=TFC+TVC	AFC	AVC	TAC=AFC+AVC	MC
1	2	3	4	5	6	7	8
0	100	0	100	0	0	0	-
1	100	30	130	100	30	130	30
2	100	60	160	50	30	80	30
3	100	80	180	33.3	26.7	60	20
4	100	90	190	25	22.5	47.5	10
5	100	100	200	20	20.0	40.0	10
6	100	120	220	16.67	20.0	36.67	20
7	100	150	250	14.3	21.4	35.7	30
8	100	190	290	12.5	23.75	36.25	40
9	100	240	340	11.1	26.67	37.7	50
10	100	320	420	10.0	32.0	42.0	80

The Diagram 2 shows TC, TFC and TVC. TFC is parallel to OX-axis and it remains constant whether production is zero or it is 10 units. TVC starts from zero production where it is zero and goes on increasing with the increase in output. TC is the total of TFC and TVC. When production is zero total cost is equal to TFC and it increases with increase in production. The difference between

Diagram 2
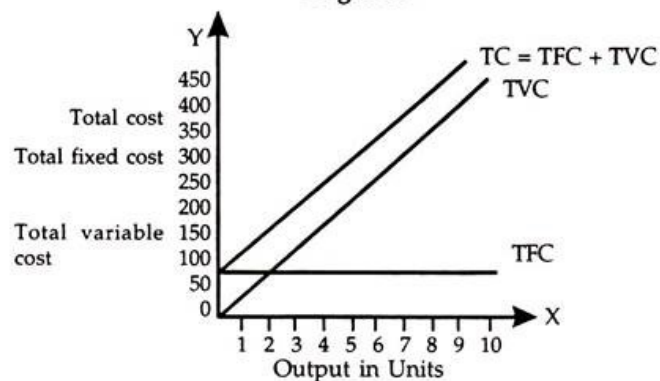
TVC and TC is equivalent to TFC which remains constant.

8.5.4 Average Costs or Per Unit Costs:

During short period average costs or per unit costs can be divided into following categories:

(1) Average fixed costs (AFC)
(2) Average variable costs (AVC)
(3) Average Costs (AC)
(4) Marginal Cost (MC).

(1) Average Fixed Cost (AFC):

The average fixed cost is the total fixed cost divided by the volume of output. There is an inverse relation between output and average fixed cost. With the increase in output average fixed cost decreases and with the decrease in output the average fixed cost will increase. The shape of average fixed cost curve becomes rectangular hyperbola with the increase in output.

It is calculated from the following formula:
$$AFC = TFC/O$$
O is volume of output AFC and TFC are average fixed cost and total fixed cost.

(2) Average Variable Cost (AVC):

The average variable cost is total variable cost divided by the volume of output. Average variable cost falls with the increase in output, reaches at its minimum and then starts rising. By the operation of law of increasing returns the AVC decreases, and by the operation of constant returns leads to constancy in AVC and the law of diminishing returns leads to increase in AVC. The shape of AVC is U-shaped because of the operation of the laws of returns during short period.

The AVC is calculated by the formula given below:
$$AVC = TVC/O$$
AVC and TVC are average variable cost and total variable cost while O is the volume of output.

(3) Average Cost (AC):

Average cost is also called average total cost (ATC) during short period because it is the aggregate of AFC and AVC. AC can be calculated from total cost (TC) divided by the volume of output or by aggregating AVC and AFC.

The following is the formula of calculating AC:
$$AC = TC/O$$
AC and TC are average cost and total cost while O is the volume of output.

Another formula for the calculation of AC is as given under:
$$AC = AFC + AVC$$
The AC curve decreases with the increase in output and remains constant up to a point and thereafter it increases with the increase in output. Its shape is U-shaped because of the operation of the laws of return during short period.

(4) Marginal Cost (MC):
It is an addition to total cost by producing an additional unit of output. It can be calculated as the change in total cost divided by an additional unit change in the output.

The formula for its calculation is as given below:
$$MC = \Delta TC / \Delta O$$
MC is marginal cost, ΔTC is change in TC and ΔO is change in the volume of output.
For example, if the total cost (TC) of 5 units of a commodity is Rs. 550 and 6 units of a commodity is Rs. 600, then the marginal cost of 6th units is Rs. 50.

It can be calculated on the basis of the above formula as given under:
$$MC = \Delta TC / \Delta O = 50/1 = 50 \text{ or Rs. } 50$$
The MC cost changes with the change in AVC and it is independent of fixed cost. In the beginning the MC falls, reaches at its minimum and thereafter continuously rises. MC is also U-shaped. The MC curve cuts the AC and AVC curves at their minimum points.

The cost-output relation during short period can be seen from Table 2.

The table reveals the trends in total costs (TFC and TVC), average cost (AFC and TVC) and MC. TFC remains constant and TVC goes on increasing and consequently TC is also increasing. AFC is decreasing, but it is positive. AVC decreases, remains constant and thereafter increases. AC also decreases, remains constant and shows an increasing trend. MC increases, remains constant and thereafter shows an increasing trend.

On the basis of the Table 2 we can show the costs and output relation during short period in the following diagram:

The diagram shows AC, AFC, AVC and MC on OY-axis and units of output on OX-axis. AC, MC and AVC are U-shaped curves. The U-shaped curves are on account of the operation of the laws of return during short period. AFC curve shows a decreasing trend. MC curve passes through the minimum points of AC and AVC curves.

Diagram 3 : Cost–Output Relation

**There is a close relationship between AC and MC as given below:**
(1) AC and MC fall in the beginning but MC falls more rapidly than AC and MC is below AC or AC is greater than MC (AC>MC).
(2) When AC rises, MC also rises but it rises more rapidly than the AC and MC is greater than AC (MC>AC).
(3) When AC is minimum it is equal to AC. The MC curve cuts the AC curve at its minimum point.
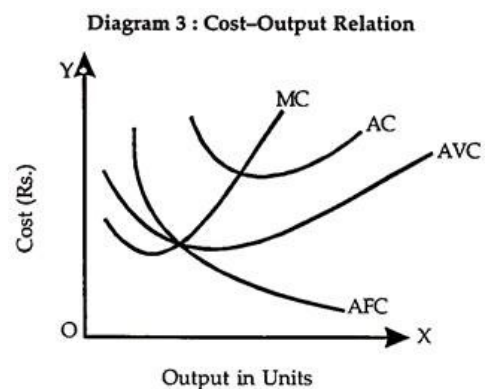
The relation between AC and MC can be seen from the following diagram during short period:

The diagram shows AC and MC on OY-axis and volume of output on OX-axis.

Diagram 4 : Relation between AC and MC
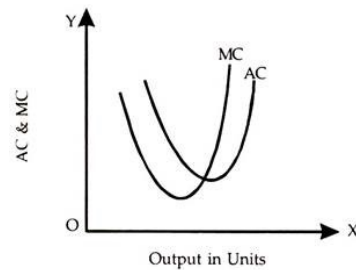
Cost-Output Relation during Long Run or Long Run Cost Curves:

Long period gives sufficient time to business managers to change even the scale of production. All the factors of production are variable. All the costs are variable costs and there is no fixed cost. The supply of goods can be adjusted to their demands because scale of production and factors of production can be changed. In the long run we can study the long run average cost curve and long run marginal cost curve.

8.6 Long Run Average Cost (LAC):

In the long run, all the factors of production are variable and the firm has a variety of choices to select the size of the plants and the factors of production to be employed. Various short run average cost curves represent the various sizes of the plants available to a firm. We can get the long run average cost curve with the help of all the short run average cost curves. The long run average cost curve envelopes all the short run average cost curves in it. It is also called an 'Envelope Curve' or 'Planning Curve'.

The long run average cost curve is also a flat U-shaped curve as shown in the following diagram:

The diagram shows long run cost on OY-axis and output on OX-axis. SAC, SAC_1, SAC_2, SAC_3 and SAC_4 are short run average cost curves which represent the differentsize of plants. LAC has been drawn by combining all those points of least cost of producing the corresponding output. The least per unit cost of production is OQ, OQ_1, OQ_2, OQ_3, OQ_4, and OQ_5 respectively.

Diagram 5 : Long Run Average Cost Curve (LAC Curve)
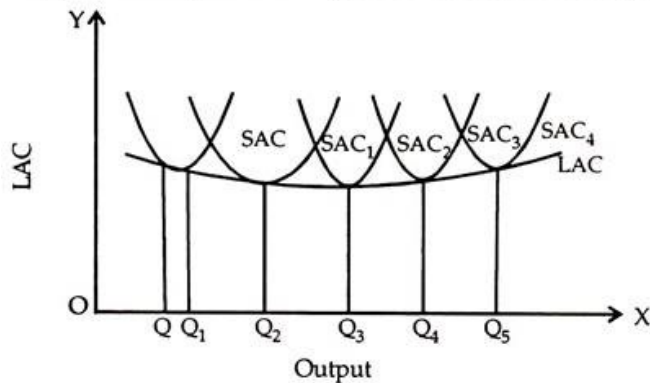
## 8.7Long Run Marginal Cost (LMC):

The long run marginal cost is an addition to the long run total cost when an additional unit of a commodity is produced. It is calculated as the short run marginal cost is calculated. Long run marginal cost curve is also U-shaped but the fall and rise in the marginal cost curve is not sharp but it is gradual.

The LAC and LMC can be seen from the following diagram:

The diagram shows that LAC and LMC are shown on OY- axis while output is shown on OX-axis. The shape of LAC and LMC are U-shaped. The relation between LAC and LMC is the same as is between short run average cost (SAC) and short run marginal cost (SMC) curves. The LMC curve cuts the LAC curve from its minimum point.

Diagram 6 : LAC and LMC Curves
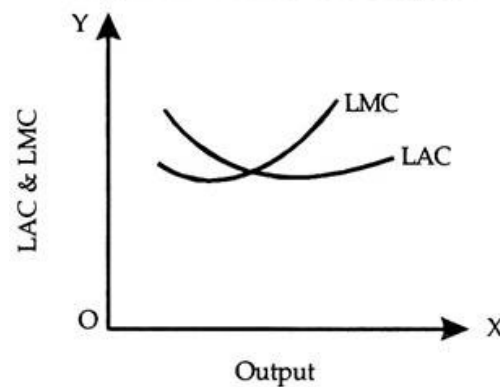
Why LAC Curve is U-Shaped?

In the short run SAC curve is U-shaped because the laws of return operate but in the long run LAC is also U-shaped because the laws of return of scale operate, namely, law of increasing returns to scale, law of constant returns to scale and the law of diminishing returns to scale.

As the level of output is expanded or scale of operation is increased by the large firm they will enjoy economies of scale but if these firms produce beyond their installed capacity then they might get diseconomies of scale. Economies of scale bring down the fall in unit cost and diseconomies results into rise in it.

8.8 Economies of Scale:

Economies of scale are the results of the operation of laws of return to scale in long run. They are of two types:
  (1) Internal economies of scale
  (2) External economies of scale.

(1) Internal Economies:

Internal economies of scale are those economies which are on account of the size and operations of an individual firm itself and not from the outside factors.

These economies may be of following categories:
  (a) Managerial economies.
  (b) Marketing economies.
  (c) Specialisation economies.
  (d) Technical economies.

(a) Managerial Economies:

Managerial economies means that with the expansion of the output on account of the change in scale of production the whole expanded scale is looked after by the personnel in the organisation and administrative cost decreases with the increase in output.

(b) Marketing Economies:

Marketing economies are concerned with the bulk purchases of raw material while producing on the large scale leads to decrease in the cost of production. Selling in lot saves time, money and energy. Transportation cost will also be reduced.

(c) Specialisation Economies:

Specialisation economies are on account of division of labour and specialisation when large scale production is carried on. The cost of production reduces due to specialisation and division of labour in a business firm.

(d) Technical Economies:
Technical economies arise on account of large-scale production in the use of plant, machinery and work processes. Advanced technology is used which reduces the cost of production when the production is carried on large scale.

(2) External Economies:
External economies arise on account of the external factors and they are enjoyed by all the firms in the area or industry as a whole. When an area is industrially well developed then there will be development of labour market, banking, insurance, financial institutions, means of communication and transportation, social overhead and cheap water, electricity and ancillaries. When a new firm or new industrial unit is set up all these benefits will be available in that area. All these facilities will reduce the cost of production of all the industrial units in that area. As a result of all the internal and external economies the unit cost of production falls and the LAC and LMC will also fall.

8.9 Diseconomies of Scale:

Diseconomies mean the losses incurred by the firms or industrial units in an area.
These diseconomies are of two types:
      (1) Internal diseconomies of scale.
      (2) External diseconomies of scale.

(1) Internal Diseconomies:
These diseconomies are concerned with the size and operation of individual firm or industry.
These diseconomies are of the following categories:
      (a) Managerial diseconomies
      (b) Technical diseconomies
      (c) Marketing diseconomies
      (d) Specialisation diseconomies.

(a) Managerial Diseconomies:
When the size of operation of a firm increases the span of control becomes large and thereby the employer-employee relations are adversely affected leading to increase in the cost of production. It is resulted into managerial diseconomies.
(b) Technical Diseconomies:
Under technical diseconomies when the output is taken on large scale after a given point the break down rate may increase in the cost of production.
(c) Marketing Diseconomies:
Marketing diseconomies arise on account of the adverse effect on the control and coordination over marketing activities because of the large-scale production and it increases the cost of production.
(d) Specialisation Diseconomies:
Specialisation diseconomies are concerned with the division of labour and specialisation introduced by a firm with the operation of the large-scale production. But after a point due to monotony, fatigue and lack of coordination between different layers of personnel administration the cost of production increases that gives birth to these diseconomies.

(2) External Diseconomies:
Such loss or external diseconomies are incurred by business firms or industrial units in an area. Concentration and localisation of industries adversely affect the industrial peace in that area and strikes, lockouts, go slow tactics, gheraos, industrial accidents, emergence of dirty colonies, water pollution, air pollution, etc., increase the cost of production of all firms and industrial units. Means of communication and transportation are overburdened.Hence, the internal and external diseconomies will increase the LAC curve and LMC curve upward and the cost will increase.

8.10 Summary

A cost function is a formula used to predict the cost that will be experienced at a certain activity level. This formula tends to be effective only within a range of activity levels, beyond which it no longer yields accurate results. Beyond the outer thresholds of these activity levels, the cost function must be adjusted to account for such factors as changes in volume discounts and the incurrence of step costs. Cost functions are typically incorporated into company budgets, so that modeled changes in sales and unit volumes will automatically trigger changes in budgeted expenses in the budget model.

8.11 Keywords

Marginal Cost (MC): It is an addition to total cost by producing an additional unit of output. It can be calculated as the change in total cost divided by an additional unit change in the output.
Average Variable Cost (AVC): The average variable cost is total variable cost divided by the volume of output. Average variable cost falls with the increase in output, reaches at its minimum and then starts rising.
Average Fixed Cost (AFC): The average fixed cost is the total fixed cost divided by the volume of output. There is an inverse relation between output and average fixed cost.

8.12 Self-AssessmentQuestions
1. What is the significance of opportunity cost in business decisions?
2. Differentiate the accounting and economic cost concepts.
3. Discuss the short-run cost-output with the help of diagrams
4. Explain the long-run cost-output relation with diagrams.
5. What are the various types of costs? Elucidate with suitable examples.

8.13 Further Readings

1. Managerial Economics by P.C. Thomas, Kalyani Publishers, 2015
2. Managerial Economics- Principles and Worldwide Applications by Dominick Salvatore, Oxford Publications 6th Edition
3. Managerial Economics by H.Craig Petersen, W.Chris Lewis, and Sudhir K.Jain by Pearson Education 2010.
4. Managerial Economics - PL Mehatha, Sulthan Chand & Sons, 2018.
5. Managerial Economics - Theory and Applications - D.M.Mithani, Himalaya Publishing House, 2017.

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LESSON-9
ANALYSIS OF RISK AND UNCERTAINTY

OBJECTIVES:

After studying this lesson, the students are able to understand.

- ✓ Understand the concept of risk and uncertainty
- ✓ Measures of risk and uncertainty
- ✓ Managerial implications of risk and uncertainty

STRUCTURE

9.1 Introduction

Managerial decisions are made under conditions of certainty, risk, or uncertainty. **Certainty** refers to the situation where there is only one possible outcome to a decision and this outcome is known precisely. For example, investing in Treasury Bills (T-Bills) leads to only one outcome (the amount of the yield), and this is known with certainty. The reason is that there is virtually no chance to that the Indian Government will fail to redeem these securities at maturity or that it will default on interest payments. On the other hand, when there is more than one possible out come to a decision, risk or uncertainty is present.

9.2 Concept of Risk

It refers to a situation in which there is more than one possible outcome to a decision and the probability of each specific outcome is known or can be estimated. Thus, risk requires that the decision maker know all the possible outcomes of the decision and have some idea of the probability of each outcome's occurrence. Investing in a stock or introducing a new product can

lead to one of a set of possible outcomes, and the probability of each possible outcome can be estimated from past experience or from market studies. In general, the greater the variability (i.e. the greater the number and range) of possible outcomes, the greater is the risk associated with the decision or action. Moreover, the return is greatly depending on risk and it is proportionately related to the quantum of risk. It means more risk more returns vice-versa.

9.3 General Risk Categories

i). Business risk is the chance of loss associated with a given managerial decision. Such losses are a normal by-product of the unpredictable variation in product demand and cost conditions. Business risk must be dealt with effectively; it seldom can be eliminated. In a globally competitive environment with instant communication, managers face a wide variety of risks.

ii). Market Risk: For managers, a main worry is something called market risk, or the chance that a portfolio of investments can lose money because of overall swings in the financial markets. Managers must be concerned about market risk because it influences the cost and timing of selling new debt and equity securities to investors. When a bear market ensues, investors are not the only ones to lose. Companies unable to raise funds for new plant and equipment must forego profitable investment opportunities when the cost of financing escalates.

iii). Inflation risk is the danger that a general increase in the price level will undermine the real economic value of corporate agreements that involve a fixed promise to pay a specified amount over an extended period. Leases, rental agreements, and corporate bonds are all examples of business contracts that can be susceptible to inflation risk.

iv). Interest-rate risk is another type of market risk that can severely affect the value of corporate investments and obligations. This stems from the fact that a fall in interest rates will increase the value of any contract that involves a fixed promise to pay over an extended time frame. Conversely, a rise in interest rates will decrease the value of any agreement that involves fixed interest and principal payments.

v). Credit risk is the chance that another party will fail to abide by its contractual obligations. A number of companies have lost substantial sums because other parties were either unable or unwilling to provide raw commodities, rental space, or financing at agreed-upon prices. Like other investors, corporations must also consider the problem of **liquidity risk**, or the difficulty of selling corporate assets or investments that are not easily transferable at favourable prices under typical market conditions. Another type of risk is related to the rapidly expanding financial derivatives market. A financial derivative is a security that derives value from price movements in some other security. **Derivative risk** is the chance that volatile financial derivatives such as commodities futures and index options could create losses in underlying investments by increasing price volatility.

9.4 Special Risks of Global Operations

i). Cultural risk is borne by companies that pursue a global investment strategy. Product market differences due to distinctive social customs make it difficult to predict which products might do

well in foreign markets. For example, breakfast cereal is extremely popular and one of the most profitable industries in the United States, Canada, and the United Kingdom. However, in France, Germany, Italy, and many other foreign countries, breakfast cereal is less popular and less profitable. In business terms, breakfast cereal doesn't "travel" as well as U.S.–made entertainment like movies and television programming.

ii). Currency risk is another important danger facing global businesses because most companies wish to eventually repatriate foreign earnings back to the domestic parent. When the U.S. dollar rises in value against foreign currencies such as the Canadian dollar, foreign profits translate into fewer U.S. dollars. Conversely, when the U.S. dollar falls in value against the Canadian dollar, profits earned in Canada translate into more U.S. dollars. Because price swings in the relative value of currencies are unpredictable and can be significant, many multi national firms hedge against currency price swings using financial derivatives in the foreign currency market. This hedging is not only expensive but can be risky during volatile markets.

iii).Government Policy Risk: Global investors also experience government policy risk because foreign government grants of monopoly franchises, tax abatements, and favoured trade status can be tenuous. In the "global friendly" 1990s, many corporate investors seem to have forgotten the widespread confiscations of private property owned by U.S. corporations in Mexico, Cuba, Libya, the former Soviet Union, and in a host of other countries. **Expropriation risk**, or the risk that business property located abroad might be seized by host governments, is a risk that global investors must not forget. During every decade of the twentieth century, U.S. and other multinational corporations have suffered from expropriation and probably will in the years ahead.

9.5 Concept of Uncertainty
It is the case when there is more than one possible outcome to a decision and where the probability of each specific outcome occurring is not known or even meaningful. This may be due to insufficient past information or instability in the structure of the variables. In extreme forms of uncertainty not even the outcomes themselves are known. For eg., drilling for oil in an unproven field carries with it uncertainty if the investor does not know either the possible oil outputs or their probability of occurrence.

Sources of Uncertainty:
There are a few sources of uncertainty:
(1) Uncertain Pattern: We are definite about certain events but uncertain about their pattern, for instance, there is sufficient quantum of rainfall in a particular year but its distribution over different months or days is uncertain. So there is the chance for crop failure by change in pattern of distribution of rains.
(2) Existing Facts and Future Plan: Our belief of certainty and uncertainty about events is influenced by facts already available and future plan.
As for example in constructing a dam, we face uncertainty about incoming water. But we may plan our present need with provision for future increase. The facts about past flow in volume and size reduce uncertainty to a great extent.
(3) Bias of Self-Interest: Our experiences of past events are modified by our personal feeling and prejudice. It is known as bias of self-interest.

(4) Belief about an Event Either Help or Harm: 1 here is the maximum feeling of uncertainty when we believe that an event may either harm or help us, i.e., each one being equally likely.

9.6 Factors Determining Uncertainty:

Uncertainty bearing has been considered as a factor of production. It has a supply price depending upon
(i) The character of the entrepreneur
(ii) On the amount of resources possessed by him, and
(iii) On the proportion of these resources exposed to uncertainty.

9.7 Measures of Uncertainty

i). State Preference Theory: A method of examining the making of decision when there is uncertainty in the outcome. It is used primarily to analyse decisions regarding the choice of investments. The model assumes that there are several distinct possibilities as to the future economic situation. Particular types of investment will yield various known returns, given that one of these economic states results. It is assumed that some absolutely certain form of investment exists, such as holding money in the bank at a fixed rate of interest. This situation can be plotted given a two-state world, putting the return given in state I on one axis and that given in state II on the other for any possible decision. The results of all possible forms of investment can then be plotted with money being represented by a point on the 45° line. Joining all these points together the enclosed area represents all the possible outcomes that can be attained given the appropriate diversification of portfolio. Next a set of indifference curves can be drawn on the graph representing those possible returns in state I or II between which the person is indifferent. Curves farther from the origin will represent a higher level of utility but shape of the curves and, in fact, whether or not they are convex will depend upon the individual's attitudes towards risk and his assessment of the likelihood of one or another of the states resulting.

ii). Mean Variance Analysis: The making of decisions when there is uncertainty in the outcome. It is particularly used in examining how an investor will organise his portfolio. In this model, it is assumed that the determinants of an individual's choice are the expected return and the variability of the return. The individual's choice as to how he will arrange his investments can be plotted on a graph with the expected return on the vertical axis and the variance on the horizontal. There is usually once certain alternative: for instance, holding money at a fixed interest rate. This is represented by a point on the vertical axis, which is zero variance. The other investment possibilities are also placed on the graph. If there is only one other possibility then the line between the certainty point and investment point will give the possibilities between which a person can choose by diversifying his portfolio. A set of indifference curves can be drawn on the diagram, their shape depending on the individual's attitude towards risk.

Analysis: In the analysis of managerial decision making involve risk, we will use such concepts as i) strategy; ii) States of nature and iii) Payoff matrix.

A strategy refers to one of several alternative courses of action that a decision maker can take to achieve a goal. For example, a manager may have to decide on the strategy of building a large or a small plant in order to maximise profits or the value of the firm. *States of nature* refer to conditions in the future that will have a significant effect on the degree of success or failure of

any strategy, but over which the decision maker has little or no control. For example, the economy may be booming, normal, or in a recession in the future. The decision maker has no control over the states of nature that will prevail in the future but the future states of nature will certainly affect the outcome of any strategy that he or she may adopt. Finally, ***Payoff Matrix*** is a table that shows the possible outcomes or results of each strategy under each state of nature. For example, a payoff matrix may show the level of profit that would result if the firm builds a large or a small plant and if the economy will be booming, normal, or recessionary in the future.

9.8 Measurement of Risk:

The method of measuring a risk is to collect a large number of similar cases subject to risk and then divide the number of time the risk has happened by the number of such cases. For example, if there are 100 match units in a particular area and 10 units have been gutted in that year then the risk rate is 10/100 or 10 per cent. Such a measurement is called mathematical value of risk.

Probability Analysis

In ordinary language the term probability refers to the chance of happening or not happening of an event. The use of the word 'chance' in any statement indicates that there is an element of uncertainty. Most of the managerial decisions are decisions related to uncertainty. Tomorrow is not well defined. Managers are required to make some appropriate assumptions for the 'would be tomorrow' and base their decisions on such assumptions. The notion of uncertainty or chance is so common in everybody s life that it becomes difficult to define it. We talk about or we may say, for instance, that it may rain today, or the local team will win the match or the group may fare well in statistics paper. In each of these statements there is as much uncertainty as there is certainty. So from the above, it follows that probability is subjective and changes from person to person. We have not assigned any numerical value to these statements. If we could provide some numerical value, the statements would become more precise. The theory of probability provides a numerical measure of the element of uncertainty. It enables the business managers to take decisions under conditions of uncertainty with a calculated risk.

Definition of Probability:

Probability may be defined as the ratio of the frequency with which a certain event occurs to the total frequency of a sufficiently long sequence of observations taken. Chrystal gives the definition of probability as follows, "If on taking a very large number N out of a series of cases in which an event A is in question, A happens on pN occasions, the probability of the event A is said to be p. Laplace, the French mathematician, has defined it simply as "Probability is the ratio of number of favourable cases to the total number of equally likely cases. If probability is denoted by P, then by this definition we have:

P = Number of favourable cases /Total number of equally likely cases

Relevance of Probability Theory:

Probability analysis is used to reduce the level of uncertainty in decision making. Let us discuss about some of the business situations characterized by uncertainty.

(i) The Individual Investor: An investor who is engaged in buying and selling of equities is trying his maximum to optimize his output. I he price behaviour of securities is subject to uncertainties. The uncertainties in the security price are due to several other factors. Under these circumstances, the managers take business decisions on the basis of their forecast of the probable

future. The ability to take better decisions need not be optimal. It is sometimes referred to as business acumen i.e. sharpness and accuracy of judgment.

(ii) Inventory Problem: The inventory is a complete list of the stocks of raw materials, components, work-in-progress and finished goods held by a business. The quantity of inventory depends upon various factors like demand, lead time, storage cost, ordering cost and shortage costs and the like. Some of these factors are known with certainty. Among other factors, the demand and the lead time fluctuate and are considered to be uncertain factors in inventory problems.

(iii) Investment Problem: This relates to the spending of money for purposes other than consumption in order to earn income from it or to realise a capital gain at a later date. Large firms employ investment analysts with a view to forecasting its future profits. This forecast will be related to the company's present share price and the resultant ratio compared to the same ratio for other companies in the sector and for the market as a whole. The decision has to be taken on the basis of choice, the outcome of which is contingent upon the level of demand.

(iv) Introducing a New Product: When a new product is developed by a firm the immediate problem is to decide whether or not to introduce the product in addition to the existing product mix. The decision maker may not be sure about the acceptability of the product. The introduction of the new product is generally finalised on the basis of test marketing. If he gets contradictory results, he should drop the idea of introducing a new product is purely based on uncertainty.

(v) Stocking Decisions: These refer to the accumulation of strategic raw materials or other commodities that are essential to run the business without any obstruction. The firm has to face the problem of stock policies. In this context special insurance policies covering risk stock, where substantial fluctuations in the value of the risk can occur throughout in the period of policy.
Therefore, insurance policies are unsuitable. To cover such risks, various policies are used. Here the businessman is not sure about the demand pattern, yet he must decide in advance how much units to stock.

4.9 Summary
Managerial decisions are made under conditions of certainty, risk, or uncertainty. Certainty refers to the situation where there is only one possible outcome to a decision and this outcome is known precisely. Concept of Risk is referring to a situation in which there is more than one possible outcome to a decision and the probability of each specific outcome is known or can be estimated. Uncertainty simply means the lack of certainty or sureness of an event. In accounting, uncertainty refers to the inability to foretell consequences or outcomes because there is a lack of knowledge or bases on which to make any predictions. Risk is simpler and easier to manage, especially if proper measures are observed. Uncertainty, as commonly known, is about not knowing future events.

4.10 Keywords

Uncertainty simply means the lack of certainty or sureness of an event.

Risk is the possibility of something bad happening.

Strategy refers to one of several alternative courses of action that a decision maker can take to achieve a goal.

4.11 Self-Assessment questions

1. What is risk and uncertainty?
2. Explain the various types' risks.
3. Enumerate the methods of risk and uncertainty.

9.10 Further Readings

1. Managerial Economics by P.C. Thomas, Kalyani Publishers, 2015
2. Managerial Economics- Principles and Worldwide Applications by Dominick Salvatore, Oxford Publications 6th Edition
3. Managerial Economics by H.Craig Petersen, W.Chris Lewis, and Sudhir K.Jain by Pearson Education 2010.
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LESSON – 10
PRODUCT MARKETS – MARKET STRUCTURES

Learning Objectives
➢ To study the Classification of Markets
➢ To discuss the Characteristics feature of Perfect Market

Structure

10.0 Introduction

10.1 Market structure

10.2 Classification of Market structure based on Nature of competition

10.2.1 Perfect Market

10.2.2 Imperfect Market

10.3 Summary

10.4 Key words

10.5 Self-Assessment Questions

10.6 Further Readings

10.0 Introduction

Market is a place where people can buy and sell commodities. It may be vegetables market, fish market, financial markets or foreign exchange markets. In economic language market is a study about the demand for and supply of a particular item and its consequent fixing of prices, example bullion on market and foreign exchange market or a commodity market like food grains market etc. Market is classified into various types based on the characteristic features. They are classified on the basis of:

Area: family market, local, regional, national and international
Time: very short period, short period, long period, very long period
Commodity: produce exchange, bullion market, capital market, stock market
Nature of Transaction: spot market, forward market and futures market
Volume of business: whole sale market, retail market
Importance: primary market, secondary market, territory market
Regulation: regulated market, unregulated market
Economics: Perfect market and imperfect market

10.1 Market in Economic Sense Implies:
1. Presence of buyers and sellers of the commodity
2. Establishment of contact between the buyer and seller
3. Similarity of the product
4. Exchange of commodity for a price

10.2 Classification of Market Structure Based On The Nature Of Competitor:

9.2.1. Perfect market
9.2.2. Imperfect market

The imperfect market in turn can be classified as
a. Monopoly market
b. Duopoly market
c. Oligopoly market
d. Monopolistic market/ competition

Basically, when we hear the word market, we think of a place where goods are being bought and sold.
In economics, market is a place where buyers and sellers are exchanging goods and services with the following considerations such as:
1. Types of goods and services being traded
2. The number and size of buyers and sellers in the market
3. The degree to which information can flow freely

Perfect Market is a market situation which consists of a very large number of buyers and sellers offering a homogeneous product. Under such condition, no firm can affect the market price. Price is determined through the market demand and supply of the particular product, since no single buyer or seller has any control over the price.

