MANONMANIAM SUNDARANAR UNIVERSITY

DIRECTORATE OF DISTANCE

&

CONTINUING EDUCATION

BUSINESS ECONOMICS

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Unit - I

Introduction of Economics and Business Economics

Introduction of Economics

The term or word ‘Economics’ comes from the Ancient Greek *oikonomikos* (*oikos* means “households”; and, *Nemein* means “management”, “custom” or “law”). Thus, the term ‘Economics’ means ‘management of households’. The subject was earlier known as ‘Political Economy’, is renamed as ‘Economics’, in the late 19th century by Alfred Marshall.

What is Business Economics?

Business Economics is the integration of economic theory with business practice for the purpose of facilitating decision making and forward planning by management.

Business Economics, also referred to as Managerial Economics, generally refers to the integration of economic theory with business practice.

While the theories of Economics provide the tools, which explain various concepts such as demand, supply, costs, price, competition etc., Business Economics applies these tools in the process of business decision making.

Business Economics is playing an important role in our daily economic life and business practices. Organisations face many problems on a day to day basis. For example, organisations are always concerned with producing maximum output in the most economical way.

To solve problems of such nature, managers are required to apply various economic concepts and theories. The application of economic concepts, theories, and

tools in business decision making is called business economics or managerial economics.

Business Economics Definition

Definition of economics by different economists have a different point of view, but the essence is the same. The following are some popular definition of business economics.

Managerial economics is concerned with the application of economic concepts and economics to the problems of formulating rational decision making.

-Mansfield

Managerial economics is concerned with the application of economic principles and methodologies to the decision-making process within the firm or organization. It seeks to establish rules and principles to facilitate the attainment of the desired economic goals of management.

-Douglas

Managerial economics applies the principles and methods of economics to analyze problems faced by the management of a business, or other types of organizations and to help find solutions that advance the best interests of such organization.

-Davis and Chang

Characteristics of Business Economics

Characteristics of business economics are:

1. Microeconomics
2. Normative science
3. Pragmatic
4. Prescriptive
5. Uses macroeconomics
6. Management oriented

1. Microeconomics

Business economics is microeconomic in character. This is so because it studies the problems of an individual business unit. It does not study the problems of the entire economy.

2. Normative science

Managerial economics is a normative science. It is concerned with what management should do under particular circumstances. It determines the goals of the enterprise. Then it develops the ways to achieve these goals.

3. Pragmatic

Business economics is pragmatic. It concentrates on making economic theory more application-oriented. It tries to solve the managerial problems in their day-to-day functioning.

4. Prescriptive

Managerial economics is prescriptive rather than descriptive. It prescribes solutions to various business problems.

5. Uses macroeconomics

Macroeconomics is also useful to business economics. Macro-economics provides an intelligent understanding of the environment in which the business operates.

6. Management oriented

The main aim of managerial economics is to help the management in taking correct decisions and preparing plans and policies for the future.

Nature of Business Economics

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

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

Subject matter of economics

Economics has subject matter of its own . Economics tells how a man utilises his limited resources for the satisfaction of unlimited wants. Man has limited amount of time and money. He should spend time and money in such away that he derives maximum satisfaction. A man wants food, clothing and shelter. To get these things he must have money. For getting money he must make an effort. Effort leads to satisfaction. Thus, wants- efforts- satisfaction sums up the subject matter of economics initially in a primitive society where the connection between wants efforts and satisfaction is direct .

Divisions of Economics

The subject matter of economics can be explained under two approaches viz., Traditional approach and Modern approach.

Traditional Approach

It considered economics as a science of wealth and divided it into four divisions viz., consumption, production, exchange and distribution

1. Consumption: It means the use of wealth to satisfy human wants. It also means the destruction of utility or use of commodities and services to satisfy human wants.

2. Production: It is defined as the creation of utility. It involves the processes and methods employed in transformation of tangible inputs (raw materials, semi-finished goods, or subassemblies) and intangible inputs (ideas, information, know -how) into goods or services.

3. Exchange: It implies the transfer of goods from one person to the other. It may occur among individuals or countries. The exchange of goods leads to an increase in the welfare of the individuals through creation of higher utilities for goods and services.

4. Distribution: Distribution refers to sharing of wealth that is produced among the different factors of production .It refers to personal distribution and functional distribution of income. Personal distribution relates to the forces governing the distribution of income and wealth among the various individuals of a country. Functional distribution or factor share distribution explains the share of total income received by each factor of production viz., land, labour, capital and organisation.

Modern Approach :

This approach divides subject matter of economics into two divisions i.e., micro economics and macro economics. The terms „micro-„ and „macro-„ economics were first coined and used by Ragnar Frisch in 1933.

1. Micro-Economics or Price Theory:

The term micro-economics‟ is derived from the Greek word „micro‟, which means small or a millionth part. It is also known as price theory‟. It is an analysis of the behaviour of small decision-making unit, such as a firm, or an industry, or a consumer, etc. It studies only the employment in a firm or in an industry. It also studies the flow of economic resources or factors of production from the resource owners to business firms and the flow of goods and services from the business firms to households. It studies the composition of such flows and how the prices of goods and services in the flow are determined.

A noteworthy feature of micro-approach is that, while conducting economic

analysis on a micro basis, generally an assumption of „full employment" in the economy as a whole is made. On that assumption, the economic problem is mainly that of resource allocation or of theory of price.

Importance of Micro-Economics: Micro-economics occupies a very important place in the study of economic theory.

- Functioning of free enterprise economy: It explains the functioning of a free enterprise economy. It tells us how millions of consumers and producers in an economy take decisions about the allocation of productive resources among millions of goods and services.
- Distribution of goods and services: It also explains how through market mechanism goods and services produced in the economy are distributed.
- Determination of prices: It also explains the determination of the relative prices of various products and productive services.
- Efficiency in consumption and production: It explains the conditions of efficiency both in consumption and production. Formulation of economic policies: It helps in the formulation of economic policies calculated to promote efficiency in production and the welfare of the masses.

Limitations of Micro-Economics: Micro-economic analysis suffers from certain limitations:

- It does not give an idea of the functioning of the economy as a whole. It fails to analyse the aggregate employment level of the economy, aggregate demand, inflation, gross domestic product, etc.

- ❖ It assumes the existence of full employment‟ in the whole economy, which is practically impossible.

2. Macro-Economics or Theory of Income and Employment:

The term macro-economics‟ is derived from the Greek word „macro‟, which means “large”. Macro-economics is an analysis of aggregates and averages pertaing to the entire economy, such as national income, gross domestic product, total employment, total output, total consumption, aggregate demand, aggregate supply, etc. Macro-economics looks to the nation's total economic activity to determine economic policy and promote economic progress.

Importance of Macro-Economics:

- ❖ It is helpful in understanding the functioning of a complicated economic system. It also studies the functioning of global economy. With growth of globalisation and WTO regime, the study of macro-economics has become more important.
- ❖ It is very important in the formulation of useful economic policies for the nation to remove the problems of unemployment, inflation, rising prices and poverty.
- ❖ Through macro-economics, the national income can be estimated and regulated. The per capita income and the peoples living standard are also estimated through macroeconomic study.

Limitations of Macro-Economics:

- ❖ Individual is ignored altogether. For example, in macro-economics national saving is increased through increasing tax on consumption, which directly affects the consumer welfare.

- The macro-economic analysis overlooks individual differences. For instance, the general price level may be stable, but the prices of food grains may have gone up which ruin the poor. A steep rise in manufactured articles may conceal a calamitous 5 fall in agricultural prices, while the average prices were steady. The agriculturists may be ruined.

Scope of Business Economics:

As regards the scope of business economics, no uniformity of views exists among various authors. However, the following aspects are said to generally fall under business economics.

1. Demand Analysis and Forecasting
2. Cost and production Analysis.
3. Pricing Decisions, policies and practices.
4. Profit Management.
5. Capital Management.

These various aspects are also considered to be comprising the subject matter of business economic.

1. Demand Analysis and Forecasting :

A business firm is an economic organisation which transform productive resources into goods to be sold in the market. A major part of business decision making depends on accurate estimates of demand. A demand forecast can serve as a guide to management for maintaining and strengthening market position and enlarging profits. Demands analysis helps identify the various factors influencing the product demand and

thus provides guidelines for manipulating demand. Demand analysis and forecasting provided the essential basis for business planning and occupies a strategic place in managerial economic. The main topics covered are: Demand Determinants, Demand Distinctions and Demand Forecasting.

2. Cost and Production Analysis :

A study of economic costs, combined with the data drawn from the firm's accounting records, can yield significant cost estimates which are useful for management decisions. An element of cost uncertainty exists because all the factors determining costs are not known and controllable. Discovering economic costs and the ability to measure them are the necessary steps for more effective profit planning, cost control and sound pricing practices. Production analysis is narrower, in scope than cost analysis. Production analysis frequently proceeds in physical terms while cost analysis proceeds in monetary terms. The main topics covered under cost and production analysis are: Cost concepts and classification, Cost-output Relationships, Economics and Diseconomics of scale, Production function and Cost control.

3. Pricing Decisions, Policies and Practices :

Pricing is an important area of business economic. In fact, price is the genesis of a firms revenue and as such its success largely depends on how correctly the pricing decisions are taken. The important aspects dealt with under pricing include. Price Determination in Various Market Forms, Pricing Method, Differential Pricing, Product-line Pricing and Price Forecasting.

4. Profit Management :

Business firms are generally organised for purpose of making profits and in the long run profits earned are taken as an important measure of the firms success. If knowledge about the future were perfect, profit analysis would have been a very easy task. However, in a world of uncertainty, expectations are not always realised so that profit planning and measurement constitute a difficult area of business economic. The important aspects covered under this area are Nature and Measurement of profit, Profit policies and Technique of Profit Planning like Break-Even Analysis.

5. Capital Management :

Among the various types business problems, the most complex and troublesome for the business manager are those relating to a firm's capital investments. Relatively large sums are involved and the problems are so complex that their solution requires considerable time and labour. Often the decision involving capital management are taken by the top management. Briefly Capital management implies planning and control of capital expenditure. The main topics dealt with are: Cost of capital Rate of Return and Selection of Projects. The various aspects outlined above represent major uncertainties which a business firm has to reckon with viz., demand uncertainty, cost uncertainty, price uncertainty, profit uncertainty and capital uncertainty. We can therefore, conclude that the subject matter of business economic consists of applying economic principles and concepts to dea1 with various uncertainties faced by a business firm.

There are two categories of business issues to which economic theories can be directly applied, namely:

1. **Microeconomics applied to internal or operational issues**
2. **Macroeconomics applied to external or environmental issues**

Scope of microeconomics

Operational issues include all those issues that arise within the organisation and fall within the purview and control of the management.

The following Microeconomic theories deal with most of these issues.

- **Demand analysis and forecasting:** Demand analysis is a process of identifying potential consumers, the amount of goods they want to purchase, and the price they are willing to pay for it. This process is important for an organisation to analyse the demand for its products, and to produce accordingly and helping organisations in business planning and deciding on strategic issues.

- **Cost and benefit analysis (CBA):** By analysing costs, management can estimate costs required for running the organisation successfully. Cost analysis helps firms in determining hidden and uncontrollable costs and taking measures for effective cost control. Also, help in determine the return on investment (ROI).

- **Pricing decisions, policies, and practices:** Pricing is one of the key areas of business economics. It is a process of finding the value of a product or service that an organisation receives in exchange for its product/service. The profit of an organisation depends a great deal on its pricing strategies and policies. Business economics includes various pricing-related concepts, such as pricing methods,

product-line pricing, and price forecasting.

- **Profit maximisation:** Profit generation and maximisation is the main aim of every organisation (except for non-profit organisations). In order to maximise profit, organisations need to have complete knowledge about various economic concepts, such as profit policies and techniques, and break-even analysis.

- **Capital management:** Organisations often find it difficult to make decisions related to capital investment. These decisions require sound knowledge and expertise in various economic aspects. To make sound capital investment decisions, an organisation needs to determine various aspects, such as the cost of capital and rate of return.

- **Risk and Uncertainty Analysis:** Business generally operate under conditions of risk and uncertainty. Analysis of risks and uncertainties helps the business firm in arriving at efficient decisions and in formulating plans on the basis of past data, current information and future prediction.

Scope of macroeconomics

Environmental factors have significant influence upon the functioning and performance of the business.

The major scope of macroeconomics factors relate to:

- The type of economic system stage of **business cycle** is the general trends in national income, employment, prices, saving and investment.

- Government's economic policies like industrial policy, competition policy, monetary and scale policy, price policy, foreign trade policy and globalization policies.

- Working of financial sector and capital market

- Socio-economic organisations like trade unions, producer and consumer unions and cooperatives.

- Social and political environment: Business decisions cannot be taken without considering these present and future environmental factors.

- Business decisions cannot be taken without considering these present and future environmental factors. As the management of the firm has no control over these factors, it should ne-tune its policies to minimise their adverse effects

Significance of Business Economics :

The significance of business economics can be discussed as under :

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

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

3. Business economics helps in reaching a variety of business decisions in a complicated environment. Certain examples are :

(i) What products and services should be produced?

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

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

(iv) What are the best sizes and locations of new plants?

(v) When should equipment be replaced?

(vi) How should the available capital be allocated?

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

5. At the level of the firm. Where its operations are conducted though known focus functional areas, such as finance, marketing, personnel and production, business

economics serves as an integrating agent by coordinating the activities in these different areas.

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

It serves as an instrument in furthering the economic welfare of the society through socially oriented business decisions.

The usefulness of business economics lies in borrowing and adopting the toolkit from economic theory, incorporating relevant ideas from other disciplines to take better business decisions, serving as a catalytic agent in the process of decision making by different functional departments at the firm's level, and finally accomplishing a social purpose by orienting business decisions towards social obligations.

Importance of Business Economics

Business economics plays an important role in decision making in an organisation. Decision making is a process of selecting the best course of action from the available alternatives. **Role and responsibilities of managerial economics** are explained below.

The following points explain the **importance of business economics**:

1. Identifying, analyzing problems and finding solutions
2. Identify, analyze various internal & external business factors

3. Framing various policies
4. Predict the future
5. Establishing relationships between different economic factors
6. Business economics covers various important concepts, such as Demand and Supply analysis; Short run cost and Long run costs; and Law of Diminishing Marginal Utility. These concepts support managers in identifying and analysing problems and finding solutions.

7. It helps managers to identify and analyse various internal and external business factors and their impact on the functioning of the organisation.

8. Business economics helps managers in framing various policies, such as pricing policies and cost policies, on the basis of economic study and findings.

9. By studying various economic variables, such as cost production and business capital, organisations can predict the future.

10. Business economics helps in establishing relationships between different economic factors, such as income, profits, losses, and market structure. This helps in guiding managers in effective decision making and running the organisation.

Difference between Economics and Business Economics

ECONOMICS	BUSINESS ECONOMICS
Economics is a traditional subject that has prevailed from a long time.	Business economics is a modern concept and is still developing.
Economics mainly covers theoretical aspects.	Business economics covers practical aspects.
In economics, the problems of individuals and societies are studied.	In Business economics, the main area of study is the problems of organizations.
In economics, only economic factors are considered.	In business economic, both economic and non-economic factors are considered.
Both microeconomics and macroeconomics fall under the scope of economics.	Only microeconomics falls under the scope of business economics.
Economics has a wider scope and covers the economic issues of nations.	Business economics is a part of economics and is limited to the economic problems of organisations

ROLE AND RESPONSIBILITIES OF BUSINESS ECONOMISTS

Business economists are the persons who perform job in context to identify various problems that are uplifting a company, find out various reasons behind these problems, analyze their effects on the functioning of the company and finally suggest rational alternative and corrective measures to be taken by the management. Here in this Article Checkout ROLE AND RESPONSIBILITIES OF BUSINESS ECONOMISTS .The business economist is expected to play a positive & Constructive role in modern business set up. A business is essentially involved in the process of decision making as well as forward planning.

- Various companies face many problems such as labour problems, pricing problems, and other problems related to Government controls and restrictions. The business economics with his vast experience has to provide a quantitative base for decision making, policy making & forward planning in a business.

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

WHO IS BUSINESS ECONOMIST ?

Business Economist is the practitioner of the science of managerial economics.

- Companies employ business economists to guide them in making appropriate economic decisions – present and future (forecasting – short & long run)
- They astutely scan the competitive environment in which a firm functions and suggest suitable policies for solution of problems.

- In order to make the business more viable and profitable the business economist should have a detailed knowledge and information about the environment of a company.
- Business Economist always remains in touch with all the latest economic developments and environmental changes for informing the management. He has an efficient role in earning reasonable profits on invested capital as it supplies all relevant information which helps in making proper plans and strategies.
- Business economist has three important roles in every business organization: Demand analysis and forecasting, capital management and profit management.
- Hence, after discussing above aspects every organization needs to have a Business Economist who have all the knowledge and fundamentals of the economics to run a business smoothly and efficiently. This is it in Role and Responsibilities of Business Economists.

Unit – II

Consumption and Demand analysis

Meaning

Demand analysis is the research conducted by companies that aim at understanding customer demand for a certain product. Businesses generally use it to determine whether they can successfully enter the market and obtain the expected profit. During this process, the management decides on cost allocation, production, advertising, pricing, etc.

Why is demand analysis important?

A company's success or failure depends on the ability to identify and satisfy customers' needs. In today's market, every business needs to understand consumer behavior and hold inventory accordingly. Demand analysis brings many insights essential for the decision-making process. After conducting research, companies obtain knowledge crucial for sales forecasting, product pricing, costs on marketing and advertising, financial decisions, and production.

Let's take financial decisions, for example. The demand for a product affects the financial decisions of a specific company. Suppose there's a high demand for a firm's product, and it's constantly growing. In that case, it requires additional costs on the production of more products and quality improvement, advertising to reach more customers, and boosting the marketing team's capabilities.

The pricing policy of a company also depends on consumer demand. Understanding the trend of customer demand helps businesses decide whether to increase or decrease the price of their product.