Perfect Competition is built on two critical assumptions:
1. The behavior of an individual firm
2. The nature of the industry in which it operates
Perfect Competition
cannot be found in the real world. For such to exist, the following conditions must be observed and required:
1. A large number of sellers
2. Selling a homogenous product
3. No artificial restrictions placed upon price or quantity
4. Easy entry and exit
5. All buyers and sellers have perfect knowledge of market conditions and of any changes **that occur in the market ϖ Firms are "price takers"**
Imperfect Market
In economic theory, imperfect competition is a type of market structure showing some but not all features of competitive markets. Forms of imperfect competition include:
1. Monopoly
2. Oligopoly
3. Monopolistic competition
Monopoly comes from a Greek word 'monos' which means 'one' and 'polein' means to 'sell' There is only one seller of goods or services A monopoly should be distinguished from a cartel. (Cartel refers to a market situation in which firms agree to cooperate with one another to behave as if they were a single firm and thus eliminate competitive behavior among them

Sources of Monopoly
1. There is only one producer or seller of goods and only one provider of services in the market.
2. New firms find extreme difficulty in entering the market. The existing monopolist is considered giant in its field or industry.
3. There are no available substitute goods or services so that it is considered unique.
4. It controls the total supply of raw materials in the industry and has no control over price. It owns a patent or copyright.
5. Its operations are under economies of scale.

Oligopoly
Oligopoly comes from the Greek word "oligo" which means 'few' and "polein" means 'to sell'.
1. small number of sellers, each aware of the action of others
2. All decisions depend on how the firms behave in relation to each other ϖ In oligopoly, conjectural interdependence is present, that is, the decision of one firm influences and are influenced by the decision of other firms in the market.

Characteristics of Oligopoly
1. There are a small number of firms in the market selling differentiated or identical products.
2. The firm has control over price because of the small number of firms providing the entire supply of a certain product.
3. There is an extreme difficulty for new competitors to enter the market

Monopolistic Competition
Market situation in which there are many sellers producing highly differentiated products. ¬ Monopolistic competition is also perfect competition plus product differentiation

Characteristics of Monopolistic Competition
A large number of buyers and sellers in a given market act independently.
1. There is a limited control of price because of product differentiation.
2. Sellers offer differentiated products or similar but not identical products.
3. New firms can enter the market easily. However, there is a greater competition in the sense that new firms have to offer better features of their products.
4. Economic rivalry centers not only upon price but also upon product variation and product promote on.

10.3 Summary
In economics, the market is the study about the demand for and supply of a particular commodity and its consequent fixing of prices for instance the market may be a bullion market, stock market, or even food grains market. The market is broadly divided into two categories like perfect market and imperfect market. The perfect market is further divided into pure market (which is a myth) and perfect market. The imperfect market is divided into monopoly market, monopolistic market, oligopoly market and duopoly market. Based on the nature of competition and on the number of buyers and sellers operating in the market, the price for the commodity may be settled at the point where the demand forces and supply forces agree upon.

10.4 Key words

Market- Market is a place where people can buy and sell commodities.
Perfect Market- Perfect Market is a market situation which consists of a very large number of buyers and sellers offering a homogeneous product
Imperfect Market- Imperfect competition is a type of market structure showing some but not all features of competitive markets.
Monopoly - **Monopoly** comes from a Greek word 'monos' which means 'one' and 'polein' means to 'sell' There is only one seller of goods or services
Oliogopoly- Oligopoly comes from the Greek word "oligo" which means 'few' and "polein" means 'to sell'.

10.5 Self-Assessment Questions
1. Define the market and market structure.
2. Explain various types of markets with suitable examples.
3. Distinguish between perfect and imperfect market.
4. List out the major characteristic features of a perfect market.

10.6 Further Readings

1. Thomas J.Webster, Managerial Economic Theory and Practice, Emerald Group Publising, 2003.
2. Nick Wilkinson, Managerial Economic, A Problem Solving Approach, Cambridge University Press, Year 2005,
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LESSON -11
PERFECT COMPETITION AND MONOPOLY MARKET

Learning objectives

➢   To discuss the characteristic features of monopoly market
➢   To frame Perfect Market Under Monopolistic competition
➢   To study the Difference Between Perfect and Monopoly Market

Structure

11.0 Introduction

11.1 Characteristic Features of Market

11.1.1 Perfect Competition

11.2 Equilibrium of firm under Perfect Competition

11.3 Equilibrium of industry under Perfect Competition

11.4 Monopoly

11.5 Summary

11.6 Key words

11.7 Self-Assessment questions

11.8 Further Reading

11.0 Introduction

Mono means single, poly means seller and hence monopoly is a market structure where only one sells the goods and many buyers buy the same. Monopoly lies at the opposite extreme from perfect competition on the market structure continuum. A firm produces the entire supply of a particular good or service that has no close substitute.

11.1 Characteristic Features of Market:

1. A single seller in the market
2. There are no close substitutes
3. There is a restriction for the entry and exit for the firms in the market
4. Imperfect dissemination of information

This does not mean that the monopoly firms are large in size. For example a doctor who has a clinic in a village has no other competitor in the village but in the town there may be more doctors. Therefore the barrier to the entry is due to economies of scale, economies of scope, cost complementarities, patents and other legal barriers

11.1.1 Perfect Competition

Perfect Competition in economic theory has a meaning diametrically opposite to the everyday use of the term. In practice, businessmen use the word competition as synonymous to rivalry. In theory, Perfect Competition implies no rivalry among firms. Perfect Competition, therefore, can be defined as a market structure characterized by complete absence of rivalry among the individual firms. That is to say perfect competition is a market structure where there is a perfect degree of competition and single price prevails. Perfect Competition Market is a hypothetical market structure where in every seller takes the market prices as the price of his own product, firms are incapable of influencing the market price either by acting singly or in a group

Main Features

(i) **Homogeneous Product**: In a perfect competition, it is not possible to distinguish between the products of individual firms. There are no distinctive features of the product associated with any specific firm. The product, in that sense, is homogeneous and undifferentiated. To the buyer, product supplied by one firm is a perfect substitute of that supplied by another.

(ii) **Large Number of Sellers:** Perfect competition is characterized by a large number of firms. Here, the term large denotes the fact that no individual firm is in a position to significantly influence the total supply of the industry and thereby affects the price of the product. Every firm in the industry is thus, a price taker. It can sell any quantity of its own product at the going price. For it, the demand for its product is perfectly elastic.

It, of course, must be remembered that the maximum quantity, which this firm can supply, is insignificantly small when viewed in relation to the aggregate supply of the industry as a whole.

(iii) **Large Number of Buyer:**
Perfect competition is also characterized by a large number of buyers who are in competition with each other for the available supply. Their number is so large that any single buyer may change the quantity purchased without significantly affecting the total demand in the market and affecting the price of the product. Like an individual firm, an individual buyer is also a price taker. He can buy any quantity of the product he likes at going price. To him, the product has perfect elasticity of supply.

(iv) **Full Knowledge of Market:**
It is assumed that in perfect competition, every buyer and seller has full knowledge of the prevailing price of the product, as also the prices being asked by the sellers and being offered by the buyers. This 'perfect knowledge' enables every buyer and seller to make use of any opportunity that may exist to strike a better bargain.

(v) Economic Rationality: Economic rationality is another feature of perfect competition. It means that every buyer and seller is motivated by his own economic interest in his decisions to buy or sell. This, coupled with the assumption of perfect knowledge, ensures that a uniform price prevails in the market.

(vi) No Transportation Cost: It is assumed that there is no transaction cost to be incurred by buyers and sellers in their activities. The price paid by a buyer is exactly equal to the price received by the seller.

There is no resource cost in terms of time or other expenses to be incurred i.e. there are no transaction costs. In particular, a seller has no need to incur any selling expenses (say, in the form of advertisements) because his product is not differentiated from the products supplied by other sellers.

(vii) Free Entry and Exit: Perfect competition is also characterized by free entry and exit. Basically, the terms entry and exist apply to the suppliers, though their coverage can be extended to buyers also. It means that, given enough time, any existing firm can close down and leave the industry or any new firm can enter the industry. There is no legal, institutional, or technical hurdle in doing so. It is only estimated economic benefits or losses that guide the firms in these decisions. Similarly, any existing buyer of the product can increase his purchases, cut them or reduce them to zero. New buyers can also enter the market and offer to buy any quantity they like.
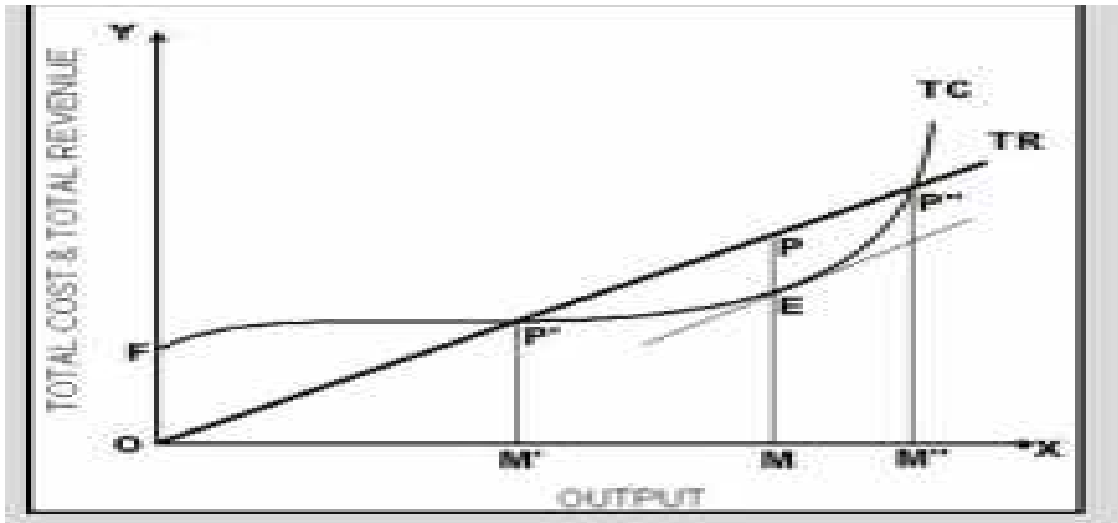
11.2 EQUILIBRIUM OF THE FIRM UNDER PERFECT COMPETITION

Under perfect competition, the firms are unable to alter the price of the product by changing the quantity of its own output. The prices of the input are given; therefore, cost conditions are also given. In other words, under perfect competition, it can only decide to alter the quantity of its output without changing price of the product. A firm is said to be in equilibrium when its profits are maximum, which in lieu depends on the cost and revenue conditions of the firm. The concepts of cost and revenue vary in short run and long run. Thus a competitive firm has four equilibrium states differing on the basis of period of operation as follows: – Short Run equilibrium of a Competitive Firm – Long Run equilibrium of a Competitive Firm – Short Run equilibrium of a Competitive Industry – Long Run equilibrium of a Competitive Industry

Short Run Equilibrium of a Competitive Firm

Under the short run period, the following are the major assumptions; – Price of product is given in the market at which a firm can sell any quantity – Plant size of firm is given(constant) – Firm is facing given short run cost curves The equilibrium conditions in such a case are similar as stated in previous unit. There are two approaches to deriving the maximum profit i.e.π = TR less TC or at a point where MR equates MC. Since a perfectly competitive firm is a price taker, it is faced with a straight line demand curve i.e. AR is parallel to X axis as its Marginal Revenue (MR). It can also be seen that, given the assumption of profit maximisation by the firm, it will be in equilibrium when there is no scope for either increasing its profit income or reducing its loss by changing the quantity of output. It cannot improve its economic position by changing the output.

Equilibrium of a Firm using TR and TC Curves

TR is Total Revenue Curve TC is Total Cost Curve P is Equilibrium Point, where the distance between TR and TC is maximum A general case of this equilibrium of the firm, in the short run and under perfect competition

π = TR – TC is maximum; where TR = P x Q (P is given as constant) and TC is total cost. Therefore, in short run since prices are given, the TR curve is a straight line through the origin O as shown in the figure. Its slope is positive and equal to the price of the product and Average Revenue (AR). In the short run, a firm has to incur both fixed and variable costs. Fixed costs are there even when the output is reduced to zero. As a result, total cost (TC) curve starts from Y-axis at a positive distance from origin O. Assuming that fixed costs are OF, the TC curve starts from point F on the Y-axis. The short run average cost curve (SAC) is U-Shaped. The total cost curve in the figure is represented by TC. Before point P', TC > TR $\Rightarrow$ Total Loss From P' to P", TC <TR $\Rightarrow$ Normal Profit At P, PE $\Rightarrow$ Maximum Profit After P", TC > TR $\Rightarrow$ Total Loss Thus, OM is the equilibrium output of the firm in the short run under perfect competition. At any other output, its total profit is less than PE. It is also noted that if the output is reduced to OM' or increased to OM", the profit of the firm is reduced to zero. Further, for output less than OM' or greater than OM", TC exceeds TR and results in a loss for the firm

Equilibrium of a Firm using MC and MR Curves
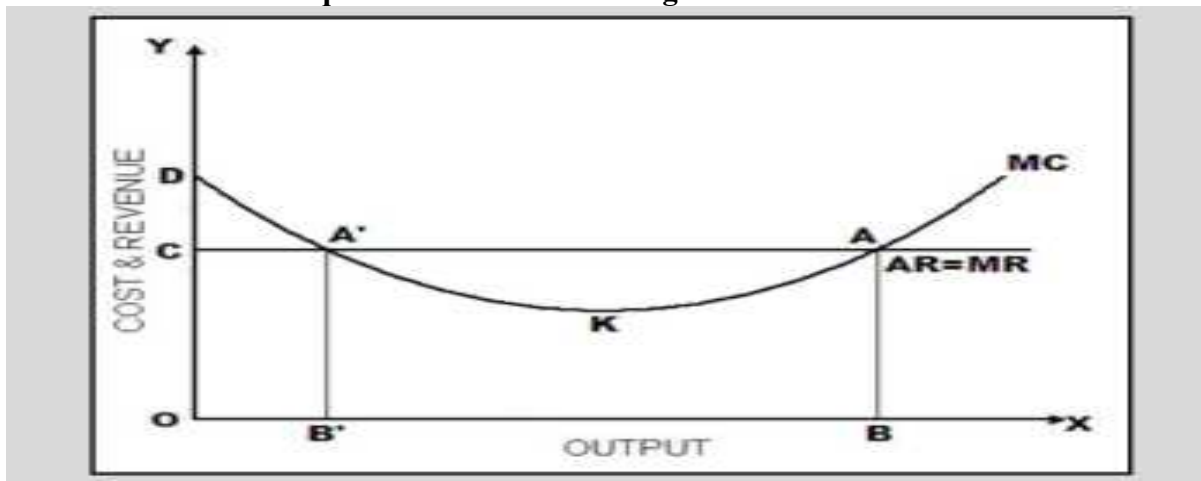
On account of perfect competition, the demand for the product of the firm is perfectly elastic. The firm can sell all its output at the going price in the market. Accordingly, its demand curve (AR curve) runs parallel to X-axis throughout its length and its MR curve coincides with AR curve. As regards the supply side, we should recall the set of four cost curves of the firm, namely, the AFC, the AVC, the MC and the ATC. Out of these, the supply curve of the firm is that portion of the MC curve which lies above AVC curve and is upward sloping. The actual equilibrium of the firm is determined by the intersection of its supply and demand curves. An explanation of this phenomenon is provided below. To begin with we note that, in the short run, the firm cannot avoid fixed costs. They have to be incurred even if production is reduced to zero. However, the variable costs are directly related to the quantity of output. The implication is that, in the short run, the firm cannot avoid losses by not producing. Therefore, it decides to continue production even at a loss, provided the loss does not exceed its fixed costs. It means that the firm would decide to produce if its average price (that is, per unit price of the good) equals or exceeds its AVC.

Equilibrium of a Competitive Firm in Short Run
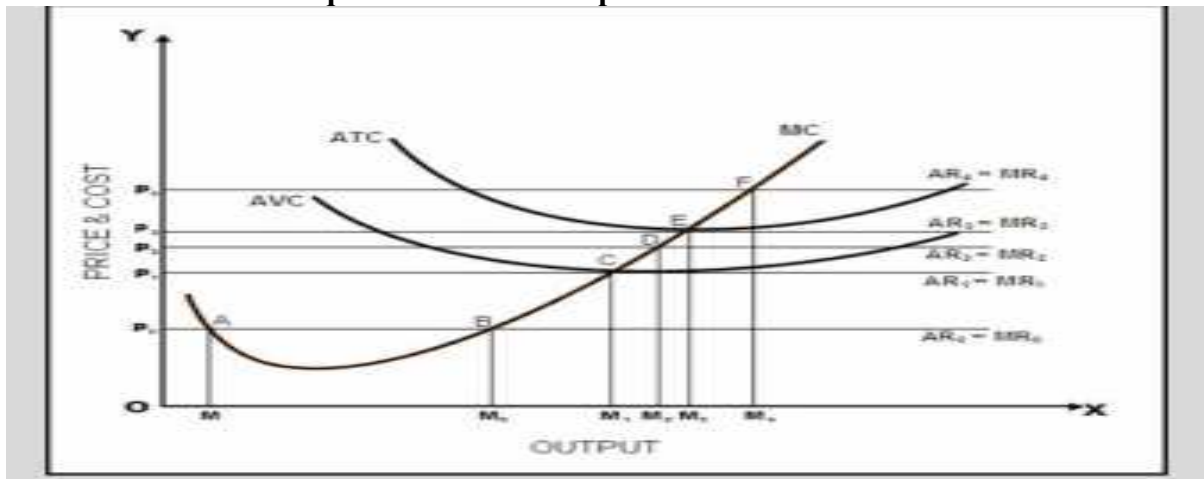
To consider five different prices to illustrate the supply behaviour and associated equilibrium of the firm. There is an average revenue curve corresponding to each price. It runs parallel to X-axis and the MR curve also coincides with it. 1. When the price is OP_0 , the corresponding MR_0 curve cuts MC curve at two points, A and B. At point A, none of the above-stated two conditions of equilibrium is satisfied. At point B, MC curve cuts MR_0 curve from below but the second condition is not satisfied. AR is still less than AVC. Therefore, the firm incurs a loss greater than its fixed cost if it decides to produce when the price is OP_0 . The firm, therefore, decides to close down but it cannot leave the industry. 2. If the price happens to be higher and equal to OP_1 (that is, equal to the least possible average variable cost), the firm decides to produce. In this case, not only MC curve cuts MR_1 curve from below (a point C); AR_1 is also equal to AVC. Thus, we find that either the firm does not produce at all, or it produces at least equal to OM_1 . 3. In the third case, price (OP_2) exceeds AVC but is still less than ATC. MR_2 and MC curves intersect each other at point D. The firm produces OM_2 . It still incurs a loss but less than its fixed costs because it is able to recover a portion of the latter. 4. In case the price rises to OP_3 , the firm is able to recover its full cost including fixed costs. Its MC curve cuts MR_3 curve from below at point E and AR_3 = ATC. All the conditions of its equilibrium are satisfied. It produces OM_3 .

## 11.3 EQUILIBRIUM OF INDUSTRY UNDER PERFECT COMPETITION

An industry comprises all the firms which are producing goods which the buyers consider substitutes of each other. As such the determination of price of such a product is the result of interaction between total demand for the output of all the firms taken together and their supply. On the demand side, the important fact to be noted is that a change in its supply affects the price of the product also. The industry is not a price taker. Though the contribution of an individual firm in total supply is so insignificant that it cannot make any noticeable difference to the price of the product, this is not so with the industry. The change in supply made by the firms taken together alters the aggregate supply to such an extent that it cannot sell more without lowering the price. This results in a downward sloping demand curve for the industry. The fact of a negatively sloped demand curve for the industry can also be understood as follows. A firm can sell more of its output by attracting customers from its competing firms. In the process, the total sales of the industry need not increase. But an industry can sell more when the existing buyers buy more of its product and/or new buyers enter the market and buy its product. Now it follows that existing buyers are already equating their marginal utility with the price. They would buy more only if price falls. Similarly, for the new buyers, the existing price is higher than the marginal utility of the product. And, therefore, they would also buy more of the good only if the price is reduced. Accordingly, the demand curve for the product of the firm must have a negative slope indicating that more of the product can be sold only by reducing its price.

11.4 Monopoly

The term monopoly means a single seller. In economics, this term refers to a firm the product of which has no close substitute in the market. It is, in that sense, a single firm industry. Moreover, irrespective of the profit income of the existing producer firm, new firms cannot enter the industry. Hurdles to their entry may be on account of various reasons. There may be legal barriers, or the producer may own a technology or a naturally occurring substance which others cannot avail of. It is also possible that the size of the market may be too small and no new firm may find it economically worthwhile to enter it. In the absence of a substitute product, the monopolist is free to fix a price of his choice. He can refuse to sell his product for a price below the one decided by him. However, he cannot determine the demand for his product. He cannot force the buyers to buy his product at a price of his choice. A buyer will buy it only if its price does not exceed its marginal utility to him. Therefore, if the monopolist wants to increase his sales, he has to reduce the price of his product so as to induce – existing buyers to buy more – new buyers to enter the market Therefore, the demand conditions for his product are not the ones which are associated with a firm under competitive conditions. Instead, the demand conditions faced by him are similar to the ones which are faced by the industry as a whole. In other words, a monopoly firm faces a negatively sloped demand curve for his product. In the long run, the demand curve can shift both in its slope and location. However, there is no theoretical basis for determining the direction and extent of this shift. As regards his cost of production, it may be assumed that a monopoly firm faces a given technology. Moreover, the monopolist faces conditions similar to those faced by a single firm under competitive conditions. He is not the sole buyer of the inputs used by his firm, but only one in the entire market. He has no control over the prices of the inputs used by him. We have seen earlier that when a firm aims at maximising its profit, it attains its equilibrium when – its MC curve cuts its MR curve from below – its AR > AC Short Run Equilibrium of a Monopolist In the short run, by definition, the monopolist firm cannot vary all its factors of production. Its short run cost curves are similar to the ones faced by

a firm operating in the short run and under perfect competition. It is also noteworthy that, in the short run, the monopolist may incur a loss but it will shut down the plant only if the loss exceeds its fixed costs. On the other hand, if the demand for its product is quite strong, it may make an extra profit.

**Short Run Equilibrium of a Monopolist**
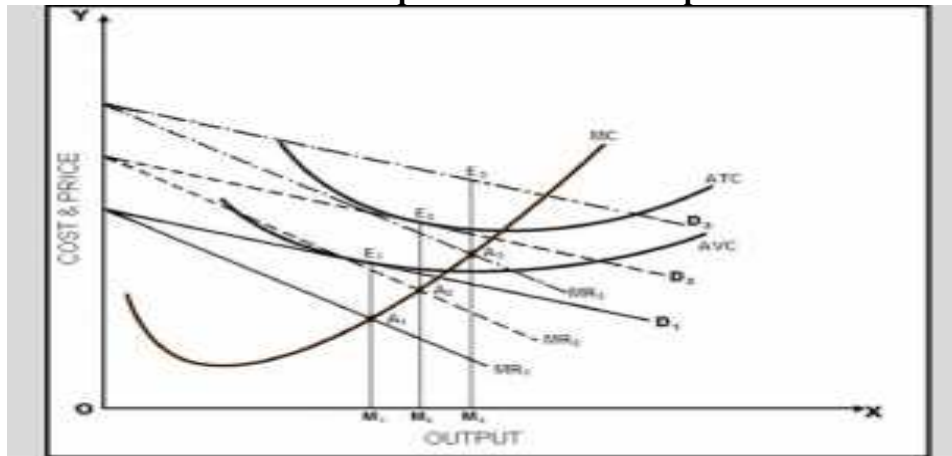
Determination of short run equilibrium of a monopoly is depicted in Fig. 4.9 with quantity of output measured along X-axis. Correspondingly, price and cost of production are measured along Y-axis. We have drawn three cost curves of the monopoly, namely, average variable cost curve, average total cost curve and marginal cost curve. Similarly, three alternative demand curves have been drawn to explain alternative possible positions of equilibrium. 1. Demand curve labeled D1 is tangent to AVC curve at point E1 . Its corresponding marginal cost curve MC intersects MR1 curve from below at point A1 . Thus, we note that while the first condition of equilibrium of the firm is satisfied, the monopolist is not able to recover his full cost of production. However, the loss which is equal to fixed costs cannot be reduced by closing down the plant. In this situation, therefore, the monopolist decides to produce OM1 quantity of output, sell it at price E1M1 and suffer a loss equal to fixed costs. Note that there would be no production if the demand curve lies to the left of its position of D1 . In that case the monopolist would have added to his losses by operating his plant. Consequently, his best option would have been to close down the plant and minimize the loss to fixed costs. 2. If the demand curve lies to the right of D1 , the monopolist is able to recover a part of his fixed cost also. He is able to recover his full cost of production if the demand curve happens to be tangent to ATC curve (such as D2). With D2 as the demand curve, equilibrium position of the monopolist is given by the intersection of MC curve with MR2 curve at A2which corresponds to the point of tangency (E2) of D2 with ATC curve. In this case not only MC curve cuts MR2 curve from below but, at the same time, AR = ATC. The monopolist makes a normal profit by producing OM2 and selling it at price E2M2 . 3. The monopolist may earn an abnormal profit if the demand curve lies further to the right of D2 (such as D3). As before, the equilibrium position of the monopolist is determined with reference to the point of intersection between MC curve and MR3 curve at A3 . The monopolist decides to produce OM3 and is able to sell it at price E3M3 .

Long Run Equilibrium of a Monopolist

In the long run, by definition, the monopolist can vary all the inputs. Therefore, the determination of equilibrium of the firm can be analyzed with the help of only two cost curves, namely, AC and MC. Moreover, the monopolist would not stay in the market if he is to operate at a loss. By implication, therefore, the demand curve must be tangent to the AC curve or must lie to the right and intersect it twice.

Long Run Equilibrium of a Monopolist
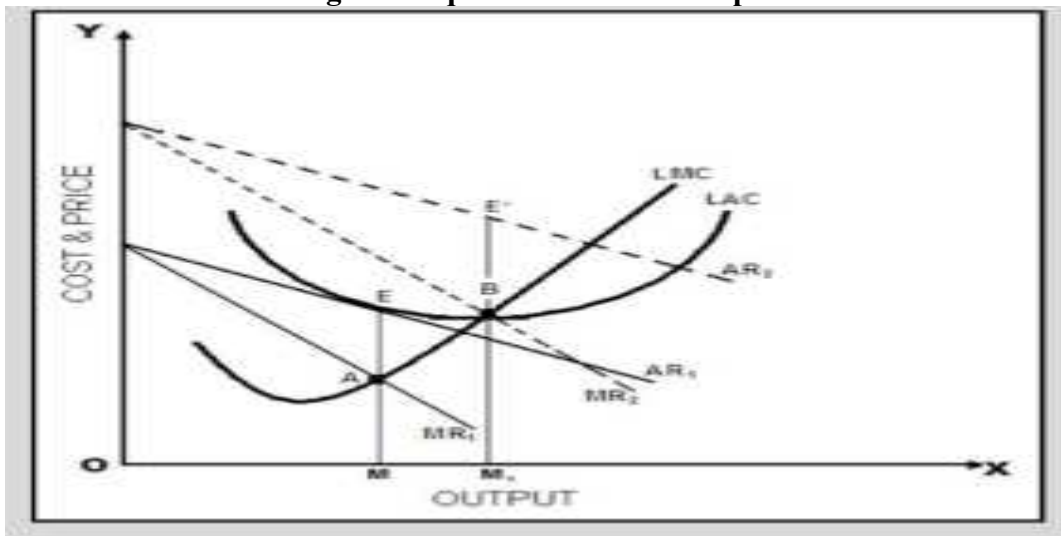
In long term AC and MC curves of the monopolist are drawn U-shaped. The reasons for their being U-shaped have been discussed earlier. As before, equilibrium of the firm is that its MC curve should cut MR curve from below and its AR should be greater than or equal to AC. In Fig., we depict two alternative cases of the determination of equilibrium of the monopolist, namely, (i) with normal profit, and (ii) with abnormal profit. Remember that the monopolist will not operate in the long run if there is a loss.

11.5 Summary

One way to keep out potential competitors to have the government make it illegal for others to operate in the particular industries. Where the monopoly or cartel maintains price that higher than normal profits other business are attracted to the industry. This additional competition then tends to force price and profit down. In order for the monopoly or cartel to continue to succeed in maintaining profits above the competition level, it must find ways to prevent others form entering the industry.

11.6 key words
Perfect Competition- Perfect Competition, therefore, can be defined as a market structure characterized by complete absence of rivalry among the individual firms
Total cost- Total cost refers **to the total expense incurred in reaching a particular level of output**; if such total cost is divided by the quantity produced, average or unit cost is obtained.
Total Revenue-Total revenue is the full amount of total sales of goods and services. It is calculated by multiplying the total amount of goods and services sold by their prices

Marginal Revenue-Marginal revenue (MR) is the increase in revenue that results from the sale of one additional unit of output

Marginal Cost- Marginal cost is the change in the total cost that arises when the quantity produced is incremented, the cost of producing additional cost.

11.7 Self-Assessment Questions

1. What is Monopoly? Briefly discuss the characteristic features of Monopoly?
2. Explain the long run Equilibrium under Perfect competition
3. Discuss the short run equilibrium monopolist

11.8 Further Readings

1. Thomas J.Webster, Managerial Economic Theory and Practice, Emerald Group Publising, 2003.
2. Nick Wilkinson, Managerial Economic, A Problem Solving Approach, Cambridge University Press, Year 2005,
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LESSON -12
MONOPOLISTIC COMPETITION, DUOPOLY, OLIGOPOLY

Learning Objectives
- ➢ To study the Monopolistic Competition
- ➢ To Study the characteristic features of oligopoly market, Duopoly
- ➢ To Understand the Kinked demand curve

Structure

12.0 Introduction

This is a market consisting of a few firms relatively large firms, each with a substantial share of the market and all recognizing their interdependence. It is a common form of market structure. The products may be identical or differentiated. The price determination and profit maximization is based on how the competitors will respond to price or output changes.