If you aim to understand your leads and customers and succeed in your industry, demand analysis should be an integral part of your business. We've already revealed the importance of this process, so now let's take a look at its objectives.

Objectives of Demand Analysis

- Evaluating customers' response towards a product
- Formulating a pricing policy
- Sales forecasting
- Establishing a production policy

Any business can fail when they don't fulfill consumer demand. Hence, some of the decisions a company makes can be at risk. If your company aims to eliminate this possibility, you can use demand analysis to determine customer demand for a particular product. This process has several objectives.

- **Evaluating customers' response towards a product.** Gaining and monitoring customer feedback is vital if your goal is to see customers' reactions to your new product. This is a great way to find out whether consumers are satisfied with your goods or if there's still something you can improve.

- **Formulating a pricing policy.** You can set the prices after having analyzed the demand thoroughly. Understanding the trend of consumer demand allows you to quickly decide whether to increase or decrease the price for a particular product. Remember, companies can't set prices without understanding the inclinations of their target audience.

- **Sales forecasting.** It enables you to make informed business decisions and predict your company's performance. With a detailed analysis, you can estimate your future sales. Sales forecasting can give you insights and tips on managing your firm's cash flow, resources, and workforce. Besides the proper allocation of resources, it helps you predict sales revenue.

- **Establishing a production policy.** It enables you to define the gap between demand and supply. You can estimate the necessary number of raw materials to maintain the regular supply. Besides, your company can utilize resources to the maximum if your operations are based on forecasts.

Now that you know that demand analysis can bring a lot of valuable data for your business success, let's review how to perform demand analysis.

How to demand analysis

1. Identify the market

2. Assess the business cycle

3. Create a product that meets a particular niche

4. Define your advantage

5. Determine your competitors

Businesses use demand analysis that helps understand the customer's need for a product or service to define whether a company can smoothly enter the market and obtain the expected profits. There are five steps to consider.

1. **Identify the market.** The first thing you should do is identify the market you aim to target with your new goods. For this purpose, firms conduct market surveys to receive feedback from customers about the product and evaluate the level of customer satisfaction. If clients demonstrate their dissatisfaction with it, companies try to optimize a product to meet customer demand.

2. **Assess the business cycle.** Once a market is defined, you can proceed to estimate the stage of the business cycle, which has three stages. In the first, emerging stage, there's a high demand and a low supply of goods. The supply of products meets the market demand in the second, plateau stage, while in the third, declining stage, the demand for the products is lagging.

3. **Create a product that meets a particular niche.** You need to create a product that suits a particular niche within the market. Develop your products so that they can meet the needs of your consumers. Moreover, customers should be able to distinguish your goods from competitors' alternatives.

4. **Define your advantage.** Developing products that can resolve customers' problems allows you to create a sense of usefulness and increase demand. Let's

take iPods or iPhones, for example. These products increased the demand by entering the personal electronics market because customers perceived them as valuable.

5. **Determine your competitors.** Define the number of your competitors and their market share. It depends on the stage of the business cycle you're in at a particular moment. For example, in the emerging stage, you'll have fewer competitors, which will allow you to obtain a higher profit margin.

To sum it up, demand analysis is an essential step before making any business decisions. Companies should understand consumer behavior that defines the demand for a specific product within the market.

Every business can fail when demand isn't met. Hence, some of the decisions a company makes can be at risk. To decrease these risks, businesses can use demand analysis to determine the demand of customers for a particular product. This process has several objectives.

- **Evaluating a customer's response towards a product.** The analysis is very necessary if you want to see customers' reactions to your new product. This is the way to find out whether consumers are satisfied with your goods or there's still something you can improve.

- **Formulating pricing policy.** You can set the prices based on the demand. Understanding the trend of consumer demand allows you to easily decide whether to increase or decrease the price for a particular product. Remember,

companies can’t set prices without understanding the demand of their target audience.

- **Sales forecasting.** It enables you to make informed business decisions and predict your company’s performance. With an analysis, you can estimate your future sales. Sales forecasting gives you insight into how to manage your firm’s cash flow, resources, and workforce. Besides the right allocation of resources, it helps you predict sales revenue.

- **Establishing production policy.** It enables you to define the gap between demand and supply. You can estimate the necessary number of raw materials to maintain the regular supply. Also, your company can utilize resources to the maximum if operations are based on forecasts.

Now that you know that demand analysis can bring a lot of useful information necessary for the success of your business, let’s review several steps to do demand analysis.

Law of Demand

Among the many causal factors affecting demand of Goods and services, its price is most significant factor and the price- quantity relationship called as the Law of Demand is stated as follows:

"The greater the amount to be sold, the smaller must be the price at which it is offered in order that it may find purchasers, or in other words, the amount demanded increases with a fall in price and diminishes with a rise in price" (Alfred Marshall).

In simple words other things being equal, quantity demanded will be more at a lower price than at higher price. The law assumes that income, taste, fashion, prices of related goods, etc. remain the same in a given period. The law indicates the inverse relation between the price of a commodity and its quantity demanded in the market. However, it should be remembered that the law is only an indicative and not a quantitative statement. This means that it is not necessary that such variation in demand be proportionate to the change in price.

Definitions

Some major definitions of the Law of Demand are as follows:

"Law of Demand states that people will buy more at lower prices and buy less at higher prices, if other things remaining the same."- ***Prof. Samuelson.***

The Law of Demand states that amount demanded increases with a fall in price and diminishes when price increases." - ***Prof. Marshall***

"According to the law of demand, the quantity demanded varies inversely with price." –***Ferguson***

Marshall:-*"The greater the amount to be sold the smaller must be the price"*

Benham:-*"Usually a larger quantity of commodity will demanded at lower price that a higher price"*

Assumptions of Law of Demand

The law of demand follows the **assumption of ceteris paribus**, which means that the **other factors remain unchanged** or constant.

As mentioned earlier, the demand for a commodity or service not only depends on its price but also on several other factors such as price of related goods, income, and consumer tastes and preferences.

In the law of demand, other factors are assumed to remain constant while only the price of the commodity changes.

Following are the assumptions of law of demand:

1. No expectation of future price changes or shortages
2. No change in consumer's preferences
3. No change in the price of related goods
4. No change in consumer's income
5. No change in size, age composition and sex ratio of the population
6. No change in the range of goods available to the consumers
7. No change in government policy

1. No expectation of future price changes or shortages

The law requires that the given price change for the commodity is a normal one and has no speculative consideration. That is to say, the buyers do not expect any shortages in the supply of the commodity in the market and consequent future changes in the prices. The given price change is assumed to be final at a time.

2. No change in consumer's preferences

The consumer's taste, habits and preferences should remain constant. 4. No change in the fashion: If the commodity concerned goes out the fashion the buyer may not buy more of it even at a substantial price is reduced.

3. No change in the price of related goods

Prices of other goods like substitutes and supportive, i.e., complementary or jointly demanded products remain unchanged. If the prices of other related goods change, the consumer's preferences would change which may invalidate the law of demand.

4. No change in consumer's income

Throughout the operation of the law, the consumer's income should remain the same. If the level of a buyer's income changes, he may buy more even at a higher price, invalidating the law of demand.

5. No change in size, age composition and sex ratio of the population

For the operation of the law in respect of total market demand, it is essential that the number of buyers and their preferences should remain constant. This necessitates that the size of population as well as the age structure and sex ratio of the population should remain the same throughout the operation of the law.

Otherwise, if the population changes, there will be additional buyers in the market, so the total market demand may not contract with a rise in price.

6. No change in the range of goods available to the consumers

This implies that there is no innovation and arrival of new varieties of product in the market which may distort consumer's preferences.

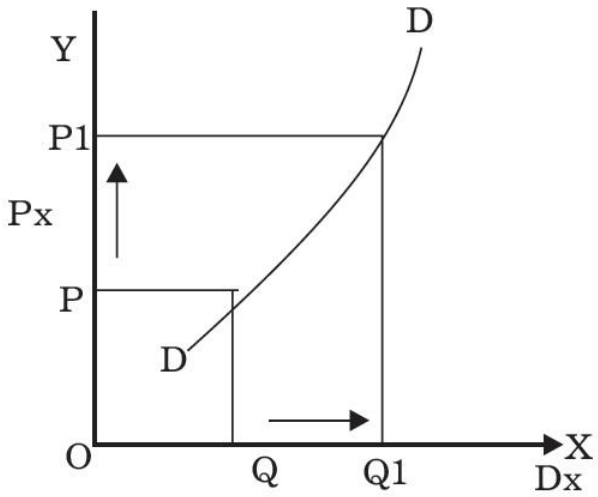
7. No change in government policy

The level of taxation and fiscal policy of the government remains the same throughout the operation of the law. Otherwise, changes in income-tax, for instance, may cause changes in consumer's income or commodity taxes and may lead to distortion in consumer's preferences

The law of demand can be understood with the help of certain concepts, such as **demand schedule**, **demand curve**, and demand function.

Exceptions to law of demand

Generally, the amount demanded of good increases with a decrease in price of the good and vice versa. In some cases, however, this may not be true. Such situations are explained below.



1. **Giffen goods:** these are those inferior goods on which the consumer spends a large part of his income and the demand for which falls with a fall in their price. The demand curve for these has a positive slope. The consumers of such goods are mostly the poor. a rise in their price drains their resources and the poor have to shift their consumption from the more expensive goods to the giffen goods, while a fall in the price would spare the household some money for more expensive goods. which still remain cheaper. These goods have no closely related substitutes; hence income effect is higher than substitution effect.

2. Commodities which are used as status symbols: Some expensive commodities like diamonds, air conditioned cars, etc., are used as status symbols to display one's wealth. The more expensive these commodities become, the higher their value as a status symbol and hence, the greater the demand for them. The amount demanded of these commodities increase with an increase in their price and decrease with a decrease in their price. Also known as a Veblen good. (In economics, Veblen goods are a group of commodities for which people's preference for buying them increases as their price

increases, as greater price confers greater status, instead of decreasing according to the law of demand.)

3. Expectations regarding future prices: If the price of a commodity is rising and is expected to rise in future the demand for the commodity will increase.

4. Emergency: At times of war, famine etc. consumers have an abnormal behaviour. If they expect shortage in goods they would buy and hoard goods even at higher prices. In depression they will buy less at even low prices.

5. Quality-price relationship: some people assume that expensive goods are of a higher quality then the low priced goods. In this case more goods are demanded at higher prices.

Types of Demand

7 **Types of Demand in Economics** are:

1. Price Demand
2. Income Demand
3. Cross Demand
4. Individual demand and Market demand
5. Joint Demand
6. Composite Demand
7. Direct and Derived Demand

1. Price Demand

Price demand is a demand for different quantities of a product or service that consumers intend to purchase at a given price and time period assuming other factors, such as prices of the related goods, level of income of consumers, and consumer preferences, remain unchanged.

Price demand is inversely proportional to the price of a commodity or service. As the price of a commodity or service rises, its demand falls and vice versa.

Therefore, price demand indicates the functional relationship between the price of a commodity or service and the quantity demanded. It can be mathematically expressed as follows:

Therefore, price demand indicates the functional relationship between the price of a commodity or service and the quantity demanded. It can be mathematically expressed as follows:

D_A= f (P_A) where,

D_A = Demand for commodity A

f = Function

P_A =Price of commodity A

Income Demand

2. **Income demand**

Income demand is a demand for different quantities of a commodity or service that consumers intend to purchase at different levels of income assuming other factors remain the same.

Generally, the demand for a commodity or service increases with an increase in the level of income of individuals except for inferior goods. Therefore, demand and income are directly proportional to normal goods whereas demand and income are inversely proportional to inferior goods.

The relationship between demand and income can be mathematically expressed as follows:

D_A = f (Y_A), where,

D_A = Demand for commodity A

f = Function

Y_A = Income of consumer A

Cross Demand

3. **Cross demand**

Cross demand is refers to the demand for different quantities of a commodity or service whose demand depends not only on its own price but also the price of other related commodities or services.

For example, tea and coffee are considered to be the substitutes of each other. Thus, when the price of coffee increases, people switch to tea. Consequently, the demand for tea increases. Thus, it can be said that tea and coffee have cross demand.

Mathematically, this can be expressed as follows:

D_A = f (PB), where,

D_A = Demand for commodity A

f = Function

P_B = Price of commodity B

Individual demand and Market demand

4. **Individual demand and market demand**:

This is the classification of demand based on the number of consumers in the market. Individual demand refers to the quantity of a commodity or service demanded by an individual consumer at a given price at a given time period.

For example, the quantity of sugar that an individual or household purchases in a month is the individual or household demand. The individual demand of a product is influenced by the price of a product, the income of customers, and their tastes and preferences.

On the other hand, market demand is the aggregate of individual demands of all the consumers of a product over a period of time at a specific price while other factors are constant.

5. Joint Demand

Joint demand is the quantity demanded two or more commodities or services that are used jointly and are, thus demanded together.

For example, car and petrol, bread and butter, pen and refill, etc. are commodities that are used jointly and are demanded together.

6. Composite Demand

Composite demand is the demand for commodities or services that have multiple uses. For example, the demand for steel is a result of its use for various purposes like making utensils, car bodies, pipes, cans, etc.

For example, the demand for steel is a result of its use for various purposes like making utensils, car bodies, pipes, cans, etc. In the case of a commodity or service having composite demand, a change in price results in a large change in the demand. This is because the demand for the commodity or service would change across its various usages.

7. Direct and derived demand:

Direct demand is the demand for commodities or services meant for final consumption. This demand arises out of the natural desire of an individual to consume a particular product.

For example, the demand for food, shelter, clothes, and vehicles is direct demand as it arises out of the biological, physical, and other personal needs of consumers. On the other hand, derived demand refers to the demand for a product that arises due to the demand for other products.

For example, the demand for cotton to produce cotton fabrics is derived demand.

Characteristics of Law of Demand

The following are the main **characteristics of law of demand**:

1. Inverse Relationship
2. Price independent and Demand dependent variable
3. Other things being equal
4. Qualitative statement
5. Concerned with certain period of time

1. Inverse Relationship

According to this law there is an inverse relationship between the quantity demanded and the price of a commodity. If the price of a commodity increases the quantity demanded decreases and if the price decreases the quantity demanded increases.

2. Price independent and Demand dependent variable

Price of a commodity is an independent variable. The law of demand explains the change in demand of a commodity due to change in its price. In mathematical terms price is an independent variable and demand is a dependent variable.

3. Other things being equal

This law holds good only when the other things remain the same. This 'other things remaining the same' is called the assumptions of the law of demand.

4. Qualitative statement

The law of demand is a qualitative statement which tells us that a fall in the price of a commodity will lead to an increase in the quantity demanded and a rise in price will lead to a fall in the quantity demanded. But it does not tell us how much change in price will bring how much change in quantity demanded.

5. Concerned with certain period of time

The law of demand is related with a particular period of time, for example weekly, monthly, annually etc.

Determinants of Demand

Determinants of demand are the factors that influence the decision of consumers to purchase a commodity or service.

1. **Price of a commodity**: The price of a commodity or service is generally inversely proportional to the quantity demanded while other factors are constant.

2. **Price of related goods**: The demand for a good or service not only depends on its own price but also on the price of related goods.

3. **Income of consumers**: The level of income of individuals determines their purchasing power.

4. **Tastes and preferences of consumers**: The demand for commodity changes with changes in the tastes and preferences of consumers

5. **Consumers expectations**: Demand for commodities also depends on the consumers' expectations regarding the future price of a commodity, availability of the commodity, changes in income.

6. **Credit policy**: The credit policy of suppliers or banks also affects the demand for a commodity.

7. **Size and composition of the population**: An increase in the size of a population increases the demand for commodities as the number of consumers would increase.

8. **Income distribution**: Unequal distribution of income results in differences in the income status of different individuals in a nation.

9. **Climatic factors**: The demand for commodities depends on the climatic conditions of a region such as cold, hot, humid, and dry.

10. **Government policy**: Government policies have direct impact on the demand for various commodities.

Importance of Demand

Demand is considered the basis of the entire process of economic development, hence demand plays an important role in the economic, social and political fields.

The importance of demand are:

1. Importance in Consumption
2. Advantageous to producers
3. Importance in Exchange
4. Importance in Distribution
5. Importance in Public Finance
6. Importance of Law of Demand and Elasticity of Demand
7. Importance in Religion, Culture and Politics

1. Importance in Consumption

Demand implies the schedule of quantities to be purchased over a specific period of time at various prices. A consumer determines the quantity of various commodities to be consumed on the basis of his demand.

2. Advantageous to producers

Producers maximize the profit by determining the nature, variety, quantity and cost of production on the basis of demand of various commodities and controlling the supply at an appropriate time.

3. Importance in Exchange

Quantity demanded is the purchase of a commodity in certain quantity at a certain price, therefore it is exchanged. This means that production, purchase and sale of a particular commodity of a particular quality and quantity takes place in demand and it is the process of exchange.

4. Importance in Distribution

Aggregate social production is determined on the basis of social demand. Production scale is increased with an increase in demand. Resources from various sources are procured to fulfill this increased demand. The share in the national product of a factor of production depends upon its demand.

5. Importance in Public Finance

Maximization of social welfare is the prime objective of the process of public finance. Sources of public revenue (inflows) and items of public expenditure (outflows) are determined to achieve this objective.

6. Importance of Law of Demand and Elasticity of Demand

The Law of Demand and Elasticity of demand is the most important concept in economics.

7. Importance in Religion, Culture and Politics

Demand of various commodities in society at various points of time is also very important from the religious, cultural and political points of view. Efforts are made to fulfill the demand of various commodities that arises at the time of various social or religious festivals.

N

Concept of Elasticity

Elasticity is a measure of a variable's sensitivity to a change in another variable, most commonly this sensitivity is the change in quantity demanded relative to changes in other factors, such as price. In business and economics, price elasticity refers to the degree to which individuals, consumers, or producers change their demand or the amount supplied in response to price or income changes. It is predominantly used to assess the change in consumer demand as a result of a change in a good or service's price.