12.1 Monopolistic Competition

The types of market under which we discussed the determination of equilibrium of a firm/industry in the foregoing portions do not exist in reality. They are all hypothetical and only help us in analyzing the real markets in a logical and systematic manner. The case of a

monopolistic competition is one such market which we shall discuss below. A monopolistic competition is defined as that market structure in which each seller produces a 'differentiated product'. The concept of product differentiation means that the product marketed by one seller can be distinguished from the products marketed by other sellers in some form or other. Some of the important methods of product differentiation include: trademarks, brand names size packing or color etc. of the item and technical specifications etc. Thus, in this market structure, each seller is a monopolist of his differentiated product. The buyers can get it only from him and from none else. At the same time, however, the products offered by different sellers are close substitutes of each other. The buyers are always comparing the prices of their products together with the perceived 'quality' of each. In other words, there is also an intense competition between suppliers for a share in the market. For this reason, it is a market structure in which there is a competition between a group of firms while each firm is a monopolist of its own product. It is, therefore, termed as monopolistic competition. However, defining a monopolistic competition in this manner, though very realistic, poses certain problems of its own. – Since the products supplied by the competing firms are not homogeneous, therefore, we cannot define the concept of a 'market demand for the product' precisely, that is, it is not possible to determine the average revenue curve of the 'industry' as a whole. – Not only that, it is very difficult to even define an industry in a precise manner for the reason that its constituent firms are not supplying the same product. At the most, we may think of a 'group' of firms selling close substitutes of each other. – It is not possible to have a satisfactory definition of even a 'group'. This is because the 'product group' (such as scooters, or motor cycles) under consideration is itself in competition with other 'product groups'. Given these limitations, let us mention some of the salient features of the monopolistic competition.

Market situation in which there are many sellers producing highly differentiated products. Monopolistic competition is also perfect competition plus product differentiation.

Product differentiation gives each monopolistic competitor some market power, since each competitor can raise price slightly without losing all its customers

12.2 Characteristics of Monopolistic competition

1. The first feature of monopolistic competition, as mentioned above, is product differentiation. A buyer can get a specific type of the 'product' only from one final source (may be, through the dealers and sub dealers, etc.).

2. Product differentiation necessitates incurring of selling expenses on the part of firms under market structure of monopolistic competition.

3. Monopolistic competition is characterized by a large number of sellers. The demand and supply conditions of these sellers are inter-dependent. However, in spite of their large number, no individual seller becomes a price taker. He has the authority to demand a price of his choice, though he also considers the demand conditions for his product while exercising this authority. In other words, in spite of there being a large number of sellers, the demand curve for the product of an individual seller is downward sloping. Its demand is not perfectly elastic. It also has large number of buyers also.

4. The fact that each firm produces a 'differentiated product' implies that it can distinguish it   further by varying its 'quality'. An improvement in the 'quality' implies an increase in its average cost of production while deterioration in quality implies a reduction in average cost of production. Also an improvement in quality is expected to 'increase' the demand for the product so that, for each given quantity, the buyers are ready to pay a higher price.

5. The firms under the monopolistic competition face a competitive market as regards the inputs used by them. They also have to operate within a given technological range. The result is that no firm is able to compete out its rival by producing a 'better quality' product at a lower average cost.

6. It is assumed that each firm has an accurate knowledge of its demand and cost conditions. This feature implies that the firm is able to estimate the impact of any change in the quantity and/or quality of its product on both its cost of production and average revenue. This knowledge, therefore, enables the firm to maximize its expected profit income.

7. Every existing firm can leave the 'group' of firms belonging to the 'product group' (sometimes inaccurately called the industry). Similarly, new firms can enter the group and produce close substitutes of the existing products in the group. This free entry and exit of firms ensures that, in the long run, no firm incurs a loss and no firm is able to earn abnormal profit.

8. At the same time, every firm in monopolistic competition is assumed to pursue the goal of profit maximisation. Its aim is not to maximize sales proceeds, or an increase in the market share, etc.

9. It is also assumed that in monopolistic competition all firms have identical cost and demand conditions.

This simplifying assumption helps us in analyzing the determination of group equilibrium. It enables us to analyze the working of an individual firm and use it as the representative of the working of the entire group. In the absence of this assumption, we have to separately work out the determination of output, product quality, and price of each firm within the group.

10. Product differentiation necessitates incurring of selling expenses on the part of firm under the monopolistic competition.

Since product differentiation and selling expenses form the foundation of monopolistic competition.

EQUILIBRIUM OF THE FIRM UNDER MONOPOLISTIC COMPETITION

While analyzing the determination of equilibrium of a firm under monopolistic competition, it should be noted that we can have two types of its demand curve. Both will be downward sloping. – It is assumed that a price revision by our firm is not associated by a retaliatory action by its rival firms. In this case, the demand curve of the firm under consideration will have smaller slope. The elasticity of demand for its product will be more elastic. – In case, the rival firms follow the price revision by our firm, then the demand for its product will become less elastic. Our firm will have to resort to a bigger reduction in price to get a given addition in the demand for its product. Similarly, for a given fall in demand, it will be possible to raise the price by a higher amount. Its demand curve will be steeper in this case

Short Run Equilibrium under Monopolistic Competition
At this stage, we need not repeat the conditions of equilibrium of a firm. We may also recall that in the short run, the firm may be able to earn an abnormal profit if the demand for its product is quite strong. The abnormal profit is not competed away because in short run new firms cannot enter the 'group' and enhance the supply of the 'product group'. In other words, it is not possible for additional supplies of close substitutes to enter the market and reduce the absolute share of our firm. Similarly, it is also possible for it to operate at a loss subject to the condition that the loss should not exceed its fixed costs. As in the case of other market structures, in monopolistic competition also a firm is faced with certain fixed costs in the short run. In addition to some production costs, they may include some components of firm's selling expenses as well.
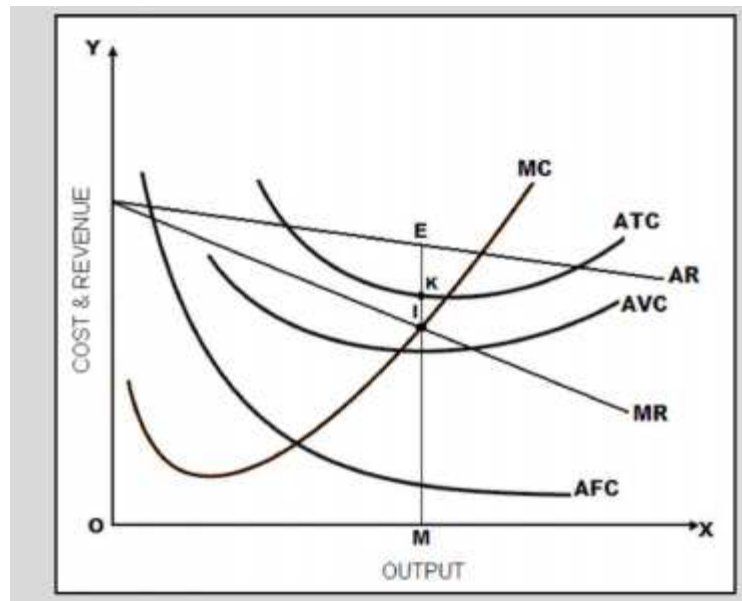
Similarly, some other components of selling expenses can fall in the category of variable expenses both AR and MR curve of the firm have negative slopes. AVC curve comprises not only variable production costs but also variable components of selling expenses. Both MC and AVC curves are expectedly U shaped and the former cuts the latter at its lowest point. ATC curve represents average of the total cost of the firm, including fixed selling expenses. Equilibrium of the firm is determined with reference to the point I where MC curve of the firm intersects its MR curve from below. The firm decides to produce a quantity of OM while it is able to charge a price of EM per unit. It should be noted that the firm is making an extra profit of EK per unit which is not competed out by the entry of rival firms. However, depending upon the relative location of cost and revenue curves, the firm could also be in equilibrium with – only normal profit – covering a part of fixed costs and therefore, incurring a loss less than its fixed costs, – a loss equal to total fixed costs – In the last case, the AR curve would be tangent to AVC curve.

Long Run Equilibrium under Monopolistic Competition
In discussing long run equilibrium of a firm under monopolistic competition we should specifically note the following facts. – In the long run, there are no fixed costs. The firm can not

only vary all its inputs, it can also vary its selling costs. Moreover, it is possible for the firm to make a choice between alternative product qualities. – No firm can be compelled to operate at a loss. It can always leave the industry. Therefore, when loss making firms leave the group, the absolute market shares of the remaining firms increase. Their demand curves shift rightwards and upwards. This process continues till it becomes possible for the remaining firms to produce without incurring a loss. – Similarly, if the demand is strong so as to bring abnormal profit income to the existing firms, new firms can enter the 'product group', and produce close substitutes of the existing products. This increases the total supply of the 'product group' and with given demand, reduces the demand shares of the existing firms. As a result, the demand curve of an individual firm cannot stay above its long term average cost curve. – Each firm operating under monopolistic competition is thus able to make a choice between alternative combinations of – product quality – product differentiation – selling costs – In addition, it must also take note of the fact that any variation of price on its part can lead to a price reaction by its rivals also. Conceptually, therefore, it faces a much steeper demand curve than would be case without price reaction by its rivals
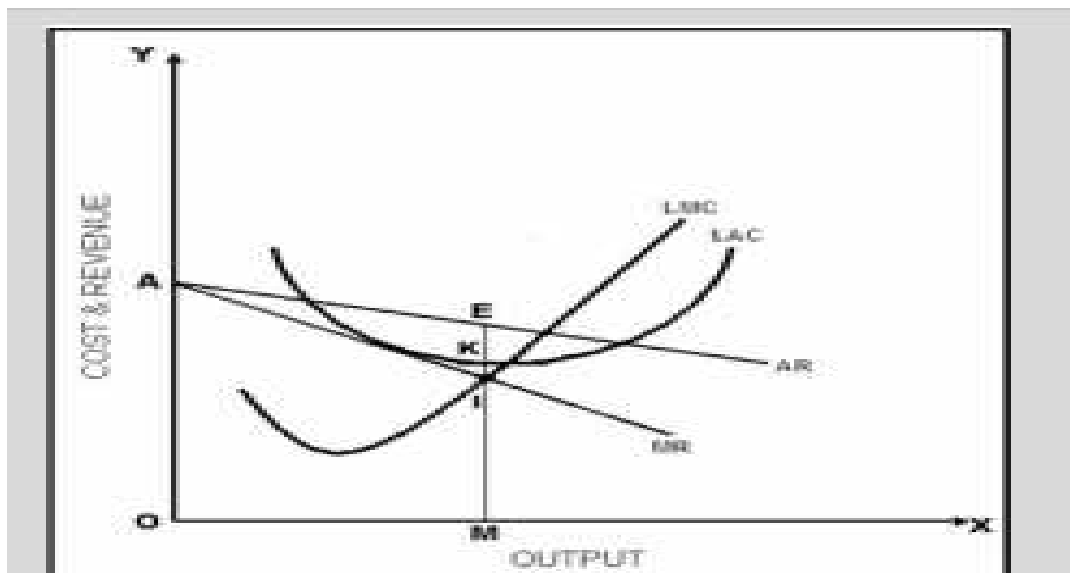
It follows from the above that a firm under monopolistic competition is exposed to a continuous interaction with rest of the firms in the group. Its decisions are not independent of what the other forms are doing. It also notes the fact that its demand curve not only depends upon the actions of its rivals but also upon the quality of its own product and the selling expenses incurred by it. Therefore, it considers alternatives combinations of its cost components relating to product quality and selling expenses etc. and estimates the corresponding slope and position of the demand curve. Let us assume that our firm has selected the product quality and the amount of selling expenses as represented by LAC curve in Fig. 4.13 which has its corresponding long term MC curve (LMC). The latter curve intersects MR curve from below at I. In this case, the firm would decide to produce a quantity OM of its product and sell it at a per unit price of EM which brings it a per unit profit of EK. However, as noted above, in the long run, the firm is not allowed to earn abnormal profit. New firms enter the market and produce close substitutes. This results in a reduction in the market shares of the existing firms including ours. Its AR curve shifts leftwards till it becomes tangent to LAC curve, as at point E in Fig. 4.14. Once this happens, our

firm earns only a normal profit. There is no incentive for new firms to enter the market. Similarly, the process of entry of new firms and reduction in market shares of existing firms cannot continue indefinitely. Once the profit income of the existing firms is reduced to normal level, there is no incentive left for new firms to enter the market. As a result, long term equilibrium of a firm under monopolistic competition is given by the point of tangency between its AR curve with its LAC curve which is at point E in Fig. 4.14 in the case of our firm. It should be noted that in monopolistic competition, firms earn only normal profit, in the long run as they do under perfect competition. Presence of monopolistic competition does not improve their profitability. Further, on account of – negatively sloping demand curves – U-shaped long term average cost curves – free exit and entry of firms – competition among firms They all produce below their 'optimum capacity' as the equilibrium is to the left of minimum point of the average cost curve. Some productive capacity of theirs remains unutilized. This increases their average cost of production which they charge from the consumers by adding them to the supply price. The firms operating under monopolistic competition also incur selling expenses which they charge from the consumers.

12.4 Monoposony

A market situation in which there is only one buyer of goods and services in the market. It is sometimes considered analogous to monopoly in which there is only one seller of goods and services in the market.

Monopsony power gives them the ability to control their unit cost for an input which is similar to the way the monopoly controls their price.

12.5 Oligopoly

Oligopoly arises when a small number of large firms have all or most of the sales in an industry. Examples of oligopoly abound and include the auto industry, cable television, and commercial air travel. Oligopolistic firms are like cats in a bag. They can either scratch each other to pieces or cuddle up and get comfortable with one another. If oligopolists compete hard, they may end up acting very much like perfect competitors, driving down costs and leading to zero profits for all. If oligopolists collude with each other, they may effectively act like a monopoly and succeed in pushing up prices and earning consistently high levels of profit. Oligopolies are typically characterized by mutual interdependence where various decisions such as output, price, advertising, and so on, depend on the decisions of the other firm(s). Analyzing the choices of oligopolistic firms about pricing and quantity produced involves considering the pros and cons of competition versus collusion at a given point in time.

12.6 Different Types of Oligopoly:

1.Pure and perfect oligopoly

If the firm produced homogeneous products it is perfect oligopoly. If there is product differentiation then it is called as imperfect or differentiated oligopoly.

2.Open and closed oligopoly

Entry is not possible. When it is closed to the new entrants then it is closed oligopoly. On the other hand entry is accepted in open oligopoly.

3.Partial and full oligopoly

Under partial oligopoly industry is dominated by one large firm who is a price leader and others follow. In full oligopoly no price leadership.

4.Syndicated and organized oligopoly

Where the firms sell their products through a centralized syndicate. On the other hand firms organize themselves into a central association for fixing prices, output and quotas.

12.7 Characteristic Features Of An Oligopoly Market

1. Few sellers
2. Lack of uniformity in the product
3. Advertisement cost is included
4. No monopoly competition
5. Firms struggle constantly
6. There is interdependency
7. Experience of Group behavior
8. Price rigidity
9. Price leadership
10. Barriers to entry

Price rigidity:

The price will be kept unchanged due to fear of retaliation and prices tend to be strict and inflexible. No firm would indulge in price cutting as it would eventually lead to a price war with no benefit to anyone.

Reasons for rigidity are: firms know ultimate outcome of price cutting; large firms incur more expenditure than others; keeping the price low to reduce the new entrants; increased price rise leads to reduction in number of customers.

The oligopoly prices are indeterminate. The demand function is then an important ingredient in the price determination mechanism. Several theories of oligopoly prices have been developed and each one of them is based on a particular assumption about the reactions of the rival firms and the firms' actions. The popular models and appropriate classifications are discussed below.

12.8 Oligopoly Models

1.Cournot oligopoly

There are few firms producing differentiated or homogeneous products and each firm believes that competitors will hold their output constant if it changes its output.

2.Stackelberg oligopoly

Few firms and differentiated or homogeneous product. The leader chooses an output and others follow.

3.Bertrand oligopoly

Few firms produce identical product. Firms compete in price and react optimally to competitor's prices.

4.Sweezy oligopoly

An industry in which there are few firms serving many consumers. Firms produce differentiated products and each firm believes competitors will respond to a price reduction but they will not follow a price increase.

12.9 Kinked Demand Curve

When a firm increases its price, the rival firms do not follow it by increasing their prices in turn this increases its market share. When a firm reduces its price rival firms immediately follows it by decreasing their prices. If they do not do so, customers go to the firm which is offering at lower price. This is the fundamental behaviour of the firms in an oligopoly market. Let us understand the unique characteristic feature of kinked demand curve.

The demand curve in oligopoly has two parts.

(i) relatively elastic demand curve
(ii) relatively inelastic demand curve as shown in the graph below.

In oligopoly market firms are reluctant to change prices even if the cost of production (or) demand changes. Price rigidity is the basis for the kinked demand curve. Each firm faces demand curve kinked at the currently prevailing price. At higher prices demand is highly elastic, whereas at lower prices it is inelastic.

Graph 1 – Kinked Demand Curve
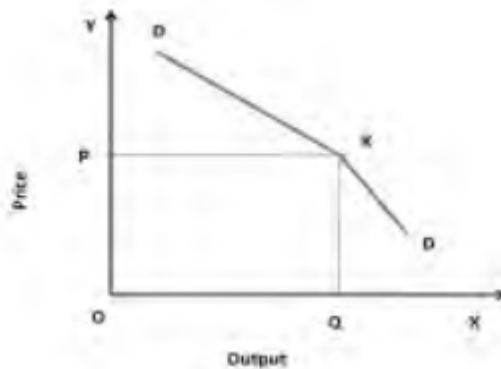
From the graph we can understand that OP is the given price. There is a kink at point K on demand curve (DD). Therefore DK is the elasticity segment and KD is the inelastic segment. There is a change in the slope of the demand curve at K. At this situation the firm follows the prevailing price and does not make any change in it because rising of price would contract sales as demand tends to be more elastic at this stage. I would also fear losing buyers due to competitor's price who have not raised their prices. On the other hand lowering of price would imply an immediate retaliation from the rivals on account of close interdependence of price, output movement in the oligopoly market. Therefore the firm will not expect much rise in sale with price reduction.

Graph – 2 Marginal Revenue Curve In Oligopoly Market
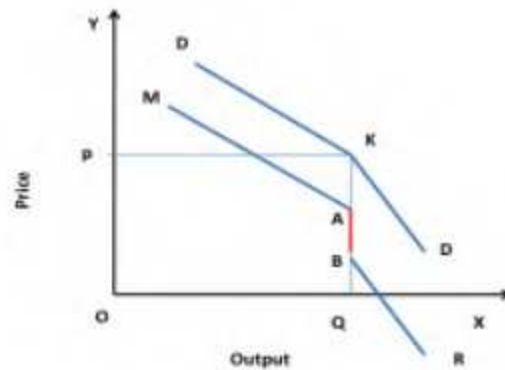
The average revenue curve and the demand curve (DD) of an oligopoly firm has a kink. The kinked average revenue curve implies a discontinuation in the marginal revenues curve. It explains the phenomenon of price rigidity in oligopoly market.

Graph – 3 Price Rigidity Under Oligopoly Market
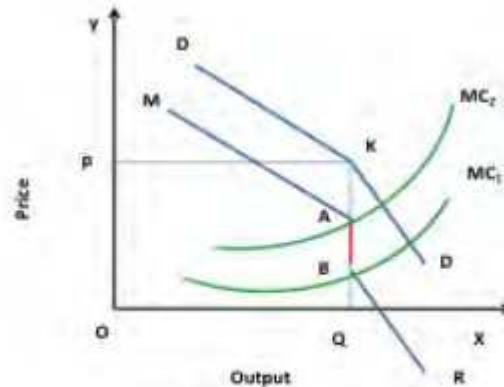
The price output level that maximizes the profits for a firm is derived from the equilibrium point, which lies at the intersection of the MC and the MR curves. The price output combination can remain optimal at the kink even though the MC fluctuates because of the associated gap in the MR curve. This is shown in the graph. The profit maximizing price OP and output combination of OQ remains unchanged as long as MC fluctuates between MC1 and MC2 that is between A and B. Hence there is price rigidity- it means OP does not change. It is concluded that once a general price level is reached it remains unchanged over a period of time in oligopoly market.

12.10 Duopoly

A duopoly is a type of oligopoly, characterized by two primary corporations operating in a market or industry, producing the same or similar goods and services. The key components of a duopoly are how the firms interact with one another and how they affect one another

In a duopoly, two companies control virtually the entirety of the market for the goods and services they produce and sell. While other companies may operate in the same space, the defining feature of a duopoly is the fact that only two companies are considered major players. The two companies – and their interactions with one another – shape the market they operate in.

Types of Duopolies

There are two primary types of duopolies: the Cournot Duopoly (named after Antoine Cournot) and the Bertrand Duopoly (named after Joseph Bertrand).

1. The Cournot Duopoly

Antoine Cournot was a French mathematician and philosopher. In the early to mid-1880s, Cournot used his understanding of mathematics to formulate and publish a significant model of what oligopolies look like. The model, known as the Cournot Duopoly Model (or the Cournot Model), places weight on the quantity of goods and services produced, stating that it is what shapes the competition between the two firms in a duopoly. In Cournot's model, the key players in the duopoly make an arrangement to essentially divide the market in half and share it.

Cournot's model speculates that in a duopoly, each company receives price values on goods and services based on the quantity or availability of the goods and services. The two companies maintain a reactionary relationship in regard to market prices, where each company changes and makes adjustments to their respective production, ending when an equilibrium is reached in the form of equal halves of the market for each firm.

2. The Bertrand Duopoly

Joseph Bertrand, operating around the same period as Cournot, was a French mathematician and economist. Bertrand became well known after publishing a number of reviews on math and economy-related articles written by professional peers and colleagues such as Leon Walras and Antoine Cournot.

Bertrand's critique of Cournot's model of duopolies is ultimately what led to the furthering of both oligopoly theory and game theory, most notably resulting in the formation of his own theory or model of duopolies, the Bertrand Model.

The primary difference between Cournot's model and Bertrand's model is that while Cournot believed production quantity would drive the competition between the two companies, Bertrand believed that the competition would always be driven by price.
Bertrand's duopoly theory identified that consumers, when given a choice between equal or similar goods and services, will opt for the company that gives the best price. This would start a price war, with both companies dropping prices, leading to an inevitable loss of profits.

The Significance of a Duopoly

Duopolies are significant because they force each company to consider how its actions will affect its rival, meaning, how the rival firm will respond. It affects how each company operates, how it produces its goods, and how it advertises its services, and can ultimately change what and how goods and services are both offered and priced. When the two firms compete on price – in a Bertrand Duopoly – prices tend to dip to or below the cost of production, thereby wiping out any chance for profit.

For this reason, most duopolistic firms find it profitable and generally necessary to agree to form a sort of monopoly, setting prices that allow both firms to take one half of the market space and thus one half of the market's profit. However, this is a tricky tactic if done incorrectly because the Sherman Act and other antitrust laws in the United States make the collusive activity illegal.

Duopolies, when operating and competing based on production quantity instead of price, tend to function better, avoiding any potential for legal issues and enabling each firm to share in the profits, reaching a price and operating homeostasis within their duopolistic market.

12.11 Summary

The key characteristics of oligopolistic industries in the presence of strategic interaction among firms. This arises from the fact that with few firms in the industry with the elasticity of market demand depends on the output of the each firm. Therefore one firm has a direct impact on the price that the other firm in the industry can charge.

12.12 Key words

Monopolistic competition-Monopolistic competition characterizes an industry in which many firms offer products or services that are similar (but not perfect) substitutes

Duopoly-a situation in which two suppliers dominate the market for a commodity or service.

Oligopoly -a state of limited competition, in which a market is shared by a small number of producers or sellers.

Sweezy oligopoly- An industry in which there are few firms serving many consumers. Firms produce differentiated products and each firm believes competitors will respond to a price reduction but they will not follow a price increase.

Kinked Demand Curve- When a firm increases its price, the rival firms do not follow it by increasing their prices in turn this increases its market share.

12.13 Self Assessment Questions

1. Discuss the characteristics features of Monopolistic Competition
2. Briefly Explain different types of Oligopoly
3. Explain the Equilibrium of firm under Monopolistic Competition
4. State the Oligopoly Models and Duopoly

12.14 Further Readings

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LESSON -13
EMPLOYMENT OF INPUTS UNDER DIFFERENT MARKET STRUCTURE- PRICE DISCRIMINATION

Learning Objectives
- ➤ To study the characteristic features of Price discrimination
- ➤ To Understand the objectives of Price Discrimination
- ➤ To Learn the Degree of Price Discrimination

Structure

13.0 Introduction

13.1 Status in Employment

13.2 Structural transformation or the evolution of economic structure

13.3 Determination of Wages

13.4 Objectives of Price Discrimination

13.5 Degree of Price Discrimination

13.6 Summary

13.7 Key words

13.8 Self Assessment Questions

13.9 Further Readings

13.0 Introduction

In developing countries, labour markets play a central role in determining economic and social progress since employment status is one of the key determinants of exiting poverty. Ultimately, having a decent, well-paid and secure job is the most sustainable path to increasing incomes and consumption levels. However, the reality in the formal economy of most developing countries is that the labour market fails to create the jobs needed to help individuals and their families prosper. Rather, the labour markets tend to be characterized by the persistence of informality in urban areas, the continuing share of workers in subsistence agriculture, low pay and poor working conditions, along with the disparities women, youth and other specific segments of society face.

In developed countries, the most common form of non-market work is the management of the household, usually by a housewife – cooking, cleaning, child-rearing, etc. Such work is both excluded from the system of national accounts and not included in labour force statistics. In developing countries, particularly in the poorest ones, nonmarket work is often a direct contribution to livelihoods – water- or wood-fetching, for example, or planting, harvesting and livestock feeding in subsistence farming. Such work – non-market and unpaid – is nevertheless

included in labour force statistics as employment. As in developed countries, valuation of such non-market work is difficult for the purposes of GDP accounting but is nonetheless an important contribution to the maintenance of living standards and a buffer against extreme poverty.

13.1 Status in employment

A strong relationship exists between the level of economic development and the share of wage employment in the labour market – a poorer country has a lower share of wage employment. Definitions of status in employment appear. The International Labour Organization (ILO) defines as "vulnerable employment" the sum of the shares of "own-account workers" and "contributing family members" in the labour market.

Definitions of status in employment

Employees are all workers who hold the type of jobs defined as "paid employment jobs", where the incumbents hold explicit (written or oral) or implicit employment contracts that give them basic remuneration that is not directly dependent upon the revenue of the unit for which they work.

Employers are workers who, working on their own account or with one or a few partners, hold the type of activity defined as a "self-employment job" (i.e. jobs where the remuneration is directly dependent upon the profits derived from the goods and services produced) and, in this capacity, have engaged, on a continuous basis, one or more persons to work for them as employee(s).

Own-account workers are workers who, working on their own account or with one or more partners, hold the type of activity defined as a "self-employment job" (see above) and have not engaged on a continuous basis any employees to work for them.

Members of producers' cooperatives are workers who hold "self-employment jobs" in a cooperative producing goods and services.

Contributing family workers are workers who hold "self-employment jobs" as own account workers (see above) in a market-oriented establishment operated by a related person living in the same household.

Workers not classifiable by status include those for whom insufficient relevant information is available and/or who cannot be included in any of the preceding categories.
Labour market structure and status in employment

The foregoing discussion has already implied certain stark differences in the structure of labour markets in developed and developing countries. Another four differences are:

(1) the characteristics of non-market work;
 (2) the labour force participation of women;
(3) status in employment; and
(4) the dispersion of occupational productivity

13.2 Structural transformation or the evolution of economic structure

In the classic view of development outlined by W. Arthur Lewis in the 1950s, development occurs when surplus labour in agriculture becomes a labour pool for the development of light manufacturing, with its higher value addition and greater economies of scale. With increasing incomes, a services sector then develops catering to the growing manufacturing sector, as well as to the rising purchasing power of consumers. As an empirical

observation, this view of development describes fairly well the change in the economic structure of what are now the developed economies.

New patterns of employment correspond to the changing patterns of economic activity in developing nations. On the whole, sectoral employment shares in developing countries do indicate the expected pattern of declining employment in agriculture and increasing shares in the manufacturing and services sectors (Majid, 2005). And with these changes, again, a change in the status in employment – greater wage employment – ensues.

The changing pattern of the sectoral shares is also determined by the changing pattern of demand. Some studies find that income elasticities determine the sectoral composition of production and employment shares (Papola, 2005). With rising income levels, the demand for agricultural goods declines relative to that for manufactured goods and, ultimately, the demand for services increases after a much higher level of income has been attained. This "demand side" argument contributes to explain this shifting pattern of employment. Regarding the increasing share of the workforce in the services sector, the industrial sector uses the services sector as "intermediate inputs" along with activities that were previously carried out by manufacturing firms.

In the case of India, such erstwhile manufacturing services are "outsourced" to firms in the services sector. Attempts have been made to estimate the portion of this employment in services that could be attributed to manufacturing (Papola, 2005). In the 1980s, various authors reported that this "outsourcing" of manufacturing activities has contributed to increasing the share of service-sector jobs.

It should be noted, however, that the foregoing is a statistical artefact characteristic of labour-market data whether in developing or developed countries. A kitchen helper in a manufacturing plant was once counted as a job in "manufacturing" whereas it is now most likely to be reclassified as a job in the services sector.

The Indian economy in the 1950s was similar to that of present-day developed countries about to undertake industrialization. With around two-thirds of GDP in agriculture, the Indian economy was similar to the British economy in the late eighteenth century and to Japan in the early twentieth century. The Indian labour force was also similar in the sense that agriculture accounted for about three-fourths of the workforce in the 1950s; 72 per cent of the US labour force worked in agriculture in 1841 and Japan had two-thirds employed in 1880.

13.3 Determination of wages

The determination of wages Wages are usually defined as the total remuneration received by paid employees during a specific period of time, and must be distinguished from the concept of total income which also includes receipts from other sources such as social security transfers, remittances or returns on capital. While paid employees include both regular-salaried workers and casual or informal wage earners, they exclude self-employed workers and family helpers. In a market economy, it is generally accepted that there is a positive relationship between the productivity of workers (measured as the value of their output per hour or per month) and their wages.

Price discrimination means that the producer charges different prices for different consumers for the same goods and service. Price discrimination occurs when prices differ even though costs are same. For Example, Doctors charge different fees for different customers. In case they charge different prices in different markets, people go to the market where price is low. Then it gets equalized in the long run. There are various types of price discrimination:
They are:

1. Personal Discrimination
2. Place Discrimination
3. Trade Discrimination
4. Time Discrimination
5. Age Discrimination
6. Sex Discrimination
7. Location Discrimination
8. Size Discrimination
9. Quality Discrimination
10. Special Service
11. Use of services
12. Product Discrimination

13.4 Objectives Of Price Discrimination:

1. To dispose the surpluses
2. To develop new market
3. To Maximize use of unutilized capacity
4. To Earn monopoly profit
5. To Retain export market
6. To Increase the sales

13.5 Degrees of Price Discrimination
First Degree Price Discrimination:

Firm charges a different price to each of its customers. The maximum willingness to pay is fixed as price which is called as reservation price. In perfect market the difference between demand and marginal revenue is the profit (for additional unit producing and selling). Firms do not know the customers willingness, therefore different prices. In imperfect market it is not possible to price for each and every customer.

Graph –1: First Degree Price Discrimination
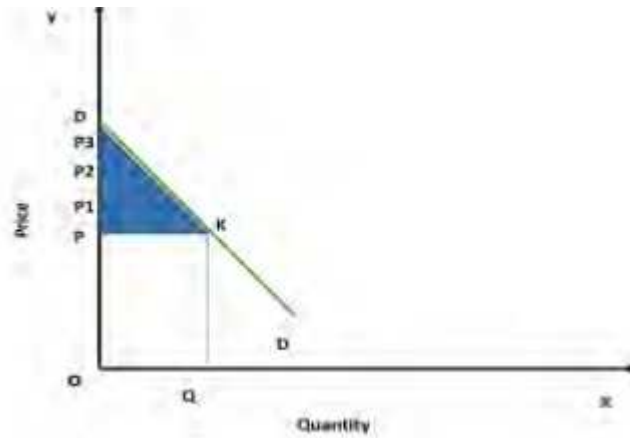
Second Degree Discrimination:

Firm charges different prices per unit for different quantities of the same goods or service. They follow block pricing method. The units in a particular block will be uniformly priced. The possible maximum price is charged for some given minimum block of output purchased by the buyers and then the additional blocks are sold at lower prices.

Graph –2: Second Degree Price Discrimination
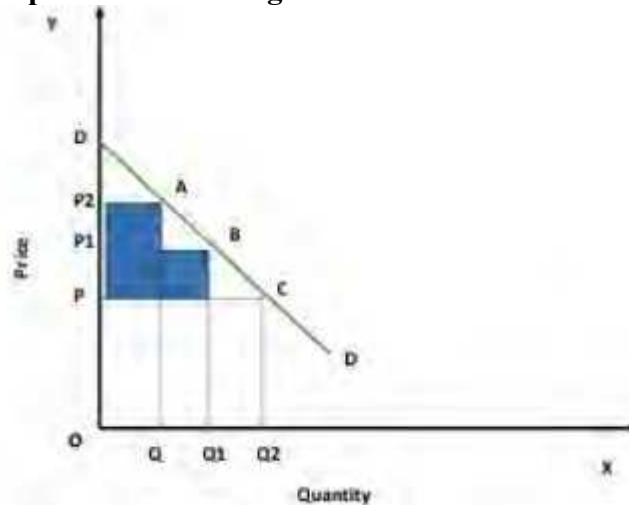
Third Degree Discrimination:

Firm segments the customers into groups with separate demand curves and charges different prices from each group. In first degree price discrimination, in case of unit wise differing prices, the second degree price discrimination is a case of block wise differing prices. In second degree discrimination a part of consumer's surplus is captured. But the third degree is commonly used. The firm divides its total output into many submarkets and sets different prices for its product in each market in relation to the demand elasticity

Graph – 3 Third Degree Price Discrimination
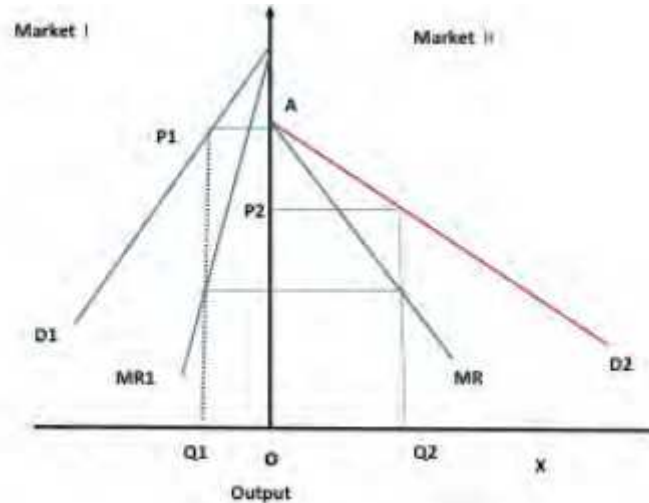
There are two markets I and II their demand curves D_1 and D_2 is given. D_1 is less elastic and D_2 is more elastic demand curve. The firm distributes OQ_1 to market - I at OP_1 price and OQ_2 to the market II at OP_2 price. Market- I has less elastic demand therefore higher price is charged..

13.6 Summary

The pricing mechanisms in different market structures provide a sound theoretical base to understand how price and output decisions are made. There are several other methods commonly followed in practice. However, price discrimination does not receive social and moral justification in the society.

13.7 Key words

Employment- Employees are all workers who hold the type of jobs defined as "paid employment jobs"

Wages- Wages are usually defined as the total remuneration received by paid employees during a specific period of time

13.8 Self-Assessment Questions

1. Briefly explain the Objectives of Price Discrimination under employment

2. Discuss the Degree of Price Discrimination

13.9 Further Readings

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Unit - IV

<center>

LESSION-14

NATIONAL INCOME AND ITS BASIC CONCEPTS

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Learning Objectives:

To study the National Income Estimations in India

- ➢ To study the Gross Fixed Capital Formation (GFCF),
- ➢ To study the Incremental Capital Output Ratio (ICOR),
- ➢ To study the Importance of National Income
- ➢ To study the Determinates of National Income:
- ➢ To explain the importance of National income,

Structure

14.0 Introduction

14.1 Importance of National Income

14.2 National Income Concepts

14.3 Models and methods of National Income

14.4 Methods of measuring national income

14.5 Models and methods of National Income

14.6 Methods of measuring national income

14.7 Summary

14.8 Keywords

14.9 Self – Assessment Questions

14.10 Further Readings

14.0 Introduction:

This chapter is concerned with the definitions of national income, concepts of national income. The national income has been defined by different persons in different ways. There is nothing absolutely right or wrong about any of these definitions. In general, national income means the total value of goods and services produced annually in a country. In other words, the total amount of income accruing from economic activities in a year‟s time is known as national income. It includes payments made to all resources in the form of wages, interests, rent and profits. The definitions of national income can be grouped into two classes. 1) the traditional definitions advanced by Marshall, Pigou and Fisher and 2) modern definitions:

14.0.1. Marshall's Definitions:

Marshall defined national income as below: According to Marshall, "the labour and capital of country acting on its natural resources produce annually a certain net aggregate of commodities, natural and immaterial including services of all kinds… this is the true net annual income or revenue of the country or national divided". Thus, the national income of a country can be defined as the total market value of all final goods and services produced in the economy in a year. Though the definition is theoretically sound, simple and comprehensive it has serious practical limitations. It is not easy to make statistically correct estimates of the total production of goods and services because the difficulties of the double counting and portion of the produce which is retained for personal consumption.

14.0.2. A.C. Pigou's Definition:

A.C. Pigou has, in his definition of national income included, income which can be measured in terms of money. In the words Pigou, "the national dividend is that part of the objective income of the community including of courses, income derived from abroad which can be measured in money". According to Prof. Pigou, only those goods and services are to be counted, avoiding double counting of course, which are actually exchange for money. Pigou"s definition is practicable and convenient and avoids the difficulties of measuring national dividend inherent in Marshall"s definition. But it has its own shortcomings. It makes an artificial distinction between the goods that are exchanged. For money and those which are not so exchanged. The bought and unbought goods do not differ in any fundamental manner. Underdeveloped countries marked by a high degree of self sufficiency in households a substantial portion of the production would be excluded since, part of it is on barter basis and not against money. Pigou"s definition would exclude even such goods. Thus this definition is not of much use for under developed countries.

14.0.3. Fisher's Definition

Fisher adopted „consumption" as the criterion of national income, whereas Marshall and Pigou regarded „production". According to Fisher, "The national dividend or income consist solely of services as received by ultimate consumer's whether from their material or from their human environments. Thus, a piano, or an overcoat made for more this year is not a part of this year's income, but an addition to the capital. Only the services rendered to me during this year by these things are income". Fisher's definition is considered to be better than that of Marshall or Pigou because Fisher's definition provides an adequate concept of economic welfare which is dependent on consumption and consumption represents our standard of living. It is however, more difficult to have an idea of net consumption than that of the net production. Further it is very difficult to measure the life of durable gods which last beyond one year. None of the definitions mentioned above suited Keynes because he was interested in knowing the factors which determine the level of income and employment at a particular time. He wanted to know the considerations which the entrepreneurs bear in mind while deciding to employ a particular number of persons. He therefore formulated his own definition to suit his purpose.

14.0.4 Keyne's definition:

According to Keynes the national income lies between the gross national product and the net national product. To arrive at income, Keynes does not deduct all depreciation and obsolescence from the gross national product. He deducts something less than this which he calls" User Coast". It is the cost of using capital depreciation in the value of the equipment when it is put to use and depreciation which would occur if not in use plus the expenditure which would have to be incurred on its maintenance and keep up. User cost is one of" the expenses of production voluntarily undertaken by the entrepreneurs when they decide how many workers to employ. The income of an individual business firm is defined as that sum which it attempts to maximize and in terms of which it decides how much employment to offer. To arrive at this sum, the firm must subtract from its total proceeds, the user cost plus the amount paid out to other factors of production in the forms of wages, interests and rent (factory cost). Since the later costs [(i.e) wages interests and rent] represent the income of the remaining community, the total national income would be equal to aggregate proceeds of all business firms less the aggregate user cost. Though income as defined above is the important concept in determining the amount of employment that would be offered by the entrepreneurs. It is the concept of net income which is important in relation to the amount which will be spent for consumption. Net income either for the firm or the whole economy, is income minus the remaining expected depreciation and obsolescence which is not included in user cost. Thus the definitions advanced by Marshall, Pigou and Fisher are not altogether flawless. However, the Marshallian and Pigouvian definitions tell us of the reasons influencing economic welfare whereas Fisher's definition helps us to compare economic welfare in different years.

14.0.5. Kuznet's Definition:

From the modern point of view, Simon Kuznets has defined national income as "the net output of commodities and services flowing during the year from the country's productive system in the hands of the ultimate consumers whereas, in one of the reports of United Nations, national income has been defined, on the basis of the system, of estimating national income, as net national product and as net national expenditure in a country in a year's time. In practice, while estimating national income, any of these definitions may be adopted because, the same national income would be derived, if different items were correctly included in the estimate. Simon Kuznets, an authority on national income Accounting defines national income as "the net output of commodities and services flowing during the year from the country's productive system into the hands of ultimate consumers or into net additions to the country's stock of capital goods"

14.1 National Income Estimations in India:

The first attempt to calculate national income of India was made by Dadabhai Naoroji in 1867-68, who estimated per capita income to be ₹ 20. The first scientific method was made by Professor VKRV Rao in 1931-32, but was not very satisfactory. The first official attempt was made by National Income Committee headed by Professor PC Mahalanobis in 1949.

According to the National Income Committee Report (1954), National Income of India was ₹ 8710 crore and Per Capita Income was ₹ 225 in 1948-49.In India, Central Statistical Organisation (1949) now renamed as Central Statistical Office (CSO) has been formulating National Income.

14.2 Gross Fixed Capital Formation (GFCF):

It refers to net additions of capital stock such as equipment, buildings and other intermediate goods. A nation uses capital stock in combination with labour to provide services and produce goods. To grow at a faster rate, a nation needs high levels of capital formation, so that it can grow its aggregate income as well as per capital income. This is because higher levels of capital stock enable an economy to produce more goods and services. To achieve a high level of capital formation, a nation should also achieve high levels of domestic savings (both households and firms), so that capital formation can be funded without relying on external debt.

In GFCF, the term gross signifies that adjustments due to depreciation of capital stock (e.g., machinery) are not made. When such an adjustment is made, it is called Net Fixed Capital Formation. The term fixed signifies that only fixed capital is counted and financial assets, stocks of inventories etc are excluded.
GFCF also excludes land sales and purchases.

14.2.1 Incremental Capital Output Ratio (ICOR):

ICOR is used to assess a country's level of production efficiency. ICOR equals Annual Investment/Annual Increase in GDP. Higher levels of ICOR mean that capital is not being used efficiently to increase production. Generally, for most countries ICOR is around 3.

14.2.2 Organizations in India Related to National Income account:

A. Central Statistical Organization:

Central Statistical Office (CSO) was set-up in 1949. It is one of the two wings of the National Statistical Organization (NSO), along with National Sample Survey Office (NSSO), responsible for coordination of statistical activities in the country and for evolving and maintaining statistical standards

Its activities include compilation of national accounts, conduct of annual survey of industries and economic census, compilation of index of industrial production, as well as consumer price indices. It also deals with various social statistics, training, international cooperation, industrial classification etc.

B. National Sample Survey Office (NSSO):

NSSO was set-up in 1950, for conducting large scale sample surveys to meet the data needs of the country, for the estimation of national income and other aggregates. It was recognized in 1970, by bringing together all aspects of survey work under a single agency known as NSSO. NSSO undertakes the fieldwork of Annual Survey of Industries in the whole country except Jammu and Kashmir.

14.3 Importance of National Income:

The following points highlight the top eleven reasons for growing importance of national income studies in recent years. The reasons are:
a. Economic Policy
b. Economic Planning
c. Economy's Structure
d. Inflationary and Deflationary Gaps
e. Budgetary Policies
f. National Expenditure,
g. Distribution of Grants-in-aid and Others.

14.3.A. Economic Policy:
National income figures are an important tool of macroeconomic analysis and policy. National income estimates are the most comprehensive measures of aggregate economic activity in an economy. It is through such estimates that we know the aggregate yield of the economy and can lay down future economic policy for development.

14.3. B. Economic Planning:
National income statistics are the most important tools for long-term and short-term economic planning. A country cannot possibly frame a plan without having a prior knowledge of the trends in national income. The Planning Commission in India also kept in view the national income estimates before formulating the five-year plans.

14.3. C. Economy's Structure:
National income statistics enable us to have clear idea about the structure of the economy. It enables us to know the relative importance of the various sectors of the economy and their contribution towards national income. From these studies we learn how income is produced, how it is distributed, how much is spent, saved or taxed.

14.3.D. Inflationary and Deflationary Gaps:

National income and national product figures enable us to have an idea of the inflationary and deflationary gaps. For accurate and timely anti- inflationary and deflationary policies, we need regular estimates of national income.

14.3. E. Budgetary Policies:
Modern governments try to prepare their budgets within the framework of national income data and try to formulate anti-cyclical policies according to the facts revealed by the national income estimates. Even the taxation and borrowing policies are so framed as to avoid fluctuations in national income.

14.3. F. National Expenditure:

National income studies show how national expenditure is divided between consumption expenditure and investment expenditure. It enables us to provide for reasonable depreciation to

maintain the capital stock of a community. Too liberal allowance of depreciation may prove harmful as it may unnecessarily lead to a reduction in consumption.

14.3.G. Distribution of Grants-in-aid:

National income estimates help a fair distribution of grants-in-aid by the federal government to the state governments and other constituent units.

14.3.H. Standard of Living Comparison:
National income studies help us to compare the standards of living of people in different countries and of people living in the same country at different times.

14.3.I. International Sphere:
National income studies are important even in the international sphere as these estimates not only help us to fix the burden of international payments equitably amongst different nations but also enable us to determine the subscriptions and quotas of different countries to international organizations like the UNO, IMF, IBRD etc.

14.4 National Income Concepts

14.4.1 Importance and Meaning of National Income:

National income is defined as the total annual value of all the goods and services produced by a country, measured in terms of money. National income data provides a summary statement of a country's aggregate economic activities. It not only helps to measure the size and health of an economy but also to understand how it functions.

According to Marshall, "The labour and capital of country acting on its natural resources produce annually a certain net aggregate of commodities, material and immaterial including services of all kinds. This is the true net annual income or revenue of the country or national dividend."

14.5 Models and methods of National Income

14.5.1 The various concepts of national income are categorized into different aspects:

(i). Gross Domestic Product (GDP)
(ii). Gross National Product (GNP)
(iii). Net National Product (NNP)
(iv). Net Domestic Product (NDP)
(v). Per Capita Income (PCI)

i) Gross Domestic Product (GDP):

In GDP, we mean the monetary value of all goods and services produced in one year in a country's domestic border.

In the economy, production activities continue to run in many areas, in which sugar, cloth, steel, manure, wheat, etc. items and government publication, bank, insurance, and transportation, etc. services are manufactured. The sum of the market value of all these goods and services is known as a gross domestic product.

ii) Gross National Product (GNP):

The notion of the gross national product is not only related to the value of the final product
which is produced by ordinary residents within the country's domestic boundary.
The sum of gross domestic product and the pure income from abroad is known as a
gross national product.

Formula: GDP + (Exports-Imports).

iii) Net National Product (NNP):

The net national product helps to subtract the value of depreciation from the value of the gross national product.
Formula: GNP- Depreciation.

iv) Net Domestic Product (NDP):

The only difference between GDP and NDP is that at the market price, the decline in GDP is also included in the expenditure but not included in the NDP.

Formula: GDP-Depreciation.

v) Per Capita Income (PCI):

When the country's national income is divided into the total population of the country, then the answer which comes is called per capita income.

Formula: National Income / Population.

14.6 Methods of measuring national income

The lesson four describes about the methods of measuring national income, difficulties in measurement of national income, importance of national income, definitions of social accounting, distinguish between private accounting and social accounting, different kinds of measurement of social accounting, importance of social accounting and difficulties in social accounting.

After going through this lesson, you should be able to understand the measurement of national income, which will give a comprehensive understanding of the techniques to use for calculating the national income. Further, it examines the difficulties in measurement of National income. There are three methods of measuring national income, which method is to be employed depends on the availability of data in the country and the purpose in hand.

(I). Product or Value Added Method

(II). Income Method

(III). Expenditure Method

(IV). Composite Calculation Method

i) Product or Value Added Method:
According to this method, the sum of the value of all goods and services produced in the country is called national income.

"**Production does not mean the census of production, but from net production**." Net production will be considered for the decline in fixed capital from the total production and the cost of changing it. **For Example**– If a grain of Rs. 160 is produced in a field and its expenditure for replacement is Rs. 50 then the net production will be Rs. 110.

ii) Income Method:
According to the income tax method, the sum of the payments of the means of payment of their services in the production of various means of production. The sum is called national income.

If you add the net income earned from abroad in this total sum then the national income is created.

National Income: Wages +Fines +Interest +Dividend +Profit+ Corporate Profit Tax
         +Public Sector Surplus+ Net Income Earned from Abroad +Mixed
    Income.

Items not be included in the Estimation of National Income by Income Method–
According to the income method, the following are not included in the estimation of national income:-

(I). Income from the sale of old goods,

(II). Illegal income, like smugglers, Junkers,

(III).Casual income, like income from the lottery,

(IV). All transfer payments,

(V). Income from gift tax, death tax, property tax.

iii) Expenditure Method:

This is the third method of measuring national income. This method is also known as consumption and investment method because according to this method national income is calculated by adding final consumption and appropriation expenditure.

In short, according to this method, the following conditions are included to find the national income:-

(i). Private final consumption expenditure,
(ii). Gross domestic capital formation,
(iii). Government final consumption expenditure,
(iv). Real (Export expenditure -Import expenditure).

iv) Mixed Calculation Method:

According to this method, in various economic areas, the production and income calculation methods are used according to the convenience of income, which is called compound or mixed calculation method.

According to this method,

(i).The national income can be calculated according to the production method, in which business figures are available,

(ii) .Where the production figures can be easily accessed by businessmen and reasons, the calculation of national income can be used,

(iii). after that, the national income can be known by adding the digits obtained from the production calculation method and income calculation method.

14.7 Summary:

The above text clearly explained the definitions of national income. It can be grouped into two classes. 1) The traditional definitions advanced by Marshall, Pigou and Fisher and 2) modern definitions. We understood the important concepts of national income, viz., the GNP, NNP, National income Personal income, Disposable income. Its explained there are three methods of measuring national income, viz.,(a) Product Method (b) Income Method (c) Expenditure Methods and (d)Value added Method. Further we know the meaning of social accounting, distinguish between private accounting and social accounting.

It analysed the different kinds of measurement of social accounting, the importance of social accounting and difficulties in social accounting. Finally it concluded the difficulties in measurement of national income. All of the above are clearly defined.

14.8 Keywords

National income means goods and services produced in an economy during a particular year.

Gross Domestic Product (GDP):
GDP is the sum of total value of final goods produced and services provided in a country in one year.

Gross National Product:
GNP is the market value of all the final goods and services produced by the economy in as given year.

Net National Product:
GDP minus the cost of capital goods "Used up" during the accounting period. For purposes of measurement depreciation charges and any other allowances for the consumption of durable capital goods are used to estimate the amount of capital "used up" in the production of a given volume of output.

Personal Income:
A measure of the current income received by all "persons" from all sources. For accounting purposes, non profit institutions, private trust funds, and private health (or) welfare funds are classified as "persons" personal income is 28 measured before taxes. Personal income differs from person to person it may be depends upon their ability and skills.

***Per* capita income:**
The average income of the individuals of a country in the particular year is called per capita income for the year.
Per Capita Income: Population National Income (for a particular year) Disposable income
Disposable income=Personal income – Personal Taxes = Personal Consumption + Personal Saving

14.9 Self –Assessment Questions
1. Explain the genesis of national income in India.
2. Explain the importance of national income in India.
2. Explain various organizations work for the national income in India.
3. Explain determinants of national income
4. Explain various definition of national income
5. Define national income? Explain various concepts of national income.
6. Explain various measurements of National Income

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LESSON – 15
DETERMINATION OF NATIONAL INCOME

Learning Objectives
After completing this lesson, you will be able to:
- ✓ know the meaning of aggregate demand, aggregate supply and effective demand of an economy;
- ✓ tell the components of aggregate demand;
- ✓ determine the equilibrium level of income and employment;
- ✓ understand the concept and working of multiplier;
- ✓ distinguish between excess demand and deficient in demand; and
- ✓ Explain the methods to correct excess demand & deficient demand.

Structure

15.0 Introduction

15.1 The factors

15.2 The Multiplier Effect:

15.3 Economic indicators

15.4 Leading indicators

15.5 Corporate equities as leading indicator with respect to GDP.

15.6 Index of consumer expectations

15.7 Lagging indicators

15.8 Coincident indicators

15.9 Technology and Employment

15.10 The role of Globalisation

15.0 Introduction

Economy must produce goods and services and generate income for its citizens. For this it must provide employment opportunities. In this context it is important to ask the question "How much output should be produced in the economy?" What should be the level of income and employment?" John Maynard Keynes a famous economist who pioneered the study of macro economics in the 1930s has propounded a simple theory of income and employment to answer these questions.

The theory of determination of national income is concerned with finding out the equilibrium level of national income, i.e., the level of national income at which the purchasing and production plans of the economy are synchronised.

The following points highlight the top five factors affecting national income.

15.1 The factors are:

1. Natural and Human Resources
2. Technical Knowledge
3. Political Stability
4. Terms of Trade
5. Foreign Investment.

15.1.11. Natural and Human Resources:

The quantity and quality of a country's resources exert perhaps the most important influences on its national income. For example, fertile soil, ready sources of power, easily worked mineral deposits; a favourable climate, navigable rivers, etc. will have a beneficial effect on a country's productive capacity.

Capital equipment may range from simple hand tools to the most up-to- date forms of industrial machinery. Generally, the achievement of an increasing output of goods is associated with increased investment in capital equipment.

15.1.2. Technical Knowledge:
New methods of production and new ways of utilizing resources may increase the output of goods and services. A community which is keen to try out new ideas or inventions in industry and commerce is likely to enjoy a higher standard of living than a country which is slow to adopt new ideas.

15.1.3. Political Stability:
Political stability is essential for the expansion of business activities. War and internal revolution interfere with production because they add to normal commercial risks. Thus, peace and a stable government promote confidence and encourage production.

15.1. 4. Terms of Trade:
Trade benefits all countries which engage in it, but the degree of benefit enjoyed by a particular country will vary according to changes in the price levels at which it sells its exports and imports. Favourable terms of trade occur if the prices of imports fall relatively to the prices of exported goods. This means that a larger quantity of exports. Hence, more goods are available and national income is increased.

15.1.5. Foreign Investment:
A net income from foreign investment means that the creditor country can obtain goods and services in return. Thus, if two countries have equal gross domestic products (GDP), then the country with the more favourable net return from foreign investment will have the higher national income.

The theory of determination of national income is concerned with finding out the equilibrium level of national income, i.e., the level of national income at which the purchasing and production plans of the economy are synchronized. This occurs at the point of the intersection of the aggregate demand (C + I) schedule and the aggregate supply (C + S) schedule. This is shown by point A in Fig. 3.
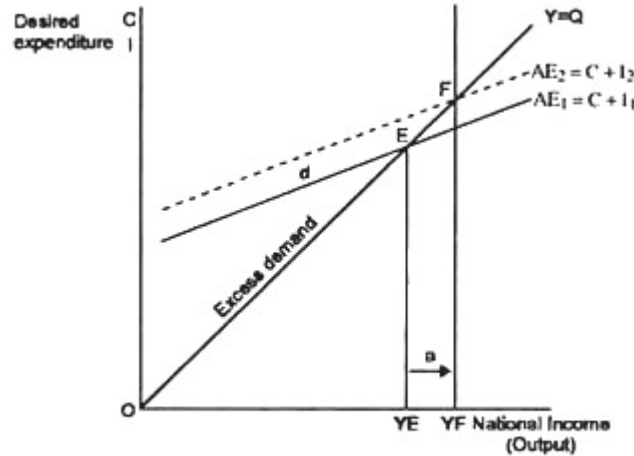
Fig. 3 : Income Determination by C + I

Income levels above point G cannot be maintained because total spending is insufficient to buy up all the output being produced. Business firms find themselves with unsold stocks and are thus forced to cut back production. In contrast, at income levels below point E aggregate expenditure exceeds available output. Now, business firms find that they can sell their entire output. So, they are encouraged to produce more to meet the additional demand that exists.

National income equilibrium is also reached at the point where total injections exactly equal leakages. In a closed economy without government, the only injection is autonomous investment and the only leakage is saving.

Thus, the leakages-injections approach to national income determination also goes by the name saving-investment approach. In the circular flow of national income model, income - consumption ₊leakages = C + S and spending (expenditure) = consumption + injections = C + I.

See Fig. 3. Here, equilibrium is achieved where leakages = injections, i.e., point £ which is the same as point E in the income and expenditure schedules in Fig. 1. If leakages exceed injections then total expenditure will fall, resulting in a contraction of income and output. Conversely, if injections exceeds leakages, then total expenditure will rise, resulting in an increase in income and output. Only when injections and leakages are equal national income and output will remain the same.
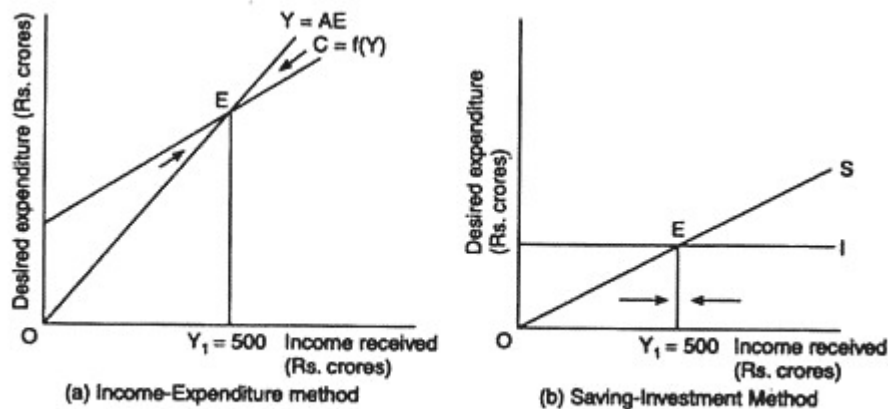

Fig. 1 : Equilibrium National Income

The equilibrium level of national income will change if there is a shift in the aggregate expenditure schedule. For example, if aggregate demand rises from AE_1 to AE_2 due to an

increase in investment spending, there will be an increase in the equilibrium level of national income from Y_E to Y_F.

Alternatively, the equilibrium level of national income will change if there is a shift in either the leakages or injections schedules. For example, an increase in investment spending will shift the investment demand schedule upward from I_1 to I_2, resulting to an increase in the equilibrium level of income from Y_1 to Y_2 as shown in Fig. 4.
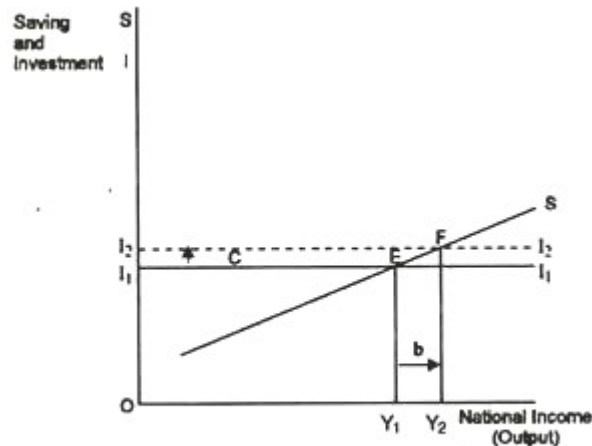

Fig. 4 : Income Determination by
Saving and Investment

15.2 The Multiplier Effect:

Keynes also pointed out that an act of autonomous spending will have a multiplier effect. It was he who first introduced the concept of investment multiplier to show the relation between any change in autonomous spending (such as investment) and the resulting change in national income. In fact, the multiplier is the number by which the change in autonomous investment has to be multiplied to find out the resulting change in equilibrium national income.