Types of Elasticity

Elasticity of Demand

The quantity demanded of a good or service depends on multiple factors, such as price, income, and preference. Whenever there is a change in these variables, it causes a change in the quantity demanded of the good or service.

Price elasticity of demand is an economic measure of the sensitivity of demand relative to a change in price. The measure of the change in the quantity demanded due to the change in the price of a good or service is known as price elasticity of demand.

Income Elasticity

Income elasticity of demand refers to the sensitivity of the quantity demanded for a certain good to a change in real income of consumers who buy this good, keeping all other things constant. The formula for calculating income elasticity of demand is the percent change in quantity demanded divided by the percent change in income. With

income elasticity of demand, you can tell if a particular good represents a necessity or a luxury.

Cross Elasticity

The cross elasticity of demand is an economic concept that measures the responsiveness in the quantity demanded of one good when the price for another good changes. Also called cross-price elasticity of demand, this measurement is calculated by taking the percentage change in the quantity demanded of one good and dividing it by the percentage change in the price of the other good.

Price Elasticity of Supply

Price elasticity of supply measures the responsiveness to the supply of a good or service after a change in its market price. According to basic economic theory, the supply of a good will increase when its price rises. Conversely, the supply of a good will decrease when its price decreases.

Methods of Measuring Price Elasticity of Demand

Basically, there are four ways by which we can calculate the price elasticity of demand, and these are:

- Percentage method
- Total outlay method
- Point method
- Arc method

Percentage Method- Price Elasticity Demand

The Percentage method is one of the widely used methods for calculating demand price elasticities, where price elasticity is calculated in terms of the rate of the percentage change in the quantity requested to the percentage change in price.

For example, when the price of a commodity was Rs 10 per unit, the market demand for that commodity was 50 units a day. When the price of the product dropped to Rs 8, demand increased to 60 units. The price elasticity of demand can here be evaluated as -

PED =%change in quantity demanded/ % change in price, where

In comparison to supply price elasticity, demand price elasticity is often a negative number since the quantity requested and the product share price are inversely related. This implies that the higher the price, the lower the demand, and the lower the price, the greater the product demand.

Total Outlay Method

Professor Alfred Marshall developed the total outlay method, also known as the overall cost method of calculating price demand elasticity. The price elasticity of demand can, according to this approach, be calculated by comparing the total expenditure on the commodity before and after the price adjustment.

We can get one of three results when comparing the expenditure. They are the

Request elasticity would be greater than the unity of (Ep > 1)

If total expenditure rises with a decrease in price and decreases with a rise in price, the value of the PED is greater than 1. Here, price rises, and overall spending or outlays shift in the opposite direction.

The elasticity of demand will be equal to unity (Ep = 1)

If, in response to a rise in the price of the commodity, the overall expenditure on the commodity remains unchanged, the value of the PED would be equal to 1.

The elasticity of demand will be less than unity (Ep < 1)

The value of PED would be less than 1 if total spending decreases with a decline in price and rises with a rise in price. Here, commodity prices and overall spending are going in the same direction.

When the information from the above table is plotted in the graph, we get a graph like the one shown below.

On the X-axis, gross outlay or cost is calculated in the graph while the price on the Y-axis is measured. The transfer from point A to point B demonstrates elastic demand in the figure, as we can see that overall spending has risen with price decreases.

As total expenditure has remained unchanged with the change in price, the shift from point B to point C demonstrates unitary elastic demand. Likewise, as overall expenditure, as well as price, has decreased, the shift from point C to point D indicates inelastic demand.

Price Elasticity on a Linear Demand Curve

If the demand curve is linear in nature, the PED is determined simply by applying the above expression, i.e.

$$\text{PED}=\frac{\text{Lower segment of the demand curve}}{\text{Upper segment of the demand curve}}$$

MN is a linear demand curve in the figure and P is the midpoint of the curve.

Therefore, at point P,

$$\text{PED}=\frac{\text{Lower segment of the demand curve}}{\text{Upper segment of the demand curve}}$$

Price Elasticity on a Non-linear Demand Curve

If the demand curve is non-linear or convex in nature, then at the point where the PED is to be determined, a tangent line is drawn. Then again, PED is measured as

PED=lower segment of the demand curveupper segment of the demand curve

$$\text{PED}=\frac{\text{Lower segment of the demand curve}}{\text{Upper segment of the demand curve}}$$

Unit – III

Production Analysis

Production Analysis

In the ordinary language, the term "production" means rising of crops or making of a physical goods in factories. For example, if you make ice cream, you will say that you have produced ice- cream (goods). But from the point of view of Economics, you have not produced any new thing in the form of ice-cream; rather, you have changed the form of milk, sugar, cream, etc, and thus, have created the utility. Marshall is right to say, "Man does not produce physical (material) goods; but when it is said that he produces material goods, in fact, he only creates the utility. Even the scientists also agree that "Matter can neither be created nor destroyed." Thus, in Economics, the word "production" is used to imply creation or increasing the utility of a good so that its value is increased.

Definitions

"Production may be defined as the creation of utilities. Anatol Murad

"Production is the process that creates utility in goods. A.H. Smith

"Production is the creation of value in a commodity."- Thomas

"Production is the creation of economic utility "- Ely

"Production means an increase in the value of a commodity."- Nicholson

"Production is any activity which adds to the value of a nation's supply of goods and services.” -M.J.UImer

"Production may be defined as the process by which inputs may be transformed into output" - Robert Awh

Difference between Consumption and Production

Generally, production and consumption are considered to be altogether contrary and different activities.

Consumption is the use of utility whereas production is creation of utility. In fact, their difference is not so fundamental. Both these are two different aspects of the same activity. For example, when a carpenter makes a chair, he performs an act of production by increasing the utility of log of wood. But at the same time, he has also consumed the log of wood by using its utility.

Thus, two aspects of the same activity are production and consumption. According to Prof. Mehta., *"When the utility of a good is used for the direct satisfaction of want, it is called consumption, and its use for the indirect satisfactions of want is called production.*"

Methods of Creation of Utility

Production or creation of utility can be made by the following methods:

1) **Form Utility:** If by changing the form of a good, capacity to satisfy wants is created in it, it is called the form utility. Changing of wheat in the form of biscuit, changing of wood into furniture are the examples of the form utility. Dalmia Biscuit Company or Godrej Steel Furniture Company or factories changing the raw materials into goods create the form utility.

2) **Place Utility:** Utility is also created by changing the place of goods. It is called place utility. Collecting of the sand from the river-bank and transporting it to the construction site or transporting the coal to different parts of the country from the coal-mines are the examples of place utility. A transporter, railways, shipping companies, and airways create place utility. So, the function of transporting companies is called production.

3) **Time Utility:** If by an act of storage of a good for some time its utility increases, it is called time utility. Storing oranges, apples and other fruits in the cold storages until their crop season is over and their prices increase, is the example of time utility. Thus the activities of traders, who make the stock of a commodity, can also be called production.

4) **Service Utility:** If the service of a man satisfies our want, it is called service utility. A professor's teaching in a class, a lawyer's pleading a case, a tailor's stitching a shirt, are the examples of the creation of service utility. Therefore, a professor, lawyer or a tailor are also the producers.

5) **Possession Utility:** If the change of possession of a good increases its utility, it is called the possession utility. The utility of a sewing machine is not so great for a dealer in sewing machines as it is for a tailor. The utility of the machine increases by this change of possession. It will be called possession utility. Since traders or retailers are the creators of this utility, their activity is also called production.

6) **Knowledge Utility:** When the utility of a good increase by increasing people's knowledge about that goods, it is called knowledge utility. For example, we come to know about the qualities of LG washing machine, Lux soap or Forhans tooth paste through advertisements. We make greater demand for these goods. Thus, advertisers also help production by creating knowledge utility.

Thus, in order to know whether a man is a producer or not, it is to ensure whether an increase in utility or value is made by the work done by that man or not. It is essential that the work-done by anyone must create or increase utility.

Factors of Production

You want to produce wheat. For the production of wheat, you require land, workers, tractor, tube well, seeds, pesticides, favourable climatic conditions and fertilizer, etc. All these are called the means of production or inputs. With the help of these, we get the output or production.

"The sources of services which enter into the process of production are called factors of production. The factors are broadly classified as land, labour, capital, organisation and enterprise .M.J. Ulmer

According to Dr. Marshall, *"In a sense, only nature and man are the two sources of production-"* Benham has rightly remarked, *"Factors of production are neither two nor four but millions."* But according to modem economists and for the sake of simplicity, there are four factors of production namely: (i) land (ii) labour (iii) capital (iv) organisation and enterprise. Modem economists call all these factors as Input or resources, as under;

1. **Land:** Land is that factor of production which is freely available from nature. In it, not only on the surface of soil is included, but also all other free gifts of the nature below the surface and above the surface are included; for example, forests, minerals, fertility of soil, water, etc. According to Marshall, "Land means *the material and the forces which nature gives freely for man's aid, in land and water, in air, light and heat."* Land is also called a natural resource.