It is the ratio of an induced change in the equilibrium level of national income to an initial change in the level of investment spending. 'The multiplier effect' denotes **"the phenomenon whereby some initial increase (or decrease) in the rate of spending will bring about a more than proportionate increase (or decrease) in national income".**

Firstly, equilibrium income is not necessarily the level of income at which full employment is attained. In fact, an equilibrium level of income can occur at any level of economic activity. According to Keynes, full employment equilibrium is a special case where aggregate desired expenditure is exactly equal to potential output (GNP), leaving neither an inflationary nor a deflationary gap. For example, aggregate demand curve A_2 in Fig. 2 represents full employment equilibrium where F corresponds with full employment (potential output).
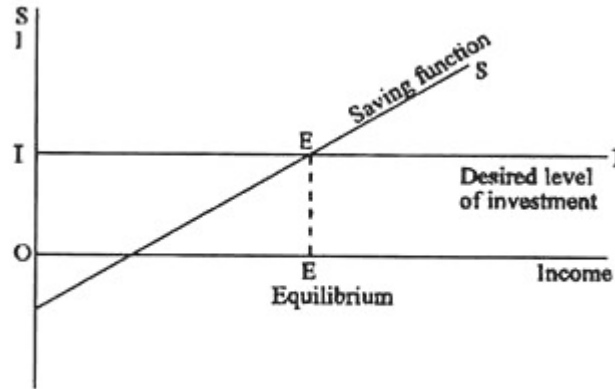
Fig. 2 : Saving investment equilibrium

The second point to note here is that according to Keynes any act of autonomous spending will have a multiplier effect. In a two-sector model, the only item of autonomous spending is investment which is independent of income. And Keynes developed the theory of multiplier to denote the phenomenon whereby some initial increase in the rate of spending (autonomous investment) will bring about a more than proportionate increase in national income. Thus, we can write

$$\Delta Y = m (\Delta I) \ldots (1)$$

Where, ΔY is the change in national income, ΔI is the initial change in investment spending and m is the investment multiplier.

We can also express equation (1) in the following form:

$$m = \Delta Y/\Delta I \ldots (2)$$

Thus, the multiplier is the ratio of the induced change in the equilibrium level of national income to an initial change in the level of spending.

Two features:

There are two important features of the multiplier process,

(A). First, it is a cumulative process rather than an instantaneous effect. Thus, it is best   viewed in terms of a series of successive 'rounds' of additions to income,

(B). Secondly, the numerical value of the multiplier depends on the fraction (proportion) of extra income that is spent on consumption (i.e., the marginal propensity to consume) at each successive round.

For simplicity, let us assume that all income is either consumed or saved. In fact, income is partly spent on consumption goods and partly saved. So the sum of MPC and MPS = 1.

The value of the multiplier (m) is then given by the formula:

$$m = 1/1 – MPC = 1/1 – MPS \ldots (3)$$

The Multiplier and the Marginal Propensities to Consume and Save:

Since the multiplier is the reciprocal of MPS, its value depends on MPC. The larger the MPC, the larger is the multiplier.

Aggregate expenditure and national income (Y) change because consumption expenditure (C) and investment (I) changes. The changes in Y equals the change in C plus the change in I, i.e., $\Delta Y = \Delta C + \Delta I$.

But the change in consumption expenditure is determined by the change in y and the MPC. It is $\Delta C = MPC \times \Delta Y$.

Now, combining the two factors we get: $\Delta Y = MPC \times \Delta Y \times \Delta I$. Now, solving for the change in Y as $(1 - MPC) \times \Delta Y = \Delta I$ and rearranging, we get:
$\Delta Y = \Delta I / (1 - MPC) \dots$ (4). The multiplier is $m = \Delta Y / \Delta I$. So, dividing both sides of equation (4) by the change in investment (ΔI), we get:
$$m = \Delta Y / \Delta I = 1 / (1 - MPC) = 1/MPS$$
Since, the MPS is a fraction — a number lying between 0 and 1- the multiplier is greater than 1.

The larger the proportion of income which is spent on consumption goods, the larger the value of the multiplier. Thus if, MPC – 0.90 and MPS = 0.10 the value of the multiplier is 10. If MPC = 0.75 and MPS = 0.25 the value of the multiplier is 4.

Why is the multiplier related to MPS even if saving is a leakage from the circular flow of income? The answer is that if investment increases by a certain amount, say, Rs. 100 crores, and MPS is 1/5, income has to rise 5 times the increase in autonomous investment (i.e., Rs. 500 crores) so that the additional saving generated (1/5 of Rs. 500 crores or Rs. 100 crores) is just sufficient offset the additional investment and the economy is enabled to re-achieve equilibrium at a higher level of saving and investment.

In each round a proportion of extra income created is saved and is thus withdrawn from the circular flow. So, the proportion that leaks from the circular flow does not pass on as additional consumption spending in the next round. When the cumulative total of these leakages (savings) is exactly equal to the initial increase in spending, the multiplier process comes to a halt. And the economy reaches a new equilibrium.

Fig. 5 shows the multiplier effect graphically. Starting at the national income level OY_1 if aggregate expenditure increases from AE_1 to AE_2 then the initial injection of extra spending AB would lead to an increase of output (income) by Y_1Y_2.
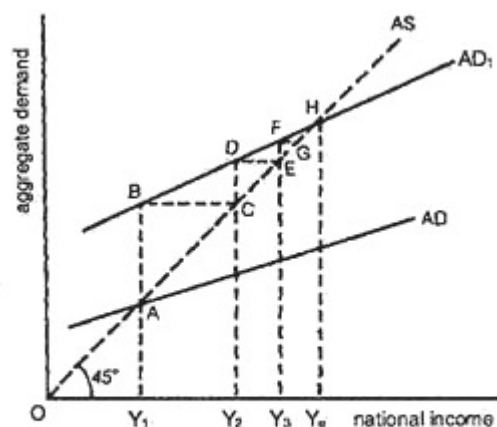

Fig. 5 : The multiplier effect of increased spending
on national income

This additional income would induce yet another round of consumption spending (CD) which would, in its turn, increase output and income by Y_2Y_3. This extra income would again induce more spending (EF) which would, in turn, increase output and income again by Y_3Y_4 and SO the

process would continue for sometimes. The whole process would ultimately come to a halt when the new equilibrium level of income Y_e is reached.

15.3 Economic indicators

Economic indicators can be classified into three categories according to their usual timing in relation to the business cycle: leading indicators, lagging indicators, and coincident indicators.

15.4 Leading indicators

Leading indicators are indicators that usually, but not always, change before the economy as a whole changes. They are therefore useful as short-term predictors of the economy. Leading indicators include the index of consumer expectations, building permits, and the money supply. The Conference Board publishes a composite Leading Economic Index consisting of ten indicators designed to predict activity in the U. S. economy six to nine months in future.

15.4.1 Components of the Conference Board's Leading Economic Indicators Index

Average weekly hours (manufacturing) — Adjustments to the working hours of existing employees are usually made in advance of new hires or layoffs, which is why the measure of average weekly hours is a leading indicator for changes in unemployment.

Average weekly initial jobless claims for unemployment insurance — The CB reverses the value of this component from positive to negative because a positive reading indicates a loss in jobs. The initial jobless-claims data is more sensitive to business conditions than other measures of unemployment, and as such leads the monthly unemployment data released by the U.S. Department of Labour.

15.4.2 Manufacturers' new orders for consumer goods/materials — This component is considered a leading indicator because increases in new orders for consumer goods and materials usually mean positive changes in actual production. The new orders decrease inventory and contribute to unfilled orders, a precursor to future revenue.

15.4.3 Vendor performance (slower deliveries diffusion index) — This component measures the time it takes to deliver orders to industrial companies. Vendor performance leads the business cycle because an increase in delivery time can indicate rising demand for manufacturing supplies. Vendor performance is measured by a monthly survey from the National Association of Purchasing Managers (NAPM). This diffusion index measures one-half of the respondents reporting no change and all respondents reporting slower deliveries.

15.4.4 Manufacturers' new orders for non-defense capital goods — As stated above, new orders lead the business cycle because increases in orders usually mean positive changes in actual production and perhaps rising demand. This measure is the producer's counterpart of new orders for consumer goods/materials component (#3).

15.4.5 Building permits for new private housing units.

Stock prices of 500 common stocks — Equity market returns are considered a leading indicator because changes in stock prices reflect investors' expectations for the future of the economy and interest rates.

15.5 Corporate equities as leading indicator with respect to GDP.

Money Supply (M2) — The money supply measures demand deposits, traveler's checks, savings deposits, currency, money market accounts, and small-denomination time deposits. Here, M2 is adjusted for inflation by means of the deflator published by the federal government in the GDP report. Bank lending, a factor contributing to account deposits, usually declines when inflation increases faster than the money supply, which can make economic expansion more difficult. Thus, an increase in demand deposits will indicate expectations that inflation will rise, resulting in a decrease in bank lending and an increase in savings.

Interest rate spread (10-year Treasury vs. Federal Funds target) - The interest rate spread is often referred to as the yield curve and implies the expected direction of short-, medium- and long-term interest rates. Changes in the yield curve have been the most accurate predictors of downturns in the economic cycle. This is particularly true when the curve becomes inverted, that is, when the longer-term returns are expected to be less than the short rates.

15.6 Index of consumer expectations — This is the only component of the leading indicators that is based solely on expectations. This component leads the business cycle because consumer expectations can indicate future consumer spending or tightening. The data for this component comes from the University of Michigan's Survey Research Center, and is released once a month.

15.7 Lagging indicators

Lagging indicators are indicators that usually change after the economy as a whole does. Typically the lag is a few quarters of a year. The unemployment rate is a lagging indicator: employment tends to increase two or three quarters after an upturn in the general economy.[citation needed] In finance, Bollinger bands are one of various lagging indicators in frequent use. In a performance measuring system, profit earned by a business is a lagging indicator as it reflects a historical performance; similarly, improved customer satisfaction is the result of initiatives taken in the past.

The Index of Lagging Indicators is published monthly by The Conference Board, a non-governmental organization, which determines the value of the index from seven components. The Index tends to follow changes in the overall economy.

The components on the Conference Board's index are:
The average duration of unemployment (inverted)
The value of outstanding commercial and industrial loans
The change in the Consumer Price Index for services
The change in labour cost per unit of output
The ratio of manufacturing and trade inventories to sales
The ratio of consumer credit outstanding to personal income
The average prime rate charged by banks

15.8 Coincident indicators

Coincident indicators change at approximately the same time as the whole economy, thereby providing information about the current state of the economy. There are many coincident economic indicators, such as Gross Domestic Product, industrial production, personal income

and retail sales. A coincident index may be used to identify, after the fact, the dates of peaks and troughs in the business cycle.

There are four economic statistics comprising the Index of Coincident Economic Indicators:

Number of employees on non-agricultural payrolls

Personal income less transfer payments

Industrial production

Manufacturing and trade sale

15.9 TECHNOLOGY AND EMPLOYMENT

Technology increases productivity and hence reduces the burden on workers and eliminates the burden of doing repetitive tasks. For this, workers need to learn some skills to stay employed. It's just that the workers should be given training for the newly created jobs.

In economics, it is widely accepted that technology is the key driver of economic growth of countries, regions and cities. Technological progress allows for the more efficient production of more and better goods and services, which is what prosperity depends on.

Technology, for economists, is anything that helps us produce things faster, better or cheaper. In this sense, processes like assembly line production or creating medical vaccines are considered technologies. Even social or political things like language, money, banking, and democracy are considered technologies.

15.10 The role of globalisation

Besides technological change, there are also other economic forces that may reduce employment opportunities for low-skilled people. An obvious candidate is globalisation and the emergence of global value chains. Globalisation can lead to a substitution of domestic low-skilled labour by foreign low-skilled labour, for example when firms offshore production and substitute goods produced in Europe with imports (Grossman and Rossi-Hansberg 2008).

Timmer et al. (2011) show that there is indeed a strong shift towards imported inputs in most global value chains. The output of countries and sectors increasingly depends on imported intermediary goods. However, this does not necessarily mean that domestic low-skilled labour is replaced by foreign low-skilled labour. The authors show for the German automotive industry that the content of domestic low-skilled labour in value added decreased from 7% to 4% of final output value between 1995 and 2008. While the total share of foreign inputs on final output of the German automotive industry increased from 21% to 34% in this period, the share of foreign low-skilled labour on final output remained stable at 4%: Value added is increasingly created by capital and high-skilled labour, and the share of domestic and imported low-skilled labour on output and value added decreases. Thus, the share of low-skilled labour embodied in imported goods cannot be blamed for the decrease of domestic low-skilled labour inputs. The authors report that low-skilled labour inputs decreased in 91% of all combinations of countries and global value chains. So, it is rather technological change than globalisation which is to blame for the decline of low-skilled labour.

However, there are also results that point in a different direction. Becker et al. (2013) show that off shoring is associated with a statistically significant shift towards more non-routine and more interactive tasks, and with a shift towards highly educated workers. Crino (2009) provides more evidence in this direction, so it seems that both, technology and globalisation have

its share on the skills-bias we observe in employment statistics. In addition, we have to distinguish between short term and long-term effects: once firms start to offshore low-skilled jobs abroad, off shoring will raise foreign wages and may change the direction of technological change. Acemoglu et al. (2015) predict that further off shoring may soon induce innovation in less skill-intensive sectors, leading to a shrinking of the inequality gap.

15.11 Summary

The components of aggregate demand are household consumption demand, investment by firms, government expenditure and net exports. The equilibrium level of income is determined at the point where aggregate demand equals total output in the economy. symbolically. C + I = C + S in a two sector economy. The point at which C + I = C + S is also called effective demand. Multiplier is defined as the ratio of increase in income to increase in investment. Multiplier= 1/1 – MPC = 1/MPS z Increase in income = multiplier × increase in investment Or 'Y = 1/1 – MPC × 'I. Multiplier process involves increase in income through various rounds due to initial increase in investment and subsequent increases in consumption.

Excess demand refers to increase in aggregate demand at potential level of output. Excess demand creates inflationary pressure in the economy. Deficiency in demand refers to fall in aggregate demand at the level of potential output. Increase in money supply creates excess demand in the economy, excess demand is also called inflationary gap.

15.12 Keywords

1. **Gross national income**, abbreviated as GNI, is the sum of incomes of residents of an economy in a given period. It is equal to GDP minus primary income payable by resident units to non-resident units, plus primary income receivable from the rest of the world (from non-resident units to resident units).
2. **The equilibrium level of income** in an economy is determined when aggregate demand, represented by C + I curve is equal to the total output (Aggregate Supply or AS)
3. **Exports of goods and services consist of sales**, barter, or gifts or grants, of goods and services from residents to non-residents; the treatment of exports and imports in the SNA is generally identical with that in the balance of payments accounts as described in the Balance of Payments Manual.
4. **Government final consumption** expenditure consists of expenditure, including imputed expenditure, incurred by general government on both individual consumption goods and services and collective consumption services.

15.13 Self – Assessment

1. What are the factors influencing national income?
2. Keynes Explain the Multiplier Effect national income system?
3. Examine the economic indicators in national income?
4. Express the impact globalisation on national income?

15.14 Further Readings

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LESSON – 16
THE BUSINESS CYCLE

Learning objectives

To study the business cycles
To know the importance of business cycles
To anylyse the different fluctuations in business cycling
To study Macro models Circular flow model
To examine Circular Income Flow in a Two Sectors Economy
To analyses the Circular income Flow in a Three-Sector Closed Economy
To examine The Circular flow in a Four-Sector Open Economy

Structure

16.0 Introduction

The first authority to explore economic cycles as periodically recurring phenomena was the French physician and statistician Clément Juglar, who in 1860 identified cycles based on a periodicity of roughly 8 to 11 years. Business cycles are identified as having four distinct phases: peak, trough, contraction, and expansion. Business cycle fluctuations occur around a long-term growth trend and are usually measured by considering the growth rate of real gross domestic product.

16.1 Scope and importance of the business cycle:

As we know, the performance of a firm is never the same over an extended period of time. There are always ups and downs in the economic activity and output of a firm. These cyclic phases are known as business cycles or trade cycles. Let us learn a little more about the importance of business cycles.

16.2 Importance of Business Cycles

Every company must go through their share of ups and downs. And each trading cycle is characterized by its own unique features. There are four basic phases-expansion, peak, trough /depression, and recovery. A firm must always identify which phase it is currently in. It must also always be prepared for a sudden change in the cycles since these cycles are impossible to predict. Let us see the importance of business cycles and their relevance for firms.

16.2.1 The Business Cycle:

The term "business cycle" (or economic cycle or boom-bust cycle) refers to economy-wide fluctuations in production, trade and general economic activity. From a conceptual perspective, the business cycle is the upward and downward movements of levels of GDP (gross domestic product) and refers to the period of expansions and contractions in the level of economic activities (business fluctuations) around a long-term growth trend.
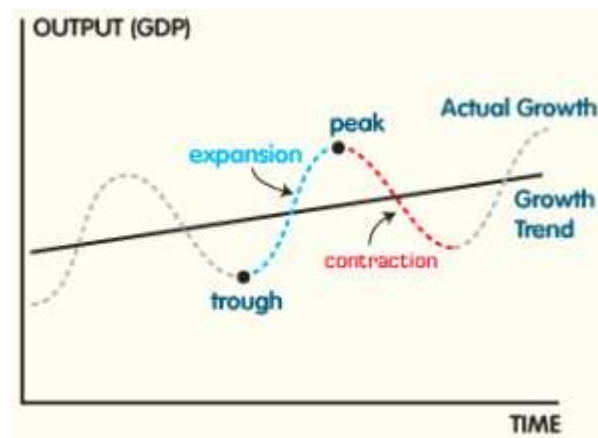
Figure 1. Business Cycles: The phases of a business cycle follow a wave-like pattern over time with regard to GDP, with expansion leading to a peak and then followed by contraction

16.2.2 Business Cycle Phases:

Business cycles are identified as having four distinct phases: expansion, peak, contraction, and trough.

An **expansion** is characterized by increasing employment, economic growth, and upward pressure on prices. A **peak** is the highest point of the business cycle, when the economy is producing at maximum allowable output, employment is at or above full employment, and

inflationary pressures on prices are evident. Following a peak, the economy typically enters into a correction which is characterized by a **contraction** where growth slows, employment declines (unemployment increases), and pricing pressures subside. The slowing ceases at the **trough** and at this point the economy has hit a bottom from which the next phase of expansion and contraction will emerge.

16.3 Business Cycle Fluctuations:

Business cycle fluctuations occur around a long-term growth trend and are usually measured in terms of the growth rate of real gross domestic product.

In the United States, it is generally accepted that the National Bureau of Economic Research (NBER) is the final arbiter of the dates of the peaks and troughs of the business cycle. An **expansion** is the period from a trough to a peak, and a **recession** as the period from a peak to a trough. The NBER identifies a recession as "a significant decline in economic activity spread across the economy, lasting more than a few months, normally visible in real GDP, real income, employment, industrial production." This is significantly different from the commonly cited definition of a recession being signaled by two consecutive quarters of decline in real GDP. If the economy does not begin to expand again then the economy may be considered to be in a state of **depression**.

16.4 Impact on Business Operations:

How the business cycle affects business operations may be best explained by looking at how one business responds to these cycles. Normal Maintenance is a small business that provides a variety of construction services to homeowners. They specialize in roofing, deck installations, siding, and general home maintenance. They employ three full-time workers, who typically work forty hours per week for an average of twelve dollars per hour. The company has been in business in the same town for than twenty years and has a solid reputation for quality work and reliability.

16.4.1 Expansion:

Normal Maintenance is busy and has recently had to turn down jobs because it lacks the capacity to do all the work offered. Homeowners now want to make home repairs and improvements which they had had to put off during the sour economy. With the economy improving, others are fixing up their homes to sell. Faced with so much demand, the owner of Normal Maintenance must decide whether to pay his existing workers overtime (which will increase the costs for each job and reduce profits) or hire additional workers. The competition for qualified construction labor is steep, and he is concerned that he will have to pay more than his usual rate of twelve dollars per hour or possibly get workers who are not as qualified as his current crew. He is, however, able to charge higher prices for his work because homeowners are experiencing long waits and delays getting bids and jobs completed. The owner purchases a new truck and invests in additional tools in order to keep up with the demand for services. Customers are willing to pay more than usual so they can get the work done. Business is expanding to such an extent that Normal Maintenance and its suppliers are starting to have trouble obtaining materials such as shingles and siding because the manufacturers have not kept

pace with the economic expansion. In general, business is great for Normal Maintenance, but the expansion brings challenges.

16.4.2 Peak:

At the peak of the business cycle, the economy can be said to be "overheated." Despite hiring additional workers, the owner and crews of Normal Maintenance are working seven days a week and are still unable to keep up with demand. They can't work any harder or faster. As a result, the crews are exhausted and the quality of their work is beginning to decline. Customers leave messages requesting work and services, but the owner is so busy he doesn't return phone calls. Jobs are getting started and completed late as the crews struggle to cover multiple job sites. As a result, customer complaints are on the rise, and the owner is worried about the long-term reputation of the business. Neither the business nor the economy can sustain this level of activity, and despite the fact that Normal Maintenance is making great money, everyone is ready for things to let up a little.

16.4.3 Contraction:

As the economy begins to contract, business begins to slow down for Normal Maintenance. They find that they are caught up on work and they aren't getting so many phone calls. The owner is able to reduce his labor costs by cutting back on overtime and eliminate working on the weekends. When the phone does ring, homeowners are asking for *bids* on work—not just placing work orders. Normal Maintenance loses out on several jobs because their bids are too high. The company begins to look for new suppliers who can provide them with materials at a cheaper price so they can be more competitive. The building material companies start offering "deals" and specials to contractors in order to generate sales. In general, competition for work has increased and some of the businesses that popped up during the expansion are no longer in the market. In the short term the owner is confident that he has enough work to keep his crew busy, but he's concerned that if things don't pick up, he might have to lay off some of the less experienced workers.

16.4.4 Trough:

On Monday morning, the crew of Normal Maintenance show up to work and the owner has to send them home: there's no work for them. During the week before, they worked only three days, and the owner is down to his original crew of three employees. Several months ago he laid off the workers hired during the expansion. Although that was a difficult decision, the owner knows from hard experience that sometimes businesses fail not because their owners make bad decisions, but because they run out of money during recessions when there isn't enough customer demand to sustain them. Without enough working capital to keep the doors open, some are forced to close down.

Representatives from supply companies are stopping by the office hoping to get an order for even the smallest quantity of materials. The new truck and tools that the owner purchased during the boom now sit idle and represent additional debt and costs. The company's remaining work comes from people who have decided to fix up their existing homes because the economy isn't good enough for them to buy new ones. The owner increases his advertising budget,

hoping to capture any business that might be had. He is optimistic that Normal Maintenance will weather this economic storm—they've done it before-but he's worried about his employees paying their bills over the winter.

The owner of Normal Maintenance has been in business for a long time, so he's had some experience with the economic cycle. Though each stage has its stressors, he has learned to plan for them. One thing he knows is that the economy will eventually begin to expand again and run through the cycle all over again.

16.5 National Income Estimations in India:

- The first attempt to calculate national income of India was made by Dadabhai Naoroji in 1867-68, who estimated per capita income to be ₹ 20.
- The first scientific method was made by Professor VKRV Rao in 1931-32, but was not very satisfactory.
- The first official attempt was made by National Income Committee headed by Professor PC Mahalanobis in 1949.
- According to the National Income Committee Report (1954), National Income of India was ₹ 8710 crore and Per Capita Income was ₹ 225 in 1948 – 49.
- In India, Central Statistical Organization (1949) now renamed as Central Statistical Office (CSO) has been formulating National Income.

16.5.1 Gross Fixed Capital Formation (GFCF):

- It refers to net additions of capital stock such as equipment, buildings and other intermediate goods. A nation uses capital stock in combination with labour to provide services and produce goods.
- To grow at a faster rate, a nation needs high levels of capital formation, so that it can grow its aggregate income as well as per capital income. This is because higher levels of capital stock enable an economy to produce more goods and services.
- To achieve a high level of capital formation, a nation should also achieve high levels of domestic savings (both households and firms), so that capital formation can be funded without relying on external debt.
- In GFCF, the term gross signifies that adjustments due to depreciation of capital stock (e.g., machinery) are not made. When such an adjustment is made, it is called Net Fixed Capital Formation.
- The term fixed signifies that only fixed capital is counted and financial assets, stocks of inventories etc are excluded.
- GFCF also excludes land sales and purchases.

16.5.2 Incremental Capital Output Ratio (ICOR):

- ICOR is used to assess a country's level of production efficiency. ICOR equals Annual Investment/Annual Increase in GDP. Higher levels of ICOR mean that capital is not being used efficiently to increase production. Generally, for most countries ICOR is around 3.

Organizations In India Related To National Income Accounts:
Central Statistical Organization:
- Central Statistical Office (CSO), was set-up in 1949. It is one of the two wings of the National Statistical Organization (NSO), along with National Sample Survey Office (NSSO), responsible for coordination of statistical activities in the country and for evolving and maintaining statistical standards
- Its activities include compilation of national accounts, conduct of annual survey of industries and economic census, compilation of index of industrial production, as well as consumer price indices.
- It also deals with various social statistics, training, international cooperation, industrial classification etc.

16.5.3 National Sample Survey Office (NSSO):

- NSSO was set-up in 1950, for conducting large scale sample surveys to meet the data needs of the country, for the estimation of national income and other aggregates.
- It was recognized in 1970, by bringing together all aspects of survey work under a single agency known as NSSO.
- NSSO undertakes the fieldwork of Annual Survey of Industries in the whole country except Jammu and Kashmir.

16.6 Management of Cyclical Fluctuations

Monetary policy as measure to control business cycle fluctuation refers to all those measures which are taken with a view to control money and credit supply in the country. All these cyclical fluctuations are due to the capitalist economy. We can avoid the cyclical fluctuations if we shift our economy from capitalist to socialist.

16.6.1 Types of fluctuations

1. Regular or cyclical fluctuation: refers to different periods of growth or decrease that occur over time, respecting a pattern.
2. Irregular fluctuation: it does not obey foreseeable changes, and they occur due to different external effects.

Businesses that are running in a capitalist economy are likely to have ups and downs in their financial and production-related activities. If we see these fluctuations in a graph, we can witness that these fluctuations are making a wave in the graph. This wave in the graph is termed as the business cycle or trade cycle or economic fluctuations. A general trade cycle or business cycle has four stages which are classified as prosperity, recession, depression and recovery. These four stages that are present in the business cycle are termed as economic fluctuations in economical terms.

16.7 Control of Business Cycle Fluctuations Measures and Controls

Following are the main measure which can be suggested for the effective control of business cycle fluctuation.
1. Monetary Policy
2. Fiscal Policy
3. State Control of Private Investment
4. International Measures to Control of Business Cycle Fluctuation
5. Reorganization of Economic System

16.7.1. Monetary Policy A Control of Business Cycle

Monetary policy as measure to control business cycle fluctuation refers to all those measures which are taken with a view to control money and credit supply in the country. When we are in the state of full employment and we are facing inflation, a deflationary policy may be adopted. The central bank can reduced the quantity of money in circulation. The bank can adopt different measures for this purpose, like increase in the bank rate, selling of securities in the market, increasing the reserve ratio of the member banks etc.

On the other hand, in case of deflation the central bank can adopt inflationary monetary policy by lowering the bank rates or purchase of securities. Monetary policy has achieved a very limited success in the past, because central bank has not full power over the supply of money and credit in the country. Moreover, the quantity of money has failed during the world depression of 1930s.

16.7.2. Fiscal Policy Measure to Control of Business Cycle Fluctuation

Fiscal policy as measure to control business cycle fluctuation nowadays is considered to be a powerful anti-cycle weapon in the hands of the government. Fiscal policy involves the process of shaping the public finance (income and expenditure) with a view of reduce fluctuations in the business cycle and attainment of full employment without inflation.

In case of inflation the governments reduces the public work programs, imposing heavy taxes on business profits to discourage private investment, reduces purchasers power, taking loans from the people, prepares surplus budget to reduce public debt. All these fiscal measures greatly help in reducing the inflationary trend in the economy.

If the economy facing depression, the government increases it expenditure on public works programs like construction of new canals, new roads, buildings etc. Increase in government expenditure, income, employment, profit and consumption of the people. In order to encourage private investment the government reduces taxes on profit. The government also prepares deficit budget and the deficit is met by loans. All these fiscal measures to control business cycle sets in upswing in the economy.

16.7.3. State Control of Private Investment

Some economists have suggested that if a government takes control of private investment is a tool to control of business cycle fluctuations can be controlled within the limits. The other economists, who disagree with the above view state that if a government takes control of private investment, private investment will be discouraged. Low investment will reduce employment

and income. J.M Keynes is of the view that if we adopt the middle way we can get control of business cycle fluctuation.

16.7.4. International Measures Control of Business Cycle

Today, every country has trade relations with the rest of the world. If there is inflation or deflation in one country, it can be easily carried to other countries. The example of great depression can be given. Business cycle is an international phenomenon and it should be tackled on international level. Different measures to control business cycle fluctuations have been suggested by some well-known economists these are:

Control of International Production

International Bill Stock Control

International Investment Control

16.7.5. Reorganization of Economic System

Some economists suggest that there should be complete reorganization of the whole economic system to control of business cycle fluctuation. The capitalistic system of production should be replaced by the socialistic system of production. In socialistic economy, there are few chances of cyclic fluctuations. In 1930, when all capitalist countries of the world were suffering from depression, it was only socialist countries which were free from such crisis.

16.8 Macro models-circular flow

Circular Income Flow in a Two Sectors Economy, Circular Money Flow with Saving and Investment. The Circular income Flow in a Three-Sector Closed Economy. The Circular flow in a Four-Sector Open Economy (Adding Foreign Sector) and finally, importance of the circular flow in detail.

16.8.1 Circular flow of income:

The circular flow of income is a way of representing the flows of money between the two main groups in society - producers (firms) and consumers (households). These flows are part of the fundamental process of satisfying human wants.

As we have already seen, a free market economy consists of two components, or **sectors,** as they are called. These are **firms** and **households**. People in households work for firms (selling their factor services) and receive wages in exchange. On the scale of the whole economy, this is known as national income - the total amount of income earned over a given time period. This money is spent on food, clothing, transport, entertainment etc, and so it returns to the firms. This is the circular flow.

1... Factor services: land, labour, capital and enterprise

2... Income: rent, wages, interest and profit
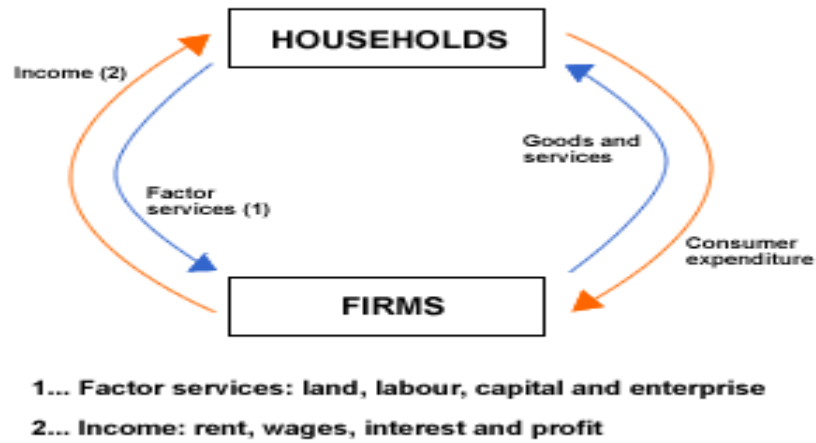
Figure 1 Circular flow of income:

We can see this circular flow in Figure 1. Households sell their factor services to firms (in the factor markets) and in exchange receive wages (the left hand side of the flow).   In   the meantime, households spend this income on goods and services (in the goods market) and in exchange receive the goods and services themselves (the right hand side of the flow). Economists call the wages plus the other forms of income, national income and give it the code 'Y'. Domestic consumption is given the code 'C'.

Not all income is spent, however. Some is saved. Savings are coded as '**S**'. Other money is used to buy goods or services produced overseas. The money to buy these goods and services flows out of the country. It is given the code '**M**' for imports.
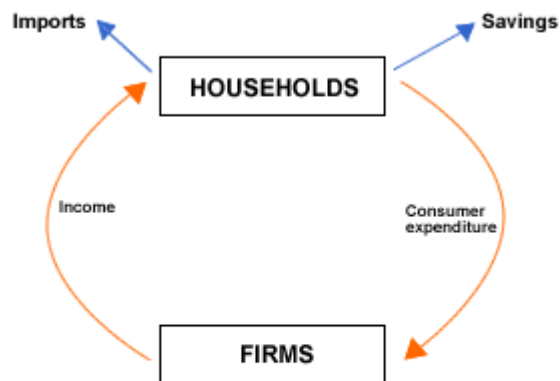
Figure 2 Circular flows-savings and imports:

S and **M** are called **leakages** from the circular flow. The effect of these leakages can be seen in Figure 2.

16.8.2 Leakage:
A leakage is any income not passed on in the circular flow.

On the other hand, some firms make and sell exports overseas, and others borrow money and invest it in their firms in the form of capital goods. These are coded 'X' for exports and 'I' for investment and are called injections as the money returns into the circular flows.

16.8.3 Injection:
An injection is any expenditure not originating in the household sector, including investment, government spending and exports.
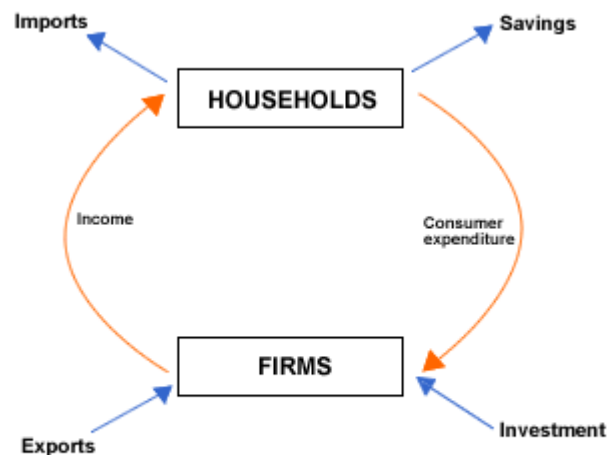
Figure 3 Circular flows- two sector, open economy:

This is a 2-sector, open economy. The flow will be balanced and therefore in equilibrium when the injections are equal to the leakages. If the leakages are greater than the injections then national income will fall, while if injections are greater than leakages national income will rise. This starts to show us some possible policies to promote growth - policies that help boost exports or investment will lead to more injections into the circular flow and therefore boost national income.

We called the economy illustrated in Figure 3 an open economy because it is open to trade with the outside world. If it did not trade outside of itself, we would call it a 2-sector, closed economy.

In almost all economies, the government plays an active part. It takes us, **T**, and uses this money to finance its spending. Even though this partly goes to pay themselves and their bureaucracy, as well as funding schools and hospitals, it finds its way back into the flow. This spending is coded as '**G**' for government expenditure.

Add this to the earlier model and we get the model of a 3-sector, open economy, the most common type of economy in the real world. We can see the circular flow for this economy in Figure 4 below.

Figure 4 Circular flows-3 sectors, open economy:

What will be the equilibrium condition for this economy? Jot down your answer and then follow the Equilibrium link.

We could also represent the government separately in this circular flow - here's an alternative representation of Figure 4. It shows exactly the same flows, but represents them a little differently.
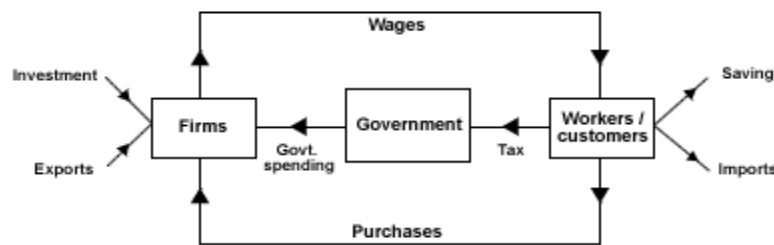
16.9 Summary

A business cycle is **the periodic growth and decline of a nation's economy**, measured mainly by its GDP. Governments try to manage business cycles by spendin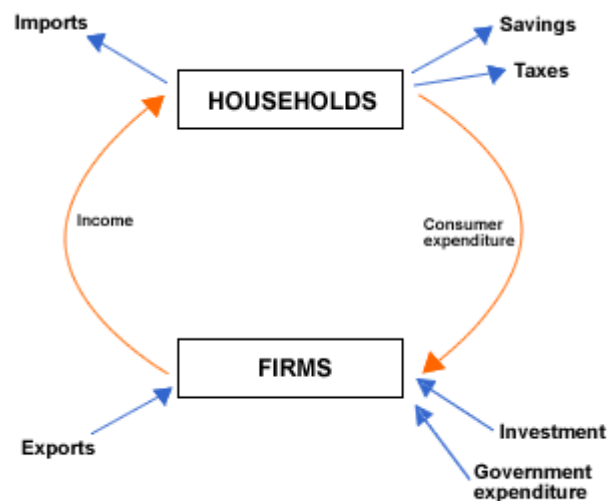g, raising or lowering taxes, and adjusting interest rates. Business cycles can affect individuals in a number of ways, from job-hunting to investing. Business cycles are comprised of concerted cyclical upswings and downswings in the broad measures of economic activity—output, employment, income, and sales. The above text clearly explained about the circular flow of money income in two sectors (viz. household and firm) economy. Followed by the circular money flow with savings and investment. Further it analyzed the circular income flow in a three-sector closed economy i.e adding government sector. Finally, it comprised the circular flow of money income in a four - sector open economy i.e adding foreign sector.

16.10 Keywords

Business Cycles - Business cycles are identified as having four distinct phases: peak, trough, contraction, and expansion.

Business cycle fluctuations- Business cycle fluctuations occur around a long-term growth trend and are usually measured by considering the growth rate of real gross domestic product.

Business cycles are recurrent sequences of alternating phases of expansion and contraction in economic activity.

16.11 Self – Assessment Questions

1. Explain determination of national income?

2. Define business cycle? Explain various stages?

3. Explain the Business Cycle Fluctuations Measures and Controls?

4. Define national income? Explain various concepts of national income?

5. Explains determinants of national income?

6. Explain various measurements of national income?

7. Explain two sectors Model?

8. Explain three sector models?

 9. Explain four sector models?

16.12 Further Readings

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LESSON -17
FISCAL AND MONETARY POLICIES

Learning Objectives

To examine the Fiscal policy

To study the objectives of Fiscal policy in India

To examine Objective of Monetary Policy

To analyses monetary policy in developing countries

To explain evaluation of monetary policy in India

Structure

17.0 Introduction

The means by which the government adjusts its spending levels along with tax rates to influence and monitor the nation's economy it is known as fiscal policy. Let us learn the Fiscal Policy of India here.

17.1 Fiscal Policy of India:

There are several component policies or a mix of policies that contribute to the fiscal policy. These include subsidy, taxation, welfare expenditure, etc. Also, there are a certain investment and disinvestment policies and debt and surplus management that contribute to fiscal policies.

17.1.1 Objectives of a Fiscal Policy:

- In order to stabilize the pricing level in the economy.
- The main objective is to achieve and maintain the level of full employment in the country.
- Also, to stabilize the growth rate in the economy.
- Also, promote the economic development in a country.
- In order to maintain the level of balance of payment in the economy.

17.2 Various Types of Fiscal Policies:

17.2.1 Contractionary Fiscal Policy:

This involves cutting government spending or raising taxes. Thus, the tax revenue generated is more than government spending. Also, it cuts on the aggregate demand in the economy. So, the economic growth leading to the reduction in inflationary pressures of the economy.

17.2.2 Expansionary Fiscal Policy:

This is generally used to give a boost to the economy. Thus, it speeds up the growth rate of the economy. Also, during the recession period when the growth in national income is not enough to maintain the current living of the population.

So, a tax cut and an increase in government spending would boost economic growth and decrease the unemployment rates. Although this is not a sustainable solution. Because this can lead to a budget deficit. Thus, the government should use this with caution.

17.2.3 Neutral Fiscal Policy:

This policy implies a balance between government spending and Furthermore, it means that tax revenue is fully used for government spending. Also, the overall budget outcome will have a neutral effect on the level of economic activities.

17.3 Types of Fiscal Policy:

There are major components to the fiscal policies and they are

17.3.1 Expenditure Policy:

Government expenditure includes capital expenditure and revenue expenditure. Also, the government budget is the most important instrument that embodies government expenditure policy. Furthermore, the budget is also for financing the deficit. Thus, it fills the gal between income and government spending.

17.3.2 Taxation Policy:

The government generates its revenue by imposing both indirect taxes and direct taxes. Thus, it is important for the government to follow a judicial system for taxation and impose correct tax rates. This is because of two reasons. The higher the tax, the reduction in the purchasing power of the people.

This will lead to a decrease in investment and production. Furthermore, the lower tax will leave more money with people that lead to high spending and thus higher inflation.

17.4 Surplus and Debt Management:

When the government receives more amount than it spends than it is known as surplus. Also, when the spending is more than the income than it is known as a deficit. In order to fund the deficits, the government needs to borrow from domestic or foreign sources.

What are the objectives of the Monetary Policy? The objectives are to maintain price stability and ensure adequate flow of credit to the productive sectors of the economy. Stability for the national currency (after looking at prevailing economic conditions), growth in employment and income are also looked into. The monetary policy affects the real sector through long and variable periods while the financial markets are also impacted through short-term implications.

17.5 Aims of Macro Economic Policy:

The aims of macroeconomic policy vary with the goals and objectives of governments. In the earlier days the tools of macroeconomic policy were used to suit the ends of the rulers. Dictators like Adolf Hitler used it for war finance. But in modern days macroeconomic policy aims at broadly speaking, "growth with stability". Generally, the aims of macro-economic policy can be stated as follows. i) Achieving Full Employment Since employment is the general factor determining consumption and investment and also the well being of the subject's governments pay more attention to the aims of achieving full employment. Unemployment is a serious problem all over the world. There are various types of unemployment, the goal of macroeconomic policy is to keep the level of unemployment at the minimum level, full employment is said to be reached when unemployment is kept at the minimum. Keynes and Post Keynesians have highlighted it he importance of maintaining the level of full employment in an economy. In fact many a country has accepted full employment as one of the primary goals of macroeconomic policy. In a way it has become an essential responsibility of modern governments to aim at maintaining the level of full employment in order to avoid distortions in the economy. Macroeconomic policy has to be designed in such a way as to deal with two major types of unemployment, viz, i) unemployment due to inadequate aggregate demand, and ii) due to structural changes. Both these cases can operate. Simultaneously and lead to the total volume of unemployment arising as a result of deficient demand can be removed by a suitable combination of monetary and fiscal policies. But it is rather difficult to combat structural unemployment. Economic policies, fiscal as well as monetary, assigned to achieve and maintain full employment operate through a complicated process of change in the variables and as a result such policy work under certain limitations. ii) Achieving Price Stability Another major goal of macroeconomic policy is maintaining the economy at the level of employment without fluctuations, i.e. maintaining stability of prices. A policy for prices stability must protect the economy from the dangers of both inflationary and deflationary pressures. The is achieved by controlling the aggregate demand through monetary as well as fiscal measures. Moreover government can seek to control price level through wage-price policies or income policies. Stability can also be maintained through another kind of price policy called exhortation i.e., the central authorities make appeals for moderation in fixing prices and wages. This policy has the support of the proponents of the cost-push theory of inflations, wage-price stabilization policies face another problem caused by wage drift it is easy to control the negotiated wage rates than the

earnings of workers. When labour is scarce and the wage rate is controlled. Labour has to be provided certain incentives in the form of bonus, overtime allowance etc. In such a situation there is an increase in average earning of labour although wage rates remain stable. This tendency for earnings to follow aggregate demand, although wage rates do not change is called wage drift such a situation will affect the working of wage-price stabilization policy. Consequently at present, the control of inflation has become the main element of macroeconomic policy. iii) Maintaining the Balance of Payments Macroeconomic policy also aims at avoiding fluctuations in exchange rate. Huge import surplus or a large export surplus is considered undesirable for the smooth functioning of an economy. The balance of payment problems are caused by changes within as well as outside the economy. The central authorities can do little to control exchanges outside the country. The internal causes are (i) domestic inflation and (ii) the changes in consumption patterns taking place in the course of economic growth. Domestic inflation also affects balance of payments. When a country's price level is rising faster than the price level is rising faster than the price levels of competitor countries. Exports will tend to fall and an import well tends to rise thereby creating balance of payment problems. The changes in consumption patterns occur as a result of technological innovations and differing income elasticities of demand for imports and exports. The balance of payments problem can be talked with two types of macroeconomic policies. The first type of policy called expenditure-dampering policy, attempts to reduce national income by raising taxes or reducing government expenditure. The reduction in income will in turn, reduce the expenditure of households on goods. However, the effect of this policy depends upon the proportion of income spent on imports. The second type of policy, namely, the expenditure switching policy attempts tax imports and subsidise exports or devalue the exchange rate. Such a policy changes the prices of foreign goods relating to the exchange rate domestic goods. However the policies for maintaining the balance of payments problems have to be applied with great caution. Both these types of macroeconomic policies can produce certain incidental effects. Nevertheless, the expenditure dampening policies will be preferred during times of overfull employment, whereas the expenditure switching policies will be preferred during periods of full employment. iv) Raising Rates of Economic Growth At present, achieving rapid economic growth has become the major objective in all economics, particularly in the developing onces. Faster rate of economic growth is the surest way to achieve higher standards of living for the people of a country. Growth is a complex macroeconomic policy variable. It is rather difficult to identify the causes, of growth or on growth and therefore difficult to identify the causes of growth or on growth and therefore difficult to influence these causes. Several theories have been put forth by economic about the causes of rapid economic growth. Most of them advocate the policy of raising the rate of new investment as a stimulant to growth. Various views have been expressed about the process of growth some others believe that periods of excess capacity without inflationary pressures are beneficial to growth. It is also held that a drastic cut in demand and recession will have a short term dampening effect on growth. v) Achieving economic justice Another objective of macroeconomic policy is achieving distributive justice: Many believe that growth without distributive justice will lead to a dangerous trend in the economy. Economic justice is an inclusive concept. Generally speaking, it means that the national income is distributed to all sections of population inanequitable manner. In the process of economic development, unless adequate measures are taken the fruits of development. Will go to the rich which will lead to the continuous exploitation of the masses. Gros inequalities in income and wealth will lead to class hatred between the haves and have-nots. Economic justice cannot be ensured by promoting more

economic growth. It requires deliberate and bold actions poverty has to be eradicated and employment potential augmented in order to meet the demand for jobs for the increasing population. Adequate care must be made to avoid concentration of wealth and income. Therefore, distributive justice could be ensured only through concerted efforts.vi) Conflicting Macro Economic Goals and Policies We have seen certain important macro economic goals to be pursued framing economic policies and implementing them. But in actual practice, it may so happen that the different, goals or objectives pursued may be conflicting. It is possible that in implementing a policy to achieve a particular goal, it may be incompatible with another goal. Simply speaking, what is done or attempted to be done by one set of policies may be undone by another set of policies having different goals there are many occasions in which we meet with. Ordinarily, the sphere where conflicting policies will be met with are: (a) Conflict between growth and unemployment (b) Conflict between prices and unemployment (c) Conflict between prices and balance of payments (d) Conflict between saving and investment. (e) Conflict between political ideology and practice. Thus, the governments will face conflicting goals and policies in different spheres when conflict arises in macro-economic goals, the government should have to clearly specify the priorities and evolve a compromise so that it will create least distortion in the economy. vii) Tools of macro Economic Policy Just as economists refer in the broadest categories the above mentioned macroeconomic goals, they similarly refer in equally broad categories to monetary policy and fiscal policy as the two basic types of policy that are employed in working towards the achievement of specific goals. Monetary policy aims at reorganizing the monetary sector and controlling the economy by monetary curbs like credit control or credit creation, lowering or raising interest rates, and so on. Prior of Keynes monetary policy was considered as the only policy measure to control the economy. Keynes advocated strong fiscal measures to overcome the great depression. It was realized during the depression that monetary measures were alone not sufficient. Fiscal policy was therefore incorporated in the kit of macroeconomic policy. Fiscal policy consists of tax measures, relief measures, deficit or surplus budgeting, etc., However, these two policies have to be applied as mutually complementary policies. Although there is often significant overlapping between monetary policy and fiscal policy, it is rather impossible to envisage any major monetary or fiscal measure which does not influence the other. Nevertheless it is necessary to make meaningful distinction between monetary policy on the one hand and fiscal policy on the other in order to limit the scope of these policies. Monetary policy is perhaps the oldest macroeconomic policy. In the Pre Keynesian days, monetary policy was the single established instrument of macroeconomic policy with price stability as its establishment objective. Two events in the 1930s drastically changed the role of monetary policy and the sphere of its objectives. Firstly the Great Depression which produced mass unemployment caused a major shift in the objective of national economic policy in favour of full-employment. Secondly, the Keynesian Revolution following the publication of Keynes" General Theory in 1936 brought to the fore another economic policy instrument namely, fiscal policy and a second objective, namely the maintenance of full employment, now more commonly described economic stability. The concept of monetary policy eludes precise definition, Paul Elnzig defines monetary policy as „All monetary decisions and measures irrespective of whether their aims are monetary; or non-monetary system". Harry Johnson describes monetary policy as a sel decisions of the Central Bank's control over the supply and cost of money as an instrument for achieving the objectives of economic policy. With respect to the objectives before us the overall effectiveness of monetary policy thus, depends on what

contribution it can make to the attainment of full employment, price stability and rapid economic growth.

17.6 Monetary Policy

The monetary policy is one of macroeconomic policy. It analyse the aim and objectives of monetary policy and inflation. It also explain the evaluation of monetary policy in India.

Macro Economic Policy Every economy developed as well as developing, aspires to certain goals in India, as in other countries these include rapid economic growth, high employment and stable prices. To achieve this, appropriate macroeconomic policy must be pursued. In this lesson we will examine the essentials of macroeconomic policy. Theory of Economic Policy economics is the realm of normative economics and should be differentiated from positive economics, positive economics deals with purely analytical matters of cause and effect. For example the question of how much the level of income will be raised by an increase in government purchases without at the same time inquiring if the change is desirable. Policy economics turns the question around starting with some pre-determined target level of income and so on, the society judges to be essential, it asks how much as change in government expenditure would be required to attain this target. Thus, macroeconomic policy refers to the process of manipulating a number of policy instrument in such a way as to achieve desired changes in the size and composition of national income, employment level and price stability in the economy. And macroeconomic policies are framed within the limitations of the economic policy.

Development of Macro Economic Policy The classical and neo-classical economists relied more on the market mechanism to correct economic disorders. But in recent years economics have brought in the short-run aggregate analysis as a better tool to understand and solve the problem of the whole economy. Advances in economic knowledge and the ability to apply that knowledge to matters of practical policy making have come from several complimentary sources. The first was the Keynesian's theoretical breakthrough of 1930s. The second and perhaps equality important, was the increase in fatal knowledge about the behavior of the economy. Before the close of the first quarter of the twentieth century no systematic records of Gross National Product GNP and its component were published. Sufficient data regarding labour force, employment, unemployment did not become available until after Second World War. The third was the development of multispectral, models of the economy with the help of computer technology. These models have improved forecasting and analysis to a degree unthinkable in the period before. World war II Obviously the last forty years or so have witnessed the transition of economics from a field characterized by deductive speculation into a truly empirical policy science.

17.6.1 Objective of Monetary Policy:

The scope and objectives of monetary policy have widened after the Keynesian Revolution of 1930s. Before the Keynesian breakthrough the sole objective of monetary policy was to secure price stability. However the publication of Keynes, book general Theory and the Great Depression of 1929 had radically altered the nature and scope of monetary Policy. The maintenance of full employment or economic stability became the leading objective of monetary policy in the post-war years. The problems of economic growth and balance of payments have also come under the purview of monetary policy. The various objectives of monetary policy are:

(a) to attain full employment (b) to maintain price stability (c) to achieve rapid economic growth and (d) to maintain the balance of payments equilibrium hence there is often the problem of giving the priority among these objectives. These objectives are also often conflicting with each other. It may not be possible to achieve all these objectives simultaneously. Therefore the central banks are inclined to choose a set of objectives which will primarily serve the interest of national economic welfare. Instruments of Monetary Policy In order to implement the different objectives of the monetary policy it has some instruments and tools which can be classified in to the general or quantitative instruments and the selective or quantitative instruments.

17.6.2 Monetary Policy and Recession:

The monetary policy proved to be quite ineffective the great depression of 1930"s Keyness book General Theory confirmed the view that monetary policy will be an ineffective weapon to promote recovery during a period of depression. Since the fifties, the monetary policy has been gradually given an important role in fighting deflation. In recent years the economists opine that monetary policy is more effective in controlling deflation rather inflation. However there is no change in the conclusion that monetary policy will be ineffective a period of acute depression. We can explain how monetary policy is in effective a period of severe depression. The expansionary monetary policy during depression will lead to the flow or more and more funds into the commercial banks. The lending capacity commercial banks is increased through the instruments of monetary policy like cash reserve requirement. Discount rate and open market operations. But the mere availability of credit at attractive rates does not ensure economic recovery.

17.6.3 Monetary Policy and Inflation:

This monetary policy is often used by the central bank to fight inflation. The restrictive monetary policy during a period of demandful inflation facts certain limitations. During this period prices due to a rapid expansion of aggregate demand the central bank through its respective monetary policy would try to keep the money supply constant or reduce it. But still the monetary policy may not be effective because the aggregate demand ma to increase. This is due to the fact that velocity of money in the hands of the public is increasing during this period. The central bank can employ the general weapons of monetary control and restrict the expansion of money supply. The restrictive monetary policy in time of inflation is rendered ineffective under certain conditions sometimes the commercial banks might finance the expanding business activity through portfolio adjustment securities. This is done by commercial banks selling the government securities and lending the sale proceeds to the borrowers. This practice of the commercial banks will not increase the total amount of credit and during a period of inflation it reduced the efficacy of restrictive monetary policy. Another limitation to restrictive monetary policy is due to the existence of financial intermediaries like insurance companies. The ending operations of these institutions in times of inflation reduces the effectiveness of restrictive monetary policy. They practice of business houses accepting public deposits also imposes another limitation on the working of monetary policy. Since these business houses are able to secure public deposits at higher interest rates, the effectiveness or restrictive monetary policy is weaken.

17.6.4 Monetary Policy in Developing Countries:

In the case of developing countries the primary objectives is to achieve rapid economic growth. These countries face many problems like inflationary pressure, continuous deficits in balance of payments, merge domestic savings and slow rate of capital formation. The rising prices are checked by price controls. These are not administered properly and the result is that there is only suppressed inflations. To tackle the unfavourable balance of payments, import controls, and exchange controls are introduced in the less developed countries. To earn foreign exchange export promotion policies are introduced. These problems create uncertainty regarding the pattern of economic growth. The unstable price level upsets the economic decision making. The patterns of investment in these countries is also adversely affected by the uncertain economic conditions. The role of monetary policy in the less developed countries must be considered only in this background. The monetary policy has to be applied in the midst of these barriers to growth the success of monetary policy in stimulating economic growth, achieving price stability and promoting cannot formation will depend upon favourable conditions. The foremost problem in the application of monetary policy for the developing economics is absence of co-ordination between macro economic policies. Another problem is the limited and sectoral impact of monetary policies in these countries. Another problem is the choice of suitable instruments of monetary policy and the proper time for their application. The success of monetary policy in promoting economic growth will depend largely upon the competence and expert knowledge and proper judgment on the part of monetary authorities. To facilitate the proper use of monetary policy the developing nations must first improve their currency and credit systems. To control effectively the supply and use of money, the art of central banking must be acquired. More use can also be made of selective credit controls in order to influence the pattern of investment and production. By differentiating between the cost and availability of credit to different sectors, selective credit can influence the allocation of credit and there by the pattern of development. The potential effectiveness of monetary policy should not be however over estimated. As a means of promoting capital formation, monetary policy is of secondary importance compared to fiscal policy. An easy money policy can increase the availability of credit. But it will not be utilized unless profit expectations are reasonably high. Such a polity will promote inflation. The experience of many a country shows that mere expansion of bank credit does not necessarily promote investment of inflation ensures. The success of monetary policy as a means to economic growth in developing economics will depend upon the fundamental stimulus which should come from enterprise and entrepreneurship.

17.6.5 Monetary Policy In India:

The commencement of the process of planned economic development in 1950- 51 meant that the Indian economy had to achieve certain pre-determined targets in terms of the rate of growth of national income. In turn, this required stepping up the savings, effective mobilization of savings and investing them in an appropriate manner in the various sectors of the economy. As the structure of financial institutions which existed them was not adequate from the point of view of mobilizing saving and changing them in the desired manner to the various sectors. One of the major tasks before the country was to develop this structure. This required in strengthening the structure through various measures and ii) the establishment of new institutions either to work in social filed or to affords some measure of protection to the existing units in the structure. Along with the problem of developing the structure of financial institutions there was also an equally

argents problem of monetary policy to facilitate achievement of the targets. As the planning proves gathered momentum the environment in which banking institutions had to work underwent significant changes. The sector of large and medium scale industry experienced sustained upsurge. Its demands for credit not only increased in volume but it needed different types of credit. The needs of the public sector for bank credit also increased considerably especially when with the adoption of the objectives of creating a socialistic pattern of society, the public sector entered the field of industry in a big way. While the industrial sector of the economy was undergoing a rapid development and incomes were being generated as a result of the programmes of investment in industry and infrastructure, agriculture continued to lag behind for a variety of reasons giving rise to shortages of basic wage goods either directly as in the case of food grains or indirectly because of shortages of raw materials like raw cotton. Raw jute, oil seeds, etc. based on agriculture which were required for manufacturing articles of essential consumption or for exports. The resultant inflationary pressures stepped up further the demand for bank credit. This necessitated an increasingly active monetary policy. It was expected from the monetary authorities that they will ensure an adequate supply of credit to meet the increasing developmental needs of agriculture, industry and other sectors of the economy, specially the priority sectors. At the same time it was also realized that a large expansion in bank credit without matching supplies of real goods would lead to inflationary pressures in the economy. Inflation, it must be recalled, if not consistent with planned programmes of development. Therefore, it was further expected from the monetary authorities that they are to so regular the monetary economy that an undue expansion of bank credit to the different sectors of the economy was not allowed. The policy that was formulated and adopted by the Reserve Bank of India, came to be known as that of controlled monetary expansion.

17.6.6 Objectives of Monetary Policy in India:

In a developing economy like India the keynote of monetary policy is what may be called controlled monetary expansion, Controlled monetary expansion implies two things: a) Expansion in the supply of money, and b) Restraint on the secondary expansion of credit. a) Expansion in the supply of money, and In a developing economy money supply has to be expanded sufficiently to match the growth of real national income. Although it is difficult to say what relation the rate of increase in money supply should bear to the rate of growth in national income, more generally the rate of increase in money supply has to be somewhat higher than the projected rate of growth of real national income for two reasons. First, as income grow the demand for money as one of the components of savings tends to increase. Secondly, an increase in money supply is also necessitated by the gradual reduction of the non-monetarised sector of the economy. In India the rate of increase in money supply has been far in excess of the rate of growth in real national income. It has resulted to a large extent in the creation of consistent inflationary pressures in the economy. b) Restraint on the secondary expansion of credit. Government budgetary deficits for financing a part investment outlays constitute an important aspect. Major aim of monetary policy is to restrain the secondary expansion of credit. This indeed possesses difficult problems. Since the general tendency in such a situation is not a marked expansion of credit for the private sector also, while exercising restraint care is taken that the legitimate requirements of production and trade are not affected adversely. The Reserve Bank has also a positive responsibility for channelling credit into desired sectors. The fulfilment of the above twin goals requires, a) a correct choice of instruments of monetary policy designed to regulate the flow of credit and b) an effective credit planning

17.6.7 Evaluation of Monetary Policy in India:

The Reserve Bank of India is empowered under the statue to use the usual instruments of monetary policy such as the bank rate, open market operations, variable reserve ratios, selective credit controls and so on. The choice of instruments of the monetary controls that can be used in limited however by the structural characteristics of the money market. The monetary policy of the Reserve Bank of India has been marked by flexibility to suit the changing condition of the economy. The Reserve Bank of India has employed general as well as selective instruments of credit control of combat inflationary pressures in the economy. The policy of selective credit control which generally dominated the some has not however been rigidly applied. Nevertheless in the midst of restriction of monetary policy the Bank often resorted of effect credit liberalisation. The financing of the priority sectors of a significant scale would not have been possible without the liberal re-finance facilities provided by the Bank. A review of the operation of selective credit control measures implemented by the Reserve bank of India shows that these measures to a larger, extent succeeded in achieving their objective. However these created at the same time certain limitations. Especially in setting of over-all monetary expansion making it possible for the borrower to take resource to non-banking sources for finance. This underlined the need for maintaining harmony between the monetary and fiscal policies. Thus the Reserve Bank's monetary policy, in its long term perspective continued basically to be attuned to the requirements of planned economic development with preferential treatment to priority sectors such as small scales industries co-operatives defence supplies and exports Nevertheless in the short-term, adjustments in the availability and cost of credit have been made from time to time to suit the needs on the particular situation. The monetary policy of the? Reserve Bank of India has been described as one of the controlled expansion of credit. The object has been to restrain prices while answering at the same time the legitimate credit requirements so as to avoid adverse effect on production, an articulate and flexible monetary policy has been pursued by the Reserve Bank of India which aimed at reconciling the needs of an increasing volume of money supply to finance expansion of output while restraining the use of credit for unproductive and non-essential purposes. In short monetary policy has been operated within the overall framework of mixed economy wedded to development planning. The major failure of the monetary policy lies on the price front. The monetary authorities in India has been in a position to curb inflationary rises, in prices, which has often taken violent jumps at intervals. However, in evaluating the success or failure of Reserve Bank's monetary policy it should be borne in mind that the Bank can at the best, provided the fiscal operations of the Government do not run counter to the goals of monetary policy pursued by the Bank, control only those forces which create pressure on the price level form the side of money supply. The Reserve Bank has nothing within its power to control the non-monetary pressure in the economy which tends to push up prices. In the face of given limitations the monetary policy in India has been operated with a fair amount of success. The Reserve Bank has played the useful role of a careful watch dog over the affairs of commercial banking system in the economy, making the system play a positive role in the planned economic development of the country.