2. **Labour:** Labour is a human factor of production. In it all those mental and physical activities of man are included which are performed in order to earn money. The services of a carpenter, black-smith, weaver, teacher, lawyer and doctor, etc., are called labour.

3. **Capital:** Capital is that man-made factor of production which is used for more production. Factors like machines, tools, raw materials, buildings, railways, factories, etc., are called capital. The saving of a man when invested to earn will also be called capital.

What is a Production Possibilities Curve

In business, a production possibility curve (PPC) is made to evaluate the performance of a manufacturing system when two commodities are manufactured

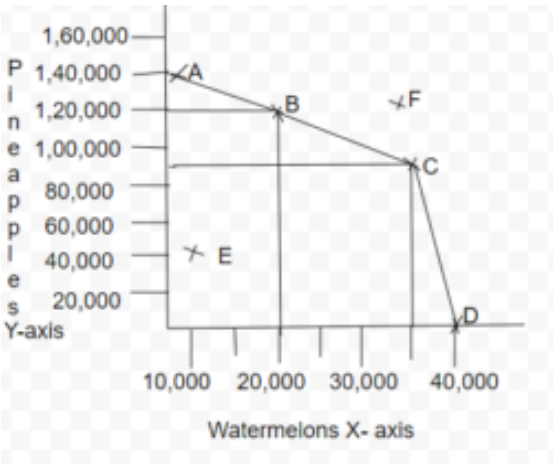
together. The management utilises this graph to plan the perfect proportion of goods to produce in order to reduce the wastage and costs while maximising profits.

The diagram or graph explains the units of goods that a company can produce if all the resources are utilised productively. Therefore, a single commodity's maximum manufacturing probability is arranged on the X-axis and that of the other commodity on the Y-axis. Here, the curve is represented to show the number of products that can be created with limited resources, while pausing the use of technology in between.

In the graph, the line sloping down also depicts the trade-off between producing commodity A and commodity B. When a firm diverts its resources to produce commodity B, the production of commodity A reduces.

A point above the curve indicates the unattainable with the available resources. A point below the curve means that the production is not utilising 100 percent of the business' resources.

Production Possibilities Curve Example



The production of 20,000 watermelons and 1,20,000 pineapples is shown on point B in the graph. If the production of watermelons needs to be more, then the production of pineapples should be less. On the graph, point C indicates that if the production of watermelons has to be 45,000, then the company can deliver only 85,000 pineapples. With this trade-off, the curve shows the idea of opportunity cost.

The production possibility curve also shows the choice of society between two different products.

How the Production Possibilities Curve Affects the Economy

The curve does not tell decision-makers how much of each good the economy should produce; it only tells them how much of each good they must give up if they are to produce more of the other good. It is up to them to decide where the sweet spot is.

In a market economy, the law of demand determines how much of each good to produce. In a command economy, planners decide the most efficient point on the curve. They are likely to consider how best to use labor so there is full employment.

The leaders must create more demand for either or both products. Only after that occurs can more resources be used to produce greater output.

Supply-side economists believe the curve can be shifted to the right by simply adding more resources. However, without demand, they will only succeed in creating underutilized resources. There can be a benefit in increasing the labor force, though. Once the unemployed are working, they will increase demand and shift the curve to the

right. For it to work, they must be paid enough to create the demand that shifts the curve outward. There must also be enough unemployed to make a difference. An economy in full employment can't add more workers, no matter how much corporate taxes are cut.

A decrease in resources can limit growth. If there is a shortage of one input, then more goods will not be produced, no matter how high the demand. In those situations, prices rise until demand falls to meet supply. It creates cost-push inflation.

- The production possibilities curve shows the possible combinations of production volume for two goods using fixed resources.
- The assumption is that production of one commodity decreases if that of the other one increases.
- Production points inside the curve show that an economy is not producing at its comparative advantage, and production outside the curve is not possible.
- The production possibilities curve displays the right proportional mix of goods to be produced.

Total Product, Average Product and Marginal Product

What is the production function in economics? Let us study the definitions of Total Product, Average Product and Marginal Product in simple economic terms along with the methods of calculation for each. We will also look at the law of variable proportions and the relationship between Marginal product and Total Product.

Production Function

The function that explains the relationship between physical inputs and physical output (final output) is called the production function. We normally denote the production function in the form:

$$Q = f(X_1, X_2)$$

where Q represents the final output and X_1 and X_2 are inputs or factors of production.

Total Product

In simple terms, we can define Total Product as the total volume or amount of final output produced by a firm using given inputs in a given period of time.

Marginal Product

The additional output produced as a result of employing an additional unit of the variable factor input is called the Marginal Product. Thus, we can say that marginal product is the addition to Total Product when an extra factor input is used.

$$\text{Marginal Product} = \text{Change in Output/ Change in Input}$$

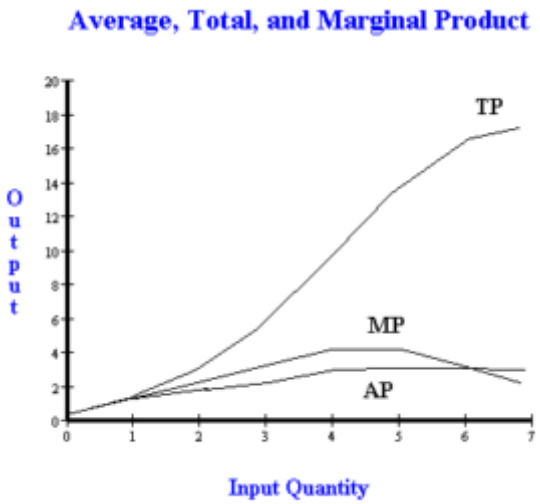
Thus, it can also be said that Total Product is the summation of Marginal products at different input levels.

$$\text{Total Product} = \Sigma \text{ Marginal Product}$$

Average Product

It is defined as the output per unit of factor inputs or the average of the total product per unit of input and can be calculated by dividing the Total Product by the inputs (variable factors).

Average Product = Total Product/ Units of Variable Factor Input



Source: FreeEconHelp

Relationship between Marginal Product and Total Product

The law of variable proportions is used to explain the relationship between Total Product and Marginal Product. It states that when only one variable factor input is allowed to increase and all other inputs are kept constant, the following can be observed:

- When the Marginal Product (MP) increases, the Total Product is also increasing at an increasing rate. This gives the Total product curve a

convex shape in the beginning as variable factor inputs increase. This continues to the point where the MP curve reaches its maximum.

- When the MP declines but remains positive, the Total Product is increasing but at a decreasing rate. Thisgiveends the Total product curve a concave shape after the point of inflexion. This continues until the Total product curve reaches its maximum.
- When the MP is declining and negative, the Total Product declines.
- When the MP becomes zero, Total Product reaches its maximum.

Relationship between Average Product and Marginal Product

There exists an interesting relationship between Average Product and Marginal Product. We can summarize it as under:

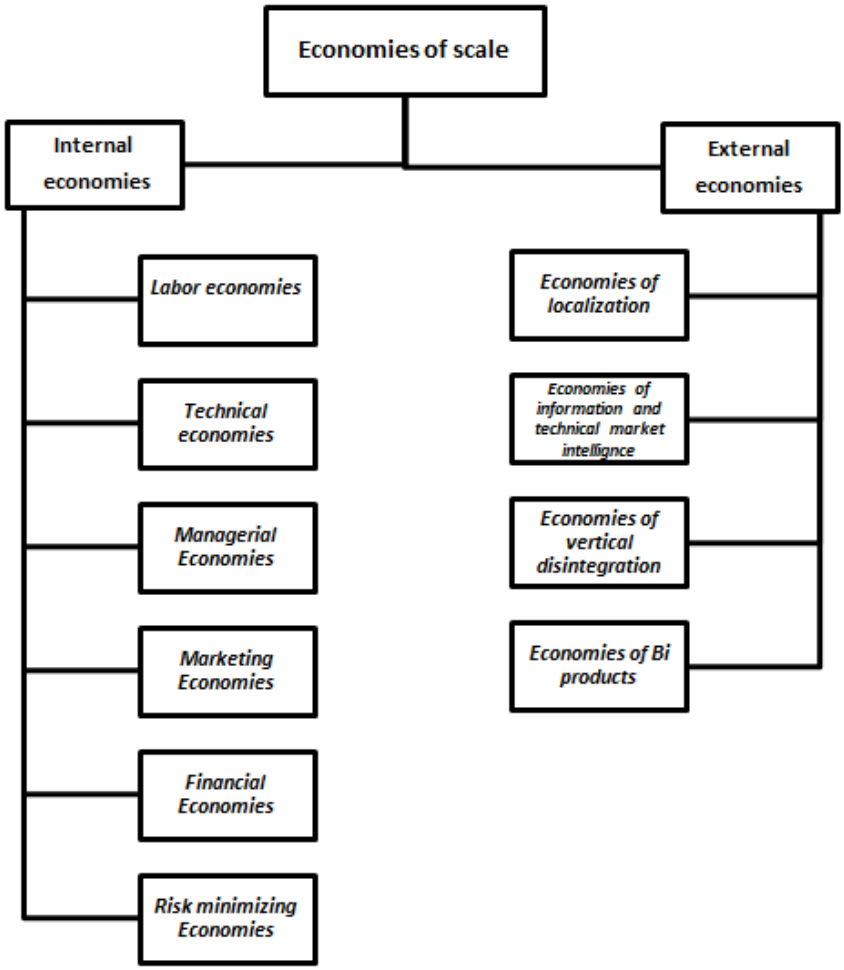
- When Average Product is rising, Marginal Product lies above Average Product.
- When Average Product is declining, Marginal Product lies below Average Product.
- At the maximum of Average Product, Marginal and Average Product equal each other.