17.7 Instruments of Monetary Policy:

       1. Bank Rate of Interest
       2. Cash Reserve Ratio
       3. Statutory Liquidity Ratio
       4. Open market Operations

5. Margin Requirements
6. Deficit Financing
7. Issue of New Currency,
8. Credit Control Inflation

Inflation is a rise in the general level of prices of goods and services in an economy over a period of time. When the price level rises, each unit of currency buys fewer goods and services. A chief measure of price inflation is the inflation rate.
When Prices rise the Value of Money falls.

1. Creeping Inflation (0%-3%)
2. Walking Inflation (3% - 7%)
3. Running Inflation (10% - 20 %)
4. Hyper Inflation (20% and above)

Inflation can have positive and negative effects on an economy. Negative effects of inflation include loss in stability in the real value of money and other monetary items over time; uncertainty about future inflation may discourage investment and saving, and high inflation may lead to shortages of goods if consumers begin hoarding out of concern that prices will increase in the future. Positive effects include a mitigation of economic recessions, and debt relief by reducing the real level of debt.

17.8 Deficit Financing:
• It means printing of new currency notes by Reserve Bank of India .If more new notes are printed it will increase the supply of money thereby increasing demand and prices.
 • Thus during Inflation, RBI will stop printing new currency notes thereby controlling inflation.
• During Inflation the RBI will issue new currency notes replacing many old notes.
• This will reduce the supply of money in the economy.
Fiscal Policy Fiscal policy refers to the government's choices regarding the overall level of government purchases or taxes. Fiscal policy influences saving, investment, and growth in the long run. In the short run, fiscal policy primarily affects the aggregate demand. It refers to the Revenue and Expenditure policy of the Govt. which is generally used to cure recession and maintain economic stability in the country.

17.8.1 Instruments
1. Reduction of Govt. Expenditure
2. Increase in Taxation
3. Imposition of new Taxes
4. Wage Control
5. Rationing
6. Public Debt
7. Increase in savings
8. Maintaining Surplus Budget Other measures

17.9 Summary:
 The text summarized macro-economic policy like, monetary policy, and its aims, objectives, importance all discussed. Further it discussed about monetary policy in developing countries as

well as Indian experiences. Monetary policy is the control of the quantity of money available in an economy and the channels by which new money is supplied. By managing the money supply, a central bank aims to influence macroeconomic factors including inflation, the rate of consumption, economic growth, and overall liquidity.

17.10 Keywords

Expansionary fiscal policy - Fiscal policy that increases the level of aggregate demand, either through increases in government spending or cuts in taxes.

Standardized employment budget - The budget deficit or surplus in any given year adjusted for what it would have been if the economy were producing at potential GDP.
Contractionary monetary policy - a monetary policy that reduces the supply of money and loans

Expansionary monetary policy - a monetary policy that increases the supply of money and the quantity of loans

17.11 Self –Assessment Questions:
1. Define fiscal policy? Explain fiscal policy in India
2. Define monetary policy? Explain monetary policy in India
3. Explain the Evaluation of Monetary Policy in India?
4. What are the objectives and instruments of Monetary Policy in India?
5. Explain the Monetary Policy in Developing Countries?

17.12 Further Readings
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LESSON -18
MACRO ENVIRONMENT IN INDIA

Learning Objectives
➢ To study the factors of Macro Environment in India
➢ To Understand the Objectives and types of Fiscal Policy
➢ To Learn the Monetary policy
➢ To know the LPG policies in India

Structure

18.0 Introduction

18.1 Factors of Macro Environment

18.2 Fiscal Policy

18.2.1 Objectives of fiscal Policy

18.3 Types of Fiscal policy

18.4 Economic Effects of Fiscal Policy

18.5 Monetary Policy

18.6 Industrial Policy

18.7 Liberalization, Privatization and Globalization

18.7.1 Liberalization

18.7.2 Privatization

18.7.3 Globalization

18.8 Summary

18.9 Key words

18.10 Self-Assessment Questions

18.11 Further Readings

18.0 Introduction:

A macro environment refers to the set of conditions that exist in the economy as a whole, rather than in a particular sector or region. In general, the macro environment includes trends in the gross domestic product (GDP), inflation, employment, spending, and monetary and fiscal policy. The macro-environment is closely linked to the general business cycle as opposed to the performance of an individual business sector.

1. The macro-environment refers to the broader condition of an economy as opposed to specific markets.

2. The macro-environment can be affected by GDP, fiscal policy, monetary policy, inflation, employment rates, and consumer spending.
3. The state of the macro environment affects business decisions on things such as spending, borrowing, and investing.

The macro-environment refers to how the macroeconomic conditions in which a company or sector operates influence its performance. Macroeconomics deals with aggregate production, spending, and the price level in an economy as opposed to individual industries and markets.

The amount of the macro environment's influence depends on how much of a company's business is dependent on the health of the overall economy. Cyclical industries are heavily influenced by the macro environment, while basic staple industries are less influenced. Industries that are highly dependent on credit to finance purchases and business investments are strongly influenced by changes in interest rates and global financial markets.

Micro environment
Macro environment
Economic
Non-Economic

Internal Environment
Refers to all the factors that are within an organization which impart strengths or cause weaknesses of strategic nature.
♦ Controllable factors. These include: ∕ Value system ∕ Mission and Objectives ∕ Management Structure and Nature

External Environment
Includes all factors outside the organization which provide opportunities or pose threats to the organization
1. Uncontrollable factors
2. Consists of Micro and Macro environment

Micro Environment Factors
1. Suppliers
2. Customers
3. Marketing Intermediaries
4. Competitors
5. Publics
6. Financial Community

Macro Environment
It comprises general trends and forces that may not immediately affect the organization but sooner or later will alter the way organization operates. Macro Environment:-
1. Economic
2. Non-Economic
Economic Environment
Economic stages that exists at a given time in a country
Economic system that is adopted by a country for example.
Capitalistic, Socialistic or Mixed Economy

1. Economic planning, such as five year plans, budgets, etc.
2.   Economic policies for example, monetary, industrial and fiscal policies
3. Economic Indices such as National Income, Per Capital Income, Disposable Income, Rate of growth of GNP, Distribution of Income, Rate of savings, Balance of Payments etc.
4. Economic Problems
5. Functioning of economy

Non Economic Environment
1. Regulatory Environment
2. Socio- Cultural Environment
3. Demographic Environment
4. Technological Environment
5. Political Environment

18.1 Factors of the Macro Environment

Analysing the macro environment is an important part of strategic management. Business analysts often conduct a PEST (political, economic, socio-cultural, and technological) analysis to identify macro-economic factors that currently affect or in the future may affect business. Some of the key factors composing the macro environment include the following:
a) Gross Domestic Product

Gross Domestic Product (GDP) is a measure of a country's output and production of goods and services. The Bureau of Economic Analysis releases a quarterly report on GDP growth that provides a broad overview of the output of goods and services across all sectors.1 An especially influential aspect of GDP is corporate profits for the economy, which is another measure of an economy's comprehensive productivity.
b) Inflation

Inflation is a key factor watched by economists, investors, and consumers. It affects the purchasing power of the US dollar and is closely watched by the Federal Reserve. The target rate for annual inflation from the Federal Reserve is 2%. Inflation higher than 2% significantly diminishes the purchasing power of the dollar, making each unit less valuable as inflation rises.
c) Employment

Employment levels in the United States are measured by the Bureau of Labor Statistics, which releases a monthly report on business payrolls and the status of the unemployment rate.45 The Federal Reserve also seeks to regulate employment levels through monetary policy stimulus and credit measures. These policies can ease borrowing rates for businesses to help improve capital spending and business growth, resulting in employment growth.
d) Consumer Spending

Consumer spending made up 54% of the U.S. GDP in the second quarter of 2021 and is widely considered to be an important indicator of macroeconomic performance.6 Slow growth or decline in consumer spending suggests a decline in aggregate demand, which economists consider to be a symptom or even a cause of macroeconomic downturns and recessions.
e) Monetary Policy

The Federal Reserve's monetary policy initiatives are a key factor influencing the macro environment in the United States. Monetary policy measures are typically centered around interest rates and access to credit. Federal interest rate limits are one of the main levers of the

Federal Reserve's monetary policy tools. The Federal Reserve sets a federal funds rate for which federal banks borrow from each other, and this rate is used as a base rate for all credit rates in the broader market. The tightening of monetary policy indicates rates are rising, making borrowing more costly and less affordable.

f) Fiscal Policy

Fiscal policy refers to government policy around taxation, borrowing, and spending. High tax rates can reduce individual and business incentives to work, invest, and save. The size of a government's annual deficits and total debt can influence market expectations regarding future tax rates, inflation, and overall macroeconomic stability. Government spending drives borrowing and taxation; it is also widely used as a policy tool to try to stimulate economic activity during slow times and make up for sluggish, consumer spending and business investment during recession

18.2 Fiscal Policy

Fiscal policy is the means by which the government **adjusts its spending levels** and **tax rates** to monitor and influence the nation's economy. Fiscal policy is a result of several component policies or a mix of policy instruments. These include the policy on taxation, subsidy, welfare expenditure, etc; investment or disinvestment strategies; and debt or surplus management.

18.2.1 Objectives of Fiscal Policy:

1. First and the foremost objective is to maintain and achieve full employment in the country.
2. To stabilize the general price level in the economy.
3. To stabilize the growth rate of the economy.
4. To maintain equilibrium in the Balance of Payments.
5. To promote the economic development of a country.

18.3 Types of Fiscal Policy

It is generally used for giving a boost to the economy i.e. to speed up the rate of growth of the economy or during a recession when growth in national income is not sufficient enough to maintain the present standards of living of the population. A tax cut and/or an increase in government spending would be implemented to boost economic growth and lower unemployment rates. This is not a sustainable policy, as it leads to budget deficits and thus, should be used with caution by the government.

18.3.2 Contractionary Fiscal policy: It involves raising taxes or cutting government spending so that government spending is less than the tax revenue. It cuts upon the aggregate demand in the economy and thus economic growth leading to a reduction in inflationary pressures in the economy.

18.3.3 Neutral Fiscal Policy: This implies a balanced budget where government spending is equal to the tax revenue. It further means that government spending is fully funded by tax revenue and, the overall budget outcome has a neutral effect on the level of economic activity.

18.4 Components of Fiscal Policy:
There are four key components of Fiscal Policy are as follows:

18.4.1 Taxation Policy
The government gets its revenue by imposing taxes both direct and indirect. It is very important for the government to follow a judicious taxation policy and impose correct tax rates because of following two reasons – higher taxes will cause a reduction in the purchasing power of the people leading to decrease in production and investment and lower taxes will leave more money with the general public leading to high spending levels and thus high inflation.

18.4.2 Expenditure Policy
Government Expenditure includes Revenue expenditure and capital expenditure. The government budget is the most important instrument embodying the expenditure policy of the government. The budget is also used for deficit financing i.e. filling the gap between Government spending and income.

18.4.3 Investment & Disinvestment Policy
Optimum levels of domestic as well as a foreign investment are needed to maintain economic growth.

18.4.4 Debt and Surplus Management
If the government received more than it spends, it is called a surplus. If the government spends more than income, then it is called a deficit. To fund the deficit the government has to borrow from domestic or foreign sources. It can also print money for deficit financing.

18.5 Economic Effects Of The Fiscal Policy
Governments use fiscal policy to influence the level of aggregate demand in the economy so that certain economic goals can be achieved:
- Price stability;
- Full employment;
- Economic growth.

The Keynesian view of economics suggests that increasing government spending and decreasing the rate of taxes are the best ways to have an influence aggregate demand, stimulate it, while decreasing spending and increasing taxes after the economic expansion has already taken place.

Additionally, Keynesians argue that expansionary fiscal policy should be used in times of recession or low economic activity as an essential tool for building the framework for strong economic growth and working towards full employment.

In theory, the resulting deficits would be paid for by an expanded economy during the expansion that would follow; this was the reasoning behind the New Deal.

Governments can use a budget surplus to do two things:
- to slow the pace of strong economic growth;
- to stabilize prices when inflation is too high.

Few Methods To Fund Fiscal Policy

Governments spend money on a wide variety of things, from the military and police to services such as education and health care, as well as transfer payments such as welfare benefits. This expenditure can be funded in a number of different ways:

1. **Taxation**
2. **Seigniorage**, the benefit of printing money
3. **Borrowing** money from the population or from abroad
4. **Dipping** into fiscal reserves
5. **Sale of fixed assets** (e.g., land)

18.5 Monetary Policy

Monetary policy, the demand side of economic policy, refers to the actions undertaken by a nation's central bank to control money supply to achieve macroeconomic goals that promote sustainable economic growth. } Monetary policy, the demand side of economic policy, refers to the actions undertaken by a nation's central bank to control money supply to achieve macroeconomic goals that promote sustainable economic growth. } Monetary policy can be broadly classified as either expansionary or contractionary. } Monetary policy tools include open market operations, direct lending to banks, bank reserve requirements, unconventional emergency lending programs, and managing market expectations (subject to the central bank's credibility).

Monetary policy consists of the process of drafting, announcing, and implementing the plan of actions taken by the central bank, currency board, or other competent monetary authority of a country that controls the quantity of money in an economy and the channels by which new money is supplied. Monetary policy consists of management of money supply and interest rates, aimed at achieving macroeconomic objectives such as controlling inflation, consumption, growth, and liquidity. These are achieved by actions such as modifying the interest rate, buying or selling government bonds, regulating foreign exchange rates, and changing the amount of money banks are required to maintain as reserves.

Economists, analysts, investors, and financial experts across the globe eagerly await the monetary policy reports and outcome of the meetings involving monetary policy decision-making. Such developments have a long lasting impact on the overall economy, as well as on specific industry sector or market. Monetary policy is formulated based on inputs gathered from a variety of sources. For instance, the monetary authority may look at macroeconomic numbers like GDP and inflation, industry/sector-specific growth rates and associated figures, geopolitical developments in the international markets (like oil embargo or trade tariffs), concerns raised by groups representing industries and businesses, survey results from organizations of repute, and inputs from the government and other credible sources.

Monetary authorities are typically given policy mandates, to achieve stable rise in gross domestic product (GDP), maintain low rates of unemployment, and maintain foreign exchange and inflation rates in a predictable range. Monetary policy can be used in combination with or as an alternative to fiscal policy, which uses taxes, government borrowing, and spending to manage the economy. } The Federal Reserve Bank is in charge of monetary policy in the United States. The Federal Reserve has what is commonly referred to as a "dual mandate": to achieve maximum employment while keeping inflation in check. Simply put, it is the Fed's responsibility

to balance economic growth and inflation. In addition, it aims to keep long-term interest rates relatively low. Its core role is to be the lender of last resort, providing banks with liquidity and serve as a bank regulator, in order to prevent the bank failures and panics in the financial services sector.

18.6 Industrial policy

Industrial policy means rules, regulations, principles, policies and procedures laid down by government for regulating, developing, and controlling industrial undertakings in the country.

  a. It prescribes the respective roles of the public, private, joint, and co-operative sectors for the development of industries.

  b. It also indicates the role of the large, medium and small scale sector.

It incorporates fiscal and monetary policies, tariff policy, labour policy, and the government attitude towards foreign capital, and Role to be played by multinational corporations in the development of the industrial sector.

18.6.1 Objectives of Industrial policy

Industrial policy statements have been announced from 1948 onwards.

♦ A number of objectives have been projected by the Government of India while making industrial policy declarations.

♦ Some of the important objectives can be identified as follows:

1. Achieving a socialistic pattern of society.
 2. Preventing undue concentration of economic power.
3. Achieving industrial development.
4. Reducing disparities in regional development.
5.Providing opportunities for gainful employment.
6. Achieving a self-sustained economy.
7. Achieving faster economic growth.
8. Alleviating poverty.
9. Protecting and developing a healthy small- scale sector.
10. Updating technology and modernization of industry.
11. Liberalization and globalization of economy

Industrial Policy Resolution, 1948

It declared the Indian economy as Mixed Economy
Small scale and cottage industries were given the importance The government restricted foreign investments
Industries were divided into 4 categories

1. Exclusive monopoly of central government(arms and ammunitions, production of atomic energy and management of railways)
2. New undertaking undertaken only by state(coal, iron and steel, aircraft manufacturing, ship building, telegraph, telephone etc.)
3. Industries to be regulated by the government(Industries of basic importance)
4. Open to private enterprise, individuals and cooperatives(remaining)

Industrial Policy Resolution, 1956 (IPR 1956)

This policy laid down the basic framework of Industrial Policy

This policy is also known as the Economic Constitution of India
It is classified into three sectors
Schedule A – which covers Public Sector (17 Industries)
Schedule B – covering Mixed Sector (i.e. Public & Private) (12 Industries)
Schedule C – only Private Industries
  This has provisions for Public Sector, Small Scale Industry, Foreign Investment. To meet new challenges, from time to time, it was modified through statements in 1973, 1977, and 1980.

Industrial Policy Statement, 1977
1. This policy was an extension of the 1956 policy.
2. The main was employment to the poor and reduction in the concentration of wealth.
3. This policy majorly focused on Decentralisation
4. It gave priority to small scale Industries
5. It created a new unit called "Tiny Unit"
6. This policy imposed restrictions on Multinational Companies (MNC).

Industrial Policy Statement, 1980
1. The Industrial Policy Statement of 1980 addressed the need for promoting competition in the domestic market, modernization, selective Liberalization, and technological up-gradation.
2. It liberalised licensing and provided for the automatic expansion of capacity.
3. Due to this policy, the MRTP Act (Monopolies Restrictive Trade Practices) and FERA Act (Foreign Exchange Regulation Act, 1973) were introduced.
4. The objective was to liberalize the industrial sector to increase industrial productivity and competitiveness of the industrial sector.
5. The policy laid the foundation for an increasingly competitive export-based and for encouraging foreign investment in high-technology areas

Industrial policy 1991

New Industrial Policy, 1991
  The New Industrial Policy, 1991 had the main objective of providing facilities to market forces and to increase efficiency.

Larger roles were provided by
L – Liberalization (Reduction of government control)
P – Privatization (Increasing the role & scope of the private sector)
G – Globalisation (Integration of the Indian economy with the world economy)
  Because of LPG, old domestic firms have to compete with New Domestic firms, MNC's and imported items
  The government allowed Domestic firms to import better technology to improve efficiency and to have access to better technology. The Foreign Direct Investment ceiling was increased from 40% to 51% in selected sectors.
  The maximum FDI limit is 100% in selected sectors like infrastructure sectors. Foreign Investment promotion board was established. It is a single-window FDI clearance agency. The technology transfer agreement was allowed under the automatic route.

Phased Manufacturing Programme was a condition on foreign firms to reduce imported inputs and use domestic inputs, it was abolished in 1991.

Under the Mandatory convertibility clause, while giving loans to firms, part of the loan will/can be converted to equity of the company if the banks want the loan in a specified time. This was also abolished.

Indian Government agreed to the conditions of lending agencies and announced New Economic Policy (NEP) which consisted wide range of reforms. Broadly we can classify the measures in two groups:

1. Structural Reforms

With long-term perspective and eyeing for improvement of the economy and enhancing the international competitiveness, reforms were made to remove rigidity in various segments of Indian economy.

18.7 Liberalization Privatisation And Globalisation

1. Liberalization
2. Indian Economy During Reforms

2. Stabilization Measures (LPG)

These measures were undertaken to correct the inherent weakness that has developed in Balance of Payments and control the inflation. These measures were short-term in nature. Various Long-Term Structural Reforms were categorized as:

Liberalization

Privatization and

Globalization

Collectively they are known by their acronym LPG. The balance of Payment is the system of recording the economic transactions of a country with the rest of the world over a period of one year. When the general prices of goods and services are increasing in an economy over a period of time, the same situation is called Inflation.

18.7.1 Liberalization

The basic aim of liberalization was to put an end to those restrictions which became hindrances in the development and growth of the nation. The loosening of government control in a country and when private sector companies' start working without or with fewer restrictions and government allow private players to expand for the growth of the country depicts liberalization in a country.

Objectives of Liberalization Policy

1. To increase competition amongst domestic industries.
2. To encourage foreign trade with other countries with regulated imports and exports.
3. Enhancement of foreign capital and technology.
4. To expand global market frontiers of the country.
5. To diminish the debt burden of the country.

Impact of Liberalization

18.7.2 Privatization

This is the second of the three policies of LPG. It is the increment of the dominating role of private sector companies and the reduced role of public sector companies. In other words, it is

the reduction of ownership of the management of a government-owned enterprise. Government companies can be converted into private companies in two ways:

By disinvestment

By withdrawal of governmental ownership and management of public sector companies.

Forms of Privatization

Denationalization or Strategic Sale: When 100% government ownership of productive assets is transferred to the private sector players, the act is called denationalization.

Partial Privatization or Partial Sale: When private sector owns more than 50% but less than 100% ownership in a previously construed public sector company by transfer of shares, it is called partial privatization. Here the private sector owns the majority of shares. Consequently, the private sector possesses substantial control in the functioning and autonomy of the company.

Deficit Privatization or Token Privatization: When the government disinvests its share capital to an extent of 5-10% to meet the deficit in the budget is termed as deficit privatization.

Crisis of 1991 and Indian Economic Reforms

Objectives of Privatization

1. Improve the financial situation of the government.
2. Reduce the workload of public sector companies.
3. Raise funds from disinvestment.
4. Increase the efficiency of government organizations.
5. Provide better and improved goods and services to the consumer.
6. Create healthy competition in the society.
7. Encouraging foreign direct investments (FDI) in India.

18.7.3 Globalization

It means to integrate the economy of one country with the global economy. During Globalization the main focus is on foreign trade & private and institutional foreign investment. It is the last policy of LPG to be implemented.

Globalization as a term has a very complex phenomenon. The main aim is to transform the world towards independence and integration of the world as a whole by setting various strategic policies. Globalization is attempting to create a borderless world, wherein the need of one country can be driven from across the globe and turning into one large economy.

Outsourcing as an Outcome of Globalization

The most important outcome of the globalization process is Outsourcing. During the outsourcing model, a company of a country hires a professional from some other country to get their work done, which was earlier conducted by their internal resource of their own country.

The best part of outsourcing is that the work can be done at a lower rate and from the superior source available anywhere in the world. Services like legal advice, marketing, technical support, etc. As Information Technology has grown in the past few years, the outsourcing of contractual work from one country to another has grown tremendously. As a mode of communication has widened their reach, all economic activities have expanded globally.

Various Business Process Outsourcing companies or call centres, which have their model of a voice-based business process have developed in India. Activities like accounting and book-keeping services, clinical advice, banking services or even education are been outsourced from developed countries to India.

18.8 Summary

        After reading this lesson the candidate may be able to understand that the word macro environment in India, the lesson indicates the . So here macro economics indicates the study about the whole economic conditions prevalent in the country, Factor effect the Macro environment are GDP, fiscal policy, industrial policy, Monetary Policy, LPG objectives that affect the environment in India. In short, the study about the whole economy comes under the category of macro environment and the study discuss the policies and measures by the government that impact on the whole environment in India.

18.9 Key words

Industrial Policy- Industrial policy means rules, regulations, principles, policies and procedures laid down by government for regulating, developing, and controlling industrial undertakings in the country

Gross Domestic Product- Gross domestic product (GDP) is the standard measure of the value added created through the production of goods and services in a country during a certain period

Liberalization- liberalization was to put an end to those restrictions which became hindrances in the development and growth of the nation

Globalization – Globalization is to transform the world towards independence and integration of the world as a whole by setting various strategic policies

Fiscal policy - Fiscal policy is the means by which the government **adjusts its spending levels** and **tax rates** to monitor and influence the nation's economy

18.10 Self Assessment Questions

1. What is Fiscal policy? Discuss the objectives of fiscal policy
2. Briefly Explain the Types of fiscal Policy
3. State the Monetary policy in India
4. Analyse the LPG objectives in Macro environment
5. Explain the Industrial policy in India.

18.11 Further Readings

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LESSON-19
ECONOMIC ENVIRONMENT AND TRANSITION IN INDIAN ECONOMY

Learning Objectives
- ➤ To study the Sources and Prerequisites of Economic Growth
- ➤ To Understand the Growth Potentials of Indian Economy
- ➤ To Learn the Effects and Forces of Globalization in Indian Economy

Structure

19.0 Introduction

19.1 Sources Economic growth and development

19.2 Prerequisites of Economic Growth

19.3 Barriers of Faster Economic Growth

19.4 Growth Potentials of Indian Economy especially after transition

19.5 structural changes in Indian Economy

19.6 Reasons for implementing the policy of LPG

19.7 Weakness of LPG

19.8 Effects of Globalization in Indian Economy

19.9 Forces of Globalization

19.10 Summary

19.11 Key words

19.12 Self Assessment Questions'

19.13 Further Readings

19.0 Introduction

Economic growth is the foremost objective of macroeconomic policies. Higher the economic growth higher the national income which will help solve problems of poverty, unemployment, inflation, and international trade of a country

$$\text{Growth rate} = \frac{Y}{P}$$

Y = real income (NNP at factor cost)

P = population

Economic growth implies more output and economic development implies both increase in output and changes in the technology and institutional arrangement by which it is produced. Input efficiency leads to growth, allocation of input by sector leads to

development. Economic development is the outcome of conscious and deliberate efforts involved in planning. Economic growth signifies the progress of an economy under the stimulus of certain favorable circumstances.

19.1 Sources of Economic Growth and Development:

Economic Factors:

1. Natural resources: Without natural resources it is difficult to achieve economic development. It highly depends on factor endowment.
2. Human Resource and population growth: Labour is the most active factor of production. Therefore sufficient number of quality labour force is essential.
3. Capital formation and accumulation: Economic growth is a function of capital formation of a country. Without capital mobilization it is impossible to develop the economy.
4. Technological progress: Advancement of technology is a key factor for development and it helps to utilize resources in an effective manner.
5. Entrepreneurship: Without strong risk taking entrepreneurs an industry cannot innovate and introduce new products to the society.
6. Investment criteria: The investment policy and regulation of a country improves the investment and in turn helps the economy to grow at a faster rate.
7. Removal of market imperfection: To develop a countries economy removal of imperfect market and reducing monopoly market are essential.
8. Capital output ratio: High capital output ratio indicates the increase in productivity of capital invested.

Non Economic Factors:
1. Desire for development: Desire to grow in the right direction is important for the economic development of a country.
2. Widespread education: The growth in the educational sector will help the society to grow at a faster rate.
3. Social and industrial reforms: Liberal social system, and reduced disparity helps the economy to grow.
4. Good government: Establishment of consistent law and order is essential to grow internationally.

19.2 Pre Requisites of Economic Growth:
1. Population growth
2. Removal of monopoly
3. Optimum utilization of resources
4. Development planning and
5. Financial stability
Meier and Baldwin have listed the following areas as important for government action
1. Government may establish markets
2. Government may establish enterprises at high risk and low profit .
3. Government direction is needed to promote external economies for balanced growth.
The Government of India set up the Central Statistical Organization (CSO) to monitor the economic growth and expenditure of various goods and services. The available data from CSO provides the valuable information on the ongoing economic transition in India.

19.2.1 Pre Transition:
The economic scenario provided before the adoption of the New Economic Policy were,

1. Highly autarkic economy: India was experiencing autarky and closed economic system.
2. Centralized planning: All economic plans were centralized and
3. Protectionist trade policies: Trade policy was closed and not opened to the world. I.e. it was following a protectionist trade policy.
4. High tariffs and non tariff barriers: India had high level of tariff and non tariff trade barriers
5. Capital controls: The capital market was controlled by the government of India.
6. Import substitution: Our country had been adopting import restrictions with large import substitutions.
7. State owned public sector industries: Most of the industries were owned by the central or state government before economic reforms.
8. State controlled financial sector: The financial sector was controlled and monitored by the government.
9. Import Restrictions: Reservation policies like quota system were followed for imports.
10. Regulated markets: Market for all commodities was regulated by the government.
11. Administrative prices: Market price was regulated with the help of price ceiling and by adopting dual pricing policy.

19.2.2 Post Transition:
     The economic scenario prevailing as on date i.e. after the adoption of the New Economic Policy in India after 1991 are:
1. Deregulation and liberalization of the Industries
2. Lowering of the tariffs and easing of import licensing requirements.
3. Export incentives were provided to the exporters to promote exports.
4. Special Economic Zones were established to promote exports and encourage exports.
5. Single window licensing policy.
6. Declining incidence of poverty.
7. Divestment of public sector units.
8. Liberalization of the banking and financial sectors.
9. Promotion of Foreign Direct Investments.
10. Tax incentives for capital investment in domestic and foreign markets
11. Managed exchange rate in the place of controlled exchange rate.
12. Portfolio investment strengthened

19.3 Barriers to the Faster Economic Growth:
1. Low productivity levels: The economy was opened up but the productivity level was low to compete in the market.
2. Infrastructure deficiencies: Infrastructure facilities of our country have not fully improved to meet the targeted economic growth.
3. Rising public sector debts: The government borrowings and accumulated debt were high.
4. High subsidies fostering inefficiency: Government provided more subsidies which in turn increased the inefficiency of the organizations.
5. Low literacy levels: The literacy rates have not increased at a faster rate to compete in the open economy.
6. Demographic deficiencies: The demographic deficiencies, did not support the transitional policies of our country.
7. Rigid labour laws: The labour laws were not favorable to bring in more Human Resource
8. Functioning of judicial system: Our legal environment also has not been supportive towards the liberalization of the country.

9. Campaigns against cultural consumerism: Due to transition the consumer behaviour of the society has changed and hence we are able to see the cultural commonality, and also campaigns against the cultural consumerism.

10. Corruption: Along with economic changes corruption has been pervasive at all levels and has increased.

19.4 Growth Potentials of the Indian Economy Especially After Transition:

1. Large potential markets: Both urban and rural markets of India are growing at a faster rate.

2. Booming IT and Biotech sectors: India occupies a leading position in the world in these sectors.

3. Highly professional and scientific manpower: India is having the third largest technically qualified man Power.

4. Trend towards political decentralization: Now the trend has started towards decentralization

5. Dominant player in south Asian region in certain areas of economic activity.

6. Competitive Environment has already set in almost all spheres of life.

Inspite of all the above stated barriers India has great potential to grow in the future. The major reasons for the growth of the economy are liberalization of our economy followed by privatization and globalization. Liberalisation, Privatisation And Globalisation (LPG)

Need for Liberalization:

India has vast natural resources and abundant manpower but our contribution in the world trade is less than 1%. India has low Per capita income and Net National product. To improve the same, liberalization has been recommended. Under the direction of the former Prime Minister P.V. Narashima Rao the economic reform process was resorted to improve the position of the Indian economy in the world and to solve the problems of trade deficit.

Path to Liberalization:

The Government has to release the economy from the restrictive rules and regulations followed earlier. It was appropriate on the part of the government of India to implement globalization strategy to pave the way for economic liberalization.

The Liberalization, Privatization and Globalization (LPG) model was developed in 1991 by the then finance minister Dr. Manmohan singh under the direction of the Prime Minister Shri.P.V.Naraimha Rao .

19.5 Structural changes in the Indian economy were :

1. End of the private sector: The government decided to transfer the loss making public sector units to the private, but there were no takers, therefore the government went for disinvestment of the public enterprises including profit making units.

2. Government permitted private sector to set up individual units without license.

3. The investment ceiling was lifted and hence the private investment could go up to any level.

4. The Government approved up to 51% FDI. No permission was required for hiring foreign technicians and technology.

5. Rehabilitation schemes to reconstruct the sick public sector enterprises. (board for industrial and financial reconstruction) BIFR was established.

6. Greater autonomy was given to manage Public sector units.

7. Economy was opened to other countries to encourage exports. Therefore it encouraged private participation and expected the rise in exports from India.

19.6 Reasons for Implementing the Policy of Liberalization, Privatization and Globalization:

1. Excess consumption and expenditure over revenue have been experienced resulting in heavy government borrowings.
2. Growing in-efficiency in the use of resources.
3. Mismanagement of firms and the economy.
4. Losses of public sector enterprises.
5. Various distortions like poor technological development, shortage of foreign exchange, borrowing, mismanagement of foreign exchange reserves etc., have distorted the Economic growth.
6. Low foreign exchange reserves.
7. Burden of national debt and
8. Inflationary pressure on the economy.

19.7 Weakness of LPG Model:

The major weaknesses of India's LPG model were:
1. Narrow focus
2. Free entry of MNCs
3. Agricultural sector was bypassed
4. Facilitated more imports
5. Capital intensive development

Liberalization:

Relaxation of government restriction in social and economic policies was called as liberalization. Trade liberalization means removing the tariff restriction on the flow of goods and services between countries. Liberalization is a pre requisite for privatization. Capital market should be developed to absorb the changes. In India the people were allowed to start their business without getting license except in limited fields. Due to this, a number of firms have been started domestically which increased the production and expanded the market.

Privatization:

Privatization means transfer of assets or service functions from public to private ownership through franchising, leasing, contracting and divesture. Disinvestment means disposal of public sector units, equity to the private sectors. Privatization helps the public sector to modernize, diversify and make their business more competitive. It increases managerial efficiency of the organization and revives sick units. But it may result in income inequality, causing difficulty in maintaining social justice and public welfare.

Privatization means sale of nationalized industrial units to the private sector and transferring the revenue available from the public sector to the private sector by adopting any one of the following methods.
1. Sale of part of nationalized industries to the private
2. Sale of individual assets of Government bodies to the private
3. Creation of competitive spirit of the private sector to the state enterprises.

Arguments in Favour of Privatization:

1. Cost: Private sector has productive efficiency therefore their cost of production have been less than the cost of the goods produced in the public enterprises.

2. Choice and quality: Private sector spends more on R&D and they can produce more variety with better quality and offer more choice to the customers, due to their allocative efficiency.

3. Innovation: Private sectors have efficiency in innovating new models.

4. The Invisible hand of the market: Free market forces will ensure the optimal allocation of resources.

5. Wider share of ownership: The ownership of the business is well spread throughout the country and not held in one or in a few hands.

6. Reduction in public borrowing and state spending: Privatization reduces the government borrowings and spending.

Problems of Privatization

Privatization created more monopoly in the market and inequality in pricing which had led to negative externalities. Only through creation of competition and with regulatory measures we can control and minimize the problems of privatization in the economy.

1. Why should government own and run firms?
2. Lower cost: Public sector organizations were productively efficient and have economies of scale.
3. Better management: Government organizations have better management system than private.
4. Control of monopolies: Public sector enterprises will reduce and control the monopoly market.
5. Maximum benefit: Government provides maximum of net social benefits and not profit.
6. Greater control of the economy: Public sector can control the economy to a greater extent.
7. Fair distribution of resources: The available resources are allocated in an effective manner.
8. Apart from the above mentioned reasons Public sector is more efficient than private organizations. Private enterprises exploit workers and consumers more than the public sector enterprises. Profit is not the sole motive for public sector enterprises

Globalization

Globalization means integrating the domestic economy with the world economy, moving towards a new world economic order which leads to integrated financial markets and trade. Globalization improves the effective allocation of resources and expenditure of a country along with economic growth. Globalization has helped developed countries more than the developing countries. Globalization has completely transformed the way Indian business used to operate. Globalization is a process of integration of the world into one market by removal of all the political, geographical trade and business barriers among nations. Indian businesses should formulate the following strategies to overcome the challenges posed by globalization.

1. Behavioral strategy: Continuous up gradation of skills, knowledge and technology of Human Resource is important for empowerment. Efforts should be made to develop a comprehensive version of managerial strategy which helps to improve the decision making skills and problem solving skills of the managers.

2. Operational strategy: It producing quality products and maintaining the international quality is essential in the globalised market. Organizations must use various methods like TQM, JIT, Kaizen and others to improve the operational efficiency. Therefore organizations should plan a gradual transition in technological up gradation.

3. Marketing strategy: To maximize customer satisfaction, to render better services, and to introduce e-marketing, net marketing etc., Various marketing strategies should be followed to improve retail environment.

4. Investment for growing FDI: Due consideration should be given to the exchange rate, other risks like political risk and economic risk.

5. Governance: The business situation changed dramatically over the last few years. Quality is important for sustainable development in this competitive environment. Business opportunities are more with tough competition. Therefore good governance will maximize the value of shareholders wealth.

6.Risk management strategy: International business is complex in nature and it leads to various types of risks. Which can be managed by insurance, letter of credit, joint ventures, but the top management should consider broader business strategies to define and overcome these risks.

Effects of Globalization On Indian Economy

1. India's share in the world export have increased from .53% (1950) to 1 % (2005)
2. Foreign exchange reserves had increased to $180billion (2007)
3. Export growth has increased to a maximum of 20 percent per annum.
4. Current account deficit of 3% has reduced to 1.1%.
5. Reduction in external debt crisis from 8 billion in 1990 to $3billion in 2006
Benefits to consumers: Consumers were able to get large variety of goods with improved quality at a reasonable price.
Globalizing - World Evidence:
1. Expanding Trade
2. Increasing capital flow
3. Rising tourism and migration
4. Linking of farthest corners of the world by new technology.

19.9 Forces of Globalization:

1. Revolutionary changes have taken place in the field of Information technology.
2. Advancement in travel and transportation
3. Liberalization of trade regimes
4. Emergence of trading blocs

Upshot of Globalization:

1. Unprecedented economic growth
2. Multi-locational manufacturing
3. Surge in international trade
4. Explosive growth in capital movements

5. Increase in labour movement
6. Emergence of cultural commonalities

The Way Forward:
1. Build on your strength
2. Develop a global force
3. Achieve excellence in areas of one's comparative advantage
4. Build up an effective regulatory system
5. Develop a good social security network

19.10 Summary

Thus we can conclude by saying that globalization is progressing well world over, whether we like it or not it is bringing together different nations as one. We can see the evidence in the Indian economy. Government of India has also taken many steps towards globalization which has its own merits and demerits. It is evident that India has potential to face the situation. This is the macroeconomic environment prevailing in India as well as in other parts of the world.

19.11 Key words

Economic growth - Economic growth is an increase in the production of economic goods and services, compared from one period of time to another

Globalization Globalization means integrating the domestic economy with the world economy, moving towards a new world economic order which leads to integrated financial markets and trade

Privatization Privatization created more monopoly in the market and inequality in pricing which had led to negative externalities

19.12 Self Assessment Questions:

1. Distinguish between economic growth and economic development.
2. List out the sources of economic growth and development of India.
3. Describe the pre and post economic scenario of India.
4. What are the major barriers to our economic transition?
5. Discuss the growth potential of the Indian economy after transition.
6. Justify the need for Liberalization, Privatization and Globalization of our country.
7. What are the major weaknesses of LPG?
8. Why government should own and run firms?
9. Define privatization. What are the advantages and disadvantages of privatization of public enterprise in India?
10. Discuss the effects of globalization on consumers, business and economy.

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LESSON -20
BUSINESS AND GOVERNMENT

Learning Objectives
- ➢ To study the Role of Government in India
- ➢ To Understand the Characteristics and Benefits Public, Private Partnership (PPP)
- ➢ To learning the Reasons for failure of PPP.
- ➢

Structure

21.0 Introduction

Government of India directly or indirectly plays a major role in assisting, encouraging and directing private sector, providing infrastructure facilities, controlling private economic activity, promoting public and joint sectors and planning, formulating framework for sustainable economic development of the country. Overall economy is regulated through fiscal, monetary policy and trade policies to participate in the globalization.

20.1 Role Of Government in Business

1. Individual freedom: Consumers enjoy freedom of consumption, production and process,
2. Coexistence of public and private sector: Basic industries requiring heavy investment, and social welfare activities belong to the public sector and the rest to the private sector.
3. Planning: Detailed planning is for public sector, broader targets are for the private.
4. Social welfare: Policies are framed to develop backward regions, increasing employment and infrastructure facilities.

There are various ways in which the government may influence business operations in a country.
1. Public Enterprises: Sometimes government may involve in the production of goods and services. If the commodity is a necessary one and the supply of the commodity is optimized by the government, It may maximizes the social welfare of the society.

2. Price fixation: The government insists on maximum retail price to stabilize the price level in the market. Depending upon the political and economic conditions the government may raise the prices.

3. Subsidies: States and the Central Government of India provides various kinds of subsidies to the domestic producers and for the exporters through various schemes.

4. Direct and Indirect Intervention: Through taxation, Government intervenes in the business directly and indirectly through the quota system .

5. Control of Monopoly: Monopoly enterprise is harmful to the welfare of consumers. The government of India passed Monopoly and Restrictive Trade Practice Act (MRTP) to control them.

Thus the government may participate in the production activities along with the private enterprise in an economy beside controlling, regulating and governing the activities of the latter in the general interest of maximizing the welfare of the people of the country.

20.2 Economic Environment Trough Public Private Participation (PPP) Public Private Participation (PPP)

It is defined as cooperative institutional arrangements between public and private enterprise which has gained wide interest around the world. PPP model is a new way to handle infrastructure projects. It can benefit both the public and private sector enterprise. Both the sectors have certain special merits and if we combine them the result will be better for all with new products and service. These projects involve many forms of contractual arrangements which are long term in nature. This reduces pressure on government budgets and increases value for money in infrastructure.

According to Van Ham and Koppenjan "PPP are co-operation of some sort of durable activity between public and private actors in which they jointly develop products and services and share risks, costs and resources which are connected with these products"

The major arrangements between the public and private participation are:

1. Institutional cooperation.
2. Long term infrastructure contracts. Like construction of Roads for the public use which reduces the pressure on the exchequer, but benefits the private through way toll fee.
3. Community development
4. Urbanization and
5. Economic development

Both the central government and states are increasingly using the PPP mode to meet the gaps in the provision of basic services. For the past 10 years India has attracted more private investments which are complex in nature. Comprehensive cross cutting PPP legislations have been used more extensively in countries that operate under the civil code. It often covers aspects such as, specifying which sectors PPP operate in, how to set tariffs for PPPs, the role of different institution in PPP program, procurement of PPPs and dispute resolution procedures.

According To the World Bank Report In Australia, the national government has virtually no role in state level PPPs. In Canada, the federal government's PPP office acts as a resource center and promoter of the benefits of rationale for using PPPs, rather than acting as an advisory body. In South Africa the treasury's PPP unit plays a role in both guidance and approval. Brazil intends to establish capacities at the national level to offer detailed guidance to the states in the development of PPPs.

20.3 PPPs in India

Infrastructure shortages are proving as key constraints in sustaining and expanding Indian economic growth. To overcome this problem India has decided to double the investment in the next 5 years and one third of the investment is funded by the private sector. The Government of India is promoting the expansion of PPP in improving infrastructure facilities including highways, ports, power and telecom. India follows public contracting, joint ventures, long term contractual agreements like BOT, BOOT, BOLT etc.,. In India more than Rs.1000 billion worth PPP projects are under progress.

Government Of India's Definition:

According to the government of India , PPP project means "a project based on a contract or concession agreement, between a government or statutory entity on the one side and a private sector company on the other side, for delivering an infrastructure service on payment of user charges".

Private Sector Company means a company other than the public and cooperative enterprise.

PPP broadly refers to long term contractual partnerships between the public and private sector agencies, specifically targeted towards financing, designing, implementing and operating infrastructure facilities and services that were traditionally provided by the public sector.

20.4 Characteristic Features of PPPs:

1. Cooperative and contractual relationship: To establish complementary relationship between the public and private enterprises. Normally PPPs are for more than 10 years therefore cooperation is essential to build and strengthen the relationship in a contractual agreement.

2. Shared responsibilities: The responsibilities are shared based on the nature of the project and are not always equal.

3. A method of procurement: Through PPPs government procures the capital, assets or infrastructure and is allowed to play major roles in planning, finance, design, operation and maintenance.

4. Risk transfer: The government sector transfers the risks to the private sector that has skills and experience to manage the same.

5. Flexible ownership: The ownership of PPP projects may or may not be retained by the government .Sometimes private sector provides only facilities and planning but does not take up the ownership.

PPP appraisal committee (PPPAC) consists of secretary of Planning commission, Department of expenditure, Department of legal affairs and the Department sponsoring the project. Under the chairmanship of the secretary of department of economic affairs the activities are undertaken.

1. Ministry of finance will be the nodal center for examining, scrutinizing and making concession agreements.

2. Planning commission will set up a PPP appraisal unit to prepare a report for improving the concession terms.

3. Department of legal affairs will scrutinize the legal perspective

4. Planning commission and finance ministry will engage experts to undertake due diligence.

5. For final approval the projects are sent to a competent authority

20.5 Benefits Of PPP:

To the public sector: PPP helps the government in raising capital, expertise and infrastructure to render better service in an effective manner to the general public.

To the private sector: Private sector gets long term business opportunities, building relationship with the government and private sector for better understanding and assistance.

But on the other hand the public sector can lose its control and efficiency. This may also become time consuming and expensive instead of cost effective. Some times private sectors may not be flexible in agreements.

20.6 Reasons For Failure Of Some PPP Projects

The major reasons for the failure of some PPP projects are insufficient resources, poor drafts, lack of experience and inadequate monitoring.

In India over 70% of the projects were on strengthening road ways and railways and building ports. PPP projects dealt with urban infrastructure of which 8 were on solid waste management, 2 water and sanitation and 1 bus terminal project under progress. The total cost awarded was $339 billion of which 55% was used for ports, 36% for road ways and 5% on airport development. Confederation of Indian Industries (CII) has organized many training programs at central and state level. Many government organizations and civil servants have participated in it. India could consider the policy legislature framework and information dissemination to strengthen funds for preparation of PPP projects.

20.7 Summary

In the initial stages of planning, the Government was given a prime of place in the industrial development of our country. That's why the public enterprises were in commanding heights in the Indian economy. The approach of the Government towards economic development is changing and therefore the reader will also have to understand these changes. Now a days the concept of public private participation has been gaining importance world over and also in India. India has adopted this concept especially in the tertiary sector through projects that strengthen road ways, railways, bus terminal projects and urban infra structure projects like solid waste management.

20.8 Keywords

PPP(Public Private Partnership)- Public-private partnerships involve collaboration between a government agency and a private-sector company that can be used to finance, build, and operate projects, such as public transportation networks, parks, and convention centers.

Government- A government is an institution or a system made of a group of people that takes care or manages a country or a state.

Economic Environment-The economic environment consists of external factors in a business market and the broader economy that can influence a business. It can divide the economic environment into the microeconomic environment, which affects business decision making - such as individual actions of firms and consumers

Economic development - Economic development is defined as the expansion of capacities that. contribute to the advancement of society through the realization of individuals', firms' and communities' potential.

20.9 Self Assessment Questions
1. Explain the role of Government in Indian business.
2. Discuss the major support rendered by the government of India towards business. What is PPP?
3. What are the benefits of PPP? Discuss in the point of view of a business man and as an individual.
4. Explain the advantages and disadvantages of PPP in India.

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LESSON-21
FOREIGN DIRECT INVESTMENT

Learning Objectives
  ➢ To Study the Forms of Foreign Capital
  ➢ To Learn the government policy towards the foreign capital
  ➢ To Understand the Factors of FDI

Structure

21.0 Introduction

21.1 Forms of Foreign Capital

21.2 Government policy towards foreign Capital

21.3 The Janata Party and Foreign collaboration

21.4 Foreign direct Investment

21.5 Factors of FDI

21.6 Factors that discourage FDI

21.7 Summary

21.8 Key Words

21.9 Self Assessment Questions

21.10 Further Readings

21.0 Introduction

If a underdeveloped or developing country is interested in rapid economic development, it will have to import machinery, technical knowhow, spare parts and even raw materials. One method of paying for the imports is to step up exports. This is possible, if the Government is prepared to curtail consumption drastically and export more, simultaneously curtailing import of consumption goods. Russia, China, and others had adopted this method after the establishment of communist governments in these counties. As this involves a lot of sacrifice, it can be adopted only by a Government which is committed to such a policy. The second alternative of getting foreign technology and equipment is to depend upon foreign assistance in some form or the other. Most countries of the world which embarked on the road to economic development had to depend on foreign capital to some extent. The degree of dependence, however, varied with the extent to which domestic resources could be mobilized, the state of the domestic economy in respect of technical progress, the attitude of the respective governments, etc. But the fact cannot be denied that foreign capital contributed in many ways to the process of economic growth and industrialization. The need for foreign capital for a developing country like India can arise on account of the following reasons:-

(a) Domestic capital is inadequate for purposes of economic growth and it is necessary to invite foreign capital.

(b) For want of experience, domestic capital and entrepreneurship may not flow into certain

lines of production. Foreign capital can show the way for domestic capital.

(c) There may be potential savings in a developing economy like India but this may come forward only at a higher level of economic activity. It is therefore, necessary that foreign capital should help in speeding up economic activity in the initial phase of development.

(d) It may be difficult to mobilize domestic savings for the financing of projects that are badly needed for economic development. In the early stages of development, the capital market is itself underdeveloped. During the period in which the capital market is in the process of development, foreign capital is essential for the development of capital market itself.

(e) Foreign capital brings with it other scarce productive factors, such as technical know how, business experience and knowledge which are equally essential for economic development. It also create an overall environment for investment into various business activities and boosts the demand thereof.

21.1 Forms of Foreign Capital

The different forms of foreign investment are :

(a) Direct Foreign Investment. Foreign capital can enter India in the form of direct investments. In the past, companies had been formed in advanced countries with the specific purpose of operating in India. Sometimes companies of advanced countries start their subsidiary offices or branches and affiliates in India. Alternately, foreigners may subscribe to stocks and debentures of concerns in India. (This is known as portfolio investment.)

(b) Foreign Collaboration. In recent years there has been joint participation of foreign and domestic capital. India has been encouraging this form of import of foreign capital. There are three types of foreign collaborations—joint participation between private parties, between foreign firms and Indian Government and between foreign governments and Indian Government.

(c) Inter-Government Loans. Since the Second World War, there has been a growing tendency towards direct inter-government loans and grants. Marshall Aid was a massive system of American aid given to the war-devasted European countries to reconstruct their economies. Other advanced countries too provide grants and loans to Governments of less developed countries.

(d) Loans from International Institutions. Since 1946, the World Bank and its affiliates have been important suppliers of capital to India. International Monetary Fund (MF), Aid India Consortium, Asian Development Bank (ADB) and the World Bank have been the major sources of external assistance to India in recent years.

(e) External Commercial Borrowing (ECB). India has also been tapping export credit agencies like the US Exim Bank, the Japanese Exim Bank, ECGC of the UK etc. to obtain a major portion of the commercial borrowing from the capital market.

21.2 Government Policy towards Foreign Capital

With the advent of freedom, the pressure for economic development in India necessitated a realistic approach towards foreign capital. The late Prime Minister Nehru made a statement in April 1949 giving three important assurance to foreign investors :

(a) India would not make any discrimination between foreign and local undertakings ;

(b) Foreign exchange position permitting, reasonable facilities would be given to foreign investors for remittances of profits and repatriation of capital; and

(c) In case of nationalization of the undertaking, fair and equitable compensation would be paid to foreign investors.

The Industrial Policy Resolution of 1948 and 1956 as well Mr. Nehru's statement on foreign capital were the basis of the Government's policy on foreign capital till 1991 when the New Industrial Policy was announced.

The Indian Government recognized foreign capital as important supplement to domestic saving for the development of the country and for securing scientific, technical and industrial know-how. Although as a matter of policy the major ownership and effective control of undertaking was to be in Indian hands. The Government permitted, in a few cases, foreign capital to have majority control of an enterprise. The Government extended a number of tax concessions favouring foreign enterprises and streamlined industrial licensing procedures to avoid delays in approvals of foreign collaborations.

The Government of India decided in 1972 to permit wholly owned subsidiaries of foreign companies provided they undertake to export 100 per cent of their output. However, in case the new venture is to export less than 100 per cent of its output, the extent of permissible foreign capital participation would be subject to negotiation with the Government.

Since the new policy of the Government marked a reversal of its earlier policy of reducing the share of foreign equity holdings in subsidiaries of foreign companies operating in India, it gave rise to suspicion and anxiety. During February 1972, the Government developed a precise formula setting out the limits of participation by Indians in foreign subsidiary companies if they undertook plans of output-expansion. Thus companies with foreign holdings exceeding 75 per cent would have to raise 40 per cent of the estimated cost of expansion by issue of additional equity to Indians. The corresponding proportion for companies with 60-70 per cent foreign ownership would be 33.3 per cent and for those with 51-60 per cent foreign ownership would be 25 per cent.

Thus, the Government had to choose between pursuing a policy of Indianisation of foreign subsidiary companies to boost up exports through the agency of foreign firms. The latter course, which was chosen, was beset with grave dangers of proliferation of the influence of foreign concerns. While, liberalizing the conditions for foreign private investment the Government should in no case permit such subsidiary companies which are neither willing to make a firm commitment about export promotion nor are wiling to accept the scheme of gradual Indianisation. The principles of participation should be laid down in unambiguous terms.

21.3 The Janata Party and Foreign Collaborations

In its statement on Economic Policy (Novemeber, 1977) the Janata Party laid the following guidelines regarding foreign collaborations :

"The Janata Party will not go in for foreign collaboration in areas where adequate Indian skills and capital are available, whenever the need for foreign collaborations is felt in areas of high priority emphasis should be on purchasing outright technical know-how, technological skills and machinery."

"The provisions of FERA must be rigorously enforced in the sector of consumer goods industries. The foreign firms should be asked to carry forward the process of Indianisation. Their production capacities also should be frozen at the existing levels."

During two years of Janata rule, two major decisions regarding multinationals were taken and much advertised. Firstly, the Coca-Cola Company was asked to wind up its operations.

Secondly, the government asked International Business Machines (IBM) to dilute its equity to 40 per cent so as to conform to FERA guidelines. Since the IBM did not agree, it was also asked to fold up its operations.

Despite these two decisions, multinationals continued to operate in non-priority areas like tobacco, toiletries, beverages, etc. For instance, Hindustan Lever was permitted 51 per cent of foreign equity on the grounds of introduction of sophisticated technology in India. But the plea was unwarranted because the products of Hindustan Lever include vanaspati, shampoo, toothpaste, soap, detergent etc. India can certainly produce these products and induction of sophisticated technology is a lame excuse. Even against the guidelines of FERA, several foreign companies viz., Alkali Chemicals, Indian Explosives, Dunlop, Good Year, Asbestos Cement, Hindustan Pilkington were permitted to retain foreign equity at 51 per cent or more.

21.4 Foreign Direct Investment (FDI)

Foreign direct investment is one of the most important sources of foreign investment in developing counties like India. It is seen as a means to supplement domestic investment for achieving a higher level of growth and development. FDI is permitted under the following forms of investments.

1. Through financial collaborations/capital/equity participation.
2. Through joint ventures and technical collaborations.
3. Through capital markets (Euro Issues).
4. Through private placements or preferential allotment.

Capital participation/financial collaboration refers to the foreign partner's stake in the capital of the receiving country's companies while technical collaboration refers to such facilities provided by foreign partners as licensing, trademarks and patents (against which he gets lump sum fee or royalty payments for specified period); technical services etc.

From investors' point of view, the FDI inflows can be classified into the following three groups:

(a) Market seeking. The investors are attracted by the size of the local market, which depends on the income of the country and its growth rate.

(b) Lower cost. Investors are more cost-conscious. They are influenced by infrastructure facilities and labour costs.

(c) Location and other factors. Technological status of a country, brand name, goodwill enjoyed by the local firms, favourable location, openness of the economy, policies of the Government and intellectual property protection granted by the Government are some of the factors that attract investors to undertake investments.

Industrial Policy (1991) announced by the Congress Government accepted the fact that foreign investment is essential for modernization, technology up gradation and industrial development of India. The policy, therefore overbent to cajole foreign capital to come to India. The main points of the policy were :

(i) Approval would be given for direct foreign investment up to 51 per cent foreign equity in high priority industries. Clearance would be available if foreign equity covers the foreign exchange requirement for imported capital goods.

(ii) The payment of dividends would be monitored through the Reserve Bank of India so as to ensure that outflows on account of dividend payments are balanced by export earnings over a period of time.

(iii) To provide access to international markets, majority foreign equity holding up to 51% equity would be allowed for trading companies primarily engaged in export activities.

(iv) Automatic permission would be given for foreign technology agreements in high priority industries up to a lump sum payment of Rs. 1 crore, 5% royalty for domestic sales and 8% for exports, subject to a total payment of 5% of sales over a 10 year period from date of agreement or 7 years from commencement of production.

The Government of India liberalized its policy towards foreign investment in 1991 to permit automatic approval for foreign investment up to 51 per cent equity in 34 industries. The Foreign Investment Promotion Board (FIPB) was also set up to process applications in cases not covered by automatic approval.

During 1992-93 several additional measures were taken by the Government of India to encourage flow of foreign investment in India particularly in favour for direct foreign investment, portfolio investment, NRI investment and investment in Global Depository Receipts (GDR). These measures are given below :

(i) The dividend balancing condition earlier applicable to foreign investment up to 51 per cent equity is no longer applied except for consumer goods industries.

(ii) Existing companies with foreign equity can raise it to 51 per cent subject to certain Prescribed guidelines. Foreign direct investment has also been allowed in exploration, production and refining of oil and marketing of gas. Captive coal mines can also be owned and run by private investors in power.

(iii) NRIs and Overseas Corporate Bodies (OCBs) predominantly owned by them are also permitted to invest up to 100 per cent equity in high priority industries with repartriability of capital and income. NRI investment up to 100 per cent of equity is also allowed in export-houses, trading houses, star trading houses, hospitals, EOUs, sick industries, hotels, etc., Foreign citizens of Indian origin are now permitted to acquire house property without the permission of the RBI.

(iv) Disinvestment of equity by foreign investors no longer needs to be at prices determined by the Reserve Bank. It has been allowed at market rates on Stock Exchanges from September 15, 1992 with permission to repatriate the proceeds of such disinvestment.

(v) India has signed Multilateral Investment Guarantee Agency Protocol for the protection of foreign investors on April 13, 1992.

(vi) Provisions of the Foreign Exchange Regulation Act (FERA) have been liberalized through an Ordinance dated January 9, 1993 as a result of which companies with more than 40 per cent of foreign equity are also now treated at par with fully Indian owned companies. Later on FERA was replaced with FEMA.

(vii) Foreign companies have been allowed to use their trade marks on domestic sales from May 14, 1992.

(viii) The Government has allowed reputed Foreign Institutional Investors (FIIs) including pension funds, mutual funds, asset management companies, investment trusts etc. to invest in the Indian Capital Market subject to the condition that they register with the Securities and Exchange Board of India (SEBI) and obtain RBI approval. Scanty rainfall and outbreak of drought like conditions also affected FII perceptions regarding prospective returns from Indian markets. Down grading, by some international credit ating agencies, of Indian companies was also a contributory factor. FIIs inflows improved in the last quarter of 2001-02, because it was a time when the global economy was relatively more up beat, and global equity market sentiments more positive.

21.5 Factors that Attracts FDIs in India
The following factors can be held responsible for the flow of foreign direct investments in India :
1. India has a well developed network of banking and financial institutions and an organized capital market open to foreign institutional investors that attracts them to undertake investments.
2. India has vast potential of young entrepreneurs in the private sector. Indian skills and competence is used as a base for carrying out production activities and export to neighbour countries.
3. For the last few years there has been political stability in the country.
4. India enjoys good reputation among other countries as to honouring of its commitments about repayment obligations, remittance of dividends etc.
5. India has vast pool of unskilled labour available at cheap rates as compared to other countries, and vast natural resources that attract foreign investors.

21.6 Factors that Discourage FDIs
Factors that discourage foreign investors to undertake investments in India include:
(i) High rates of taxation.
(ii) Lack of infrastructure facilities.

(iii) Favouritism in the selection of investment.

(iv) Complicated legal framework of rules, regulations procedures for foreign direct investment into India.

(v) Lack of transparency.

21.7 Summary

Foreign direct investment (FDI) is when a company takes controlling ownership in a business entity in another country. With FDI, foreign companies are directly involved with day-to-day operations in the other country. This means they aren't just bringing money with them, but also knowledge, skills and technology. Generally, FDI takes place when an investor establishes foreign business operations or acquires foreign business assets, including establishing ownership or controlling interest in a foreign company.

21.8 Key words

Foreign Capital - Foreign capital is that part of investments in a country whose ownership belongs to the non-residents.

Foreign Direct Investment - A foreign direct investment (FDI) is a purchase of an interest in a company by a company or an investor located outside its borders

Foreign Collaboration- Foreign collaboration is an alliance incorporated to carry on the agreed task collectively with the participation (role) of resident and non-resident entities.

Foreign Investment - Foreign investment involves capital flows from one nation to another in exchange for significant ownership stakes in domestic companies or other assets.

21.9 Self-Assessment Questions
1. Explain the forms of foreign capital
2. Discuss the Government Policy towards Foreign Capital
3. Elaborate the factors that determine the Foreign Direct Investment
4. Explain the factors that discourage the foreign Direct Investment.

21.10 Further Readings
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