Economies of scale

Economies of scale arise when the **cost per unit falls as output increases**. Economies of scale are the main advantage of increasing the scale of production and becoming 'big'.

When we produce in large quantities generally the production cost reduces. It is the general principle everybody knows. Reduction in the cost of production, when output (production) is increased is called as **economies of scale**. Large scale of production is economical than small scale of production. Increase in returns to scale (reduction of cost by producing more goods) are caused by real economies, which are classified under

Economies of scale is classified as



INTERNAL ECONOMIES:

This happens when better use is made in factors of production within the firm and by increasing output the factors in the internal economies are as follows.

1. Labour economies:

Increase in the scale of production of a firm results into many economies of labour, like specialization. Enlarged scale of production allows division of labour and specialization with the result of an improvement in the skills. *Specialisation means to perform just one task repeatedly which makes the labour highly efficient in its performance.* This adds to the productivity and efficiency of the labour. Adam Smith illustrated this point with an example. A labourer, all alone can make just 20 pins in a day. But when he divides the work of pin-making into different parts and each part is entrusted to a different labourer then 2400 pins are made in a day.

This is the marvel of division of labour which apart from increasing the skills of labour force, results in (i) Time Saving which is lost in shifting the worker from one job to another (ii) Promotion of New Inventions and (iii) Automation of Production Process. All these increase the productivity of labour and reduces costs.

2. Technical economies:

a) Economies of superior technique

If firm is big it can use high technology (automated machinery) and it can produce high quality goods and cost can be also reduced. Normally small firm cannot use high technology.

b) Economies of increased dimensions:

This is purely mechanical advantage

- A big ship is more economical then small ship for transportation
- Double Decker is more economical than single Decker for traveling.
- A big or small lorry needs single driver, it better to choose big lorry transportation to reduce cost rather than choosing two small Lorries With two drivers.

c) Economies of linked process:

Arranging production process in a correct sequence/order can lead to make Production continuous. Complete production process should be at one place only.

d) Economies of Power:

Uses of Large Machines are more economical than using small machines.

Eg: 10 small machines produce 10,000 units. Whereas one big machinery produces 10,000 units. Here choosing one big machinery is economical than choosing 10 small machines, because power consumed by 10 small machines is more than one big machinery.

e) Economies of continuation:

Production process should be continuous so that the usage of Raw material and other input can be utilized in properly and in efficient manner. Wastage can be reduced.

3. Managerial Economies:

As a firm grows, there is greater potential for managers to specialise in particular tasks (e.g. marketing, human resource management, finance). Specialist managers are likely to be more efficient as they possess a high level of expertise, experience and qualifications compared to one person in a smaller firm trying to perform all of these roles.

4. Marketing Economies:

If a firm purchase high volume of raw material from the suppliers it cost less, than purchasing small volumes. Employing purchasing expert in the firm to purchase required raw material for the production prevents wastage of excess raw material and it also reduces cost.

5. Financial Economies:

Many small businesses find it hard to obtain finance and when they do obtain it, the cost of the finance is often quite high. This is because small businesses are perceived as being riskier than larger businesses that have developed a good track record. Larger firms therefore find it easier to find potential lenders and to raise money at lower interest rates.

Big firm has good advantage in financial matters like

1. Money borrowing (Recognized firms can get money easily from money lenders)

2. Low rate of interest

3. Can easily raise capital (by issuing shares)

6. Risk minimizing Economies:

Producing different types of products by one company has good scope in market rather than producing single variety. Eg: HLL Company produces different types of soaps.

EXTERNAL ECONOMIES:

Definition

In the words of **Cairn cross,** *"External economies are those which are shared in by a number of firms or industries when the scale of production in* any *industry or group of industries increases. They are not monopolised by* a *single firm when it grows in size, but are conferred on it when some other firms grow larger.'*

External economies of scale occur when a firm benefits from lower unit costs as a result of the whole industry growing in size. The main types are:

These Economies related to external factors

1. Economies of localization: All firms should be localized to have economies. Different production department should be located at one place. This gives advantage in transportation and in timely labour utilization in production.

2. Economies of information and technical market intelligence: Industry enjoys research advantage, when Management can get whatever the information they want with in short time when firms allocated at one place.

3. Economies of vertical integration: Some industries rather than producing spare parts by themselves, they are purchasing from outside companies. This happens when company feels that buying of parts is cheaper than they produce by themselves.

(Make or Buy decision)

- E.g.: TATA Company purchased gear box for cars from kinetic Company
- E.g.: Mahindra cars purchasing engine from Renault Company.

4. Economies of Bi products: The firm using one raw material for manufacturing different other products can give more returns (profits) to the firm.

Eg: Amul India , Company producing different food products from milk.

Diseconomies of scale

Increasing the size of a business or production does not always result in lower costs per unit. Sometimes a business can get increase in cost of production or loss to the organisation, it is called as diseconomies of scale

Diseconomies of scale occur when a business grows so large that the costs per unit increase.

Diseconomies of scale occur because of several reasons; this situation is the result of the difficulties of managing a larger Workforce.

Internal diseconomies of scale

Internal diseconomies occur as the output of the firm is rising.

Interdependence:

Large firms with many and different departments have the problem with interdependency with each other. A machine failure in the packaging department may result in stopping the whole production line.

Coordination and communication:

As the business expands communicating between different departments and along the **chain of command** becomes more difficult. There are more layers in the hierarchy that can distort a message and wider **spans of control** for managers. This may result in workers having less clear instructions from management about what they are supposed to do when.

Mismanagement:

One of the main causes of diseconomies of scale or internal diseconomies is the difficulties of large-scale management. As a firm expands, difficulties of management go on multiplying. In a big firm, it becomes pretty difficult to co-ordinate the work of different sections. It becomes a tough problem to supervise the work spread all over. It adversely affects operational efficiency of the firm. In the words of **Mc Connell,** "*The*

main factors causing diseconomies of scale have to do with certain management problems which physically arise as a firm becomes a large-scale producer."

Industrial relations:

Because of the lack of contact between senior management and the work force, the workers may not feel commitment to work. Industrial disputes may arise and production may suffer.

Lack of motivation:

Workers can often feel more isolated and less appreciated in a larger business and so their loyalty and motivation may decrease. It is harder for managers to stay in day-to-day contact with workers and build up a good team environment and sense of belonging. The main result of poor employee motivation is fall in productivity levels and an increase in average labour costs per unit.

Lack of control: when there is a large number of workers it is easier to escape with not working very hard because it is more difficult for managers to notice shirking.

External dis-economies of scale

External factors beyond the control of a company increases its total costs, as output in the rest of the industry increases. The increase in costs can be associated with market prices increasing for some or all of the factors of production.

For example, as a business increases its output, more pressure might be put on its labor supplies, which would then raise the price of additional output. The availability of raw materials also might cause the cost of production to rise. A mining firm, for example, might first extract minerals that are easy to access. After it is necessary to mine deeper seams to produce more ore, the cost of additional output will rise.

As output increases in an industry, each of the factors of production, land, labour, capital and enterprise, become scarcer. As they become scarce (unavailability), their prices increase.

Unit – IV

Supply & Cost Analysis

What is Supply?

Supply is a term in economics that refers to the number of units of goods or services a supplier is willing and able to bring to the market for a specific price. The willingness and ability to avail products to the market are influenced by stock availability and the determiners driving the supply. A change in prices impacts the market equilibrium too. A price increase will result in more supplies, and a decrease will result in the opposite effect.

Understanding Supply

Ideally, in economics, consumers influence the supply of a product by indicating they need more units of a product, which drives prices higher. To the supplier, the market movements are a positive indication to increase the volume of supplies. However, the pattern may vary across products. At the point when the supply is equal to the demand, the price is said to be at equilibrium, i.e., there is no surplus supply or shortages.

However, as far as supply is at equilibrium, the consumer maximizes utility, and the suppliers enjoy optimal profits. Any more push of supplies in the market will disproportionately lead to suppliers incurring losses. Such an effect will reduce supply, which will tend to decrease prices until equilibrium is regained again.

The Law of Supply

This law in economics explains the reaction of the supplier when the prices in the market change. In its simplest explanation, when there is a shift in the price of a particular product or service, suppliers tend to maximize profits by increasing the quantity of products supplied.

All factors in the market must remain constant. On the contrary, when prices fall, they tend to move the supply on the opposite side until equilibrium is met.

Definition of 'Law of Supply'

Law of supply states that other factors remaining constant, price and quantity supplied of a good are directly related to each other. In other words, when the price paid by buyers for a good rises, then suppliers increase the supply of that good in the market.

What is the Law of Supply?

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

Factors affecting the supply curve

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

11. **Objectives of firms**. If firms are profit maximisers and collude with other firms, we may see a fall in supply as they try to maximise profits. However, if they switch to targetting sales or revenue maximisation, then we will see an increase in supply.

Types of Supply

- **Short-term supply** explains that the ability of a purchaser to buy goods is constrained by the available supplies. Buyers cannot purchase beyond the supplied products.
- **Long-term supply** explains the factor of time availability whenever the demand changes – meaning, the availability of time gives the supplier a leeway to adjust to a sudden shift in demand.
- **Joint supply** explains the consequential supply. For example, lamb production affects meat and wool supply. In case farmers reduce farming lambs, meat and wool supply will go down, too. Similarly, an increase will result in the opposite effect.
- **Market supply** explains the overall willingness and ability of all suppliers to supply the market a particular product on a day-to-day basis. For example, wheat suppliers A, B, and C may be willing to supply 5, 0, 6 kilos in the market at $1 per kilo for a total of 11 kilos. If prices rise to $2.50, the suppliers may increase to 10, 8, and 15 kilos, respectively. In total, the market supply amounts to 33 kilos.

- **Composite supply** is used to explain the supply of products that serves more than one purpose. A perfect illustration is the mining of crude oil. The production of oil affects the manufacturing of petrol, gas, kerosene, diesel, etc.

Elasticity of Supply

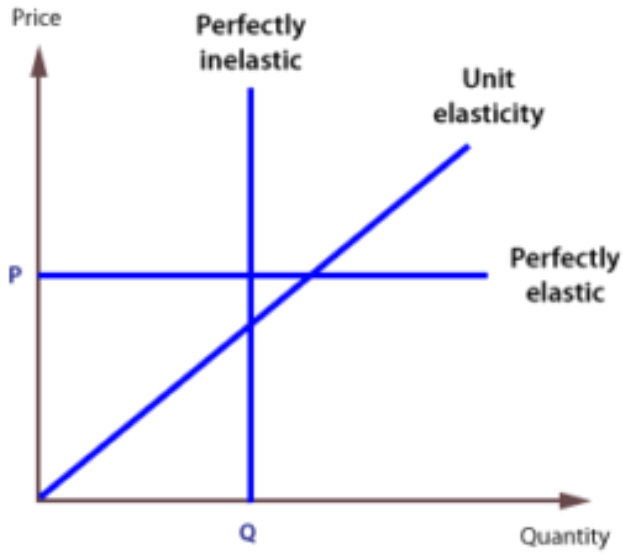
The elasticity of supply establishes a quantitative relationship between the supply of a commodity and it's price. Hence, we can express the numeral change in supply with the change in the price of a commodity using the concept of elasticity. Note that elasticity can also be calculated with respect to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

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

Elasticity from a Supply Curve

Along with the method mentioned above, there are two more ways to calculate the price elasticity of supply, both of which make use of the supply curve. We can either calculate the elasticity at a specific point on the supply curve, known as point elasticity or between two prices, known as arc-elasticity.

Types of Elasticity of Supply



1. Perfectly Inelastic Supply

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

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

2. Relatively Less-Elastic Supply

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

3. Relatively Greater-Elastic Supply

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

4. Unitary Elastic

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

5. Perfectly Elastic supply

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

Cost of Production:

Cost of production is an important factor in every company's manufacturing or production processes. Understanding how to calculate, report and control the cost of production is a crucial part of ensuring that a company's products are cost-effective and profitable. To understand the cost of production, you will need to know what it is and how it affects a company's success.

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

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

Direct costs and indirect costs

The cost of production can be divided into two distinct categories, called direct costs and indirect costs:

Direct costs

Direct costs are expenses that be traced directly to specific products, services, customers or other production objects. A company's accounting team records direct costs at every stage of the production processes and then adds them together to find the total cost of production for each product. Direct costs are often variable, which means they may fluctuate depending on different factors. For example, the price of the oil that the manufacturing machines need to function might be higher or lower depending on the year. Similarly, a change in the state's minimum wage might cause an entry-level employee's hourly wage to increase. Direct costs include items like:

- ✓ Raw materials
- ✓ Manufacturing supplies
- ✓ Labor wages
- ✓ Commissions

Indirect costs

Indirect costs are expenses that are associated with the production process but that cannot be traced directly to a product. Some indirect costs are impossible to factor into a specific product's cost of production and must be considered a part of production overhead instead. Production overhead includes expenses that facilitate the production of a product or service without directly affecting the manufacturing process. Finding ways to identify, report and control indirect production overhead costs is one of the most efficient ways to lower a company's cost of production. Examples of production overhead costs include:

- ✓ Office supplies
- ✓ Building utilities
- ✓ Supervisor or support staff salaries
- ✓ Rent
- ✓ Maintenance costs

What factors affect cost of production?

Several specific factors can greatly affect the cost of production for a given product or service. Here are several to consider:

- ❖ Demand
- ❖ Technology
- ❖ Exchange rate
- ❖ Cost of materials
- ❖ Tax rates
- ❖ Interest rates

Demand

As a company's success grows, the demand for certain products will also increase. To fill customers' orders, a company may need to buy more raw supplies, hire new laborers, expand the production facility or even open a second location. Ideally, a company can use the profits gained from new customers to offset the increased cost of production.

Technology

As technology continues to advance, some jobs which were traditionally accomplished by human laborers can now be done by automated machines. Many companies are choosing to use manufacturing robots instead of employees, thus lowering the costs associated with labor wages. Additionally, updating factory equipment, installing new computer systems or educating employees on the use of new digital interfaces can speed up the manufacturing process and also lower the cost of production.

Exchange rate

If a company imports materials from overseas, exchange rates can greatly affect the cost of production. If the exchange rate rises, the materials the company needs to create its products become cheaper. However, a high exchange rate can also cause exporting companies to become less competitive and the costs may stay the same or even increase.

Cost of materials

The costs of the raw materials which are necessary for manufacturing can vary greatly depending on the year, the economy and availability limitations. For example, the price of steel might rise or fall depending on the financial stability of the steel mill or on the costs of international transportation. The prices of oil and gasoline affect almost every industry due to their association with shipping and product delivery.

Tax rates

Taxes are an indirect production cost that can contribute significantly to a company's annual overhead. Taxes may be higher or lower during a certain year depending on changes in the local or federal government. If a company hires several new employees, an increase in national insurance, a tax on workers, can contribute to higher production costs.

Interest rates

Another indirect cost for companies is their loans. If a company borrowed funds from a bank or other entity to pay expenses, the loan's interest rates can rise or fall. A rise in interest rate will increase the amount due for each regular loan repayment. When calculating the cost of production, companies must allow for fluctuation in the interest rates to create accurate financial reports.

Types of Costs of Production

There are various types of costs of production that businesses may incur in the course of manufacturing a product or offering a service. They include the following:

1. Fixed costs

Fixed costs are expenses that do not change with the amount of output produced. This means that the costs remain unchanged even when there is zero production or when the business has reached its maximum production capacity. For example, a restaurant business must pay its monthly, quarterly, or yearly rent regardless of the number of

customers it serves. Other examples of fixed costs include salaries and equipment leases.

Fixed costs tend to be time-limited, and they are only fixed in relation to the production for a certain period. In the long term, the costs of producing a product are variable and will change from one period to another.

2. Variable costs

Variable costs are costs that change with the changes in the level of production. That is, they rise as the production volume increases and decrease as the production volume decreases. If the production volume is zero, then no variable costs are incurred. Examples of variable costs include sales commissions, utility costs, raw materials, and direct labor costs.

For example, in a clothing manufacturing facility, the variable costs may include raw materials used in the production process and direct labor costs. If the raw materials and direct labor costs incurred in the production of shirts are $9 per unit and the company produces 1000 units, then the total variable costs are $9,000.

3. Total cost

Total cost encompasses both variable and fixed costs. It takes into account all the costs incurred in the production process or when offering a service. For example, assume that a textile company incurs a production cost of $9 per shirt, and it produced 1,000 units during the last month. The company also pays a rent of $1,500 per month.

The total cost includes the variable cost of $9,000 ($9 x 1,000) and a fixed cost of $1,500 per month, bringing the total cost to $10,500.

4. Average cost

The average cost refers to the total cost of production divided by the number of units produced. It can also be obtained by summing the average variable costs and the average fixed costs. Management uses average costs to make decisions about pricing its products for maximum revenue or profit.

The goal of the company should be to minimize the average cost per unit so that it can increase the profit margin without increasing costs.

5. Marginal cost

Marginal cost is the cost of producing one additional unit of output. It shows the increase in total cost coming from the production of one more product unit. Since fixed costs remain constant regardless of any increase in output, marginal cost is mainly affected by changes in variable costs. The management of a company relies on marginal costing to make decisions on resource allocation, looking to allocate production resources in a way that is optimally profitable.

For example, if the company wants to increase production capacity, it will compare the marginal cost vis-à-vis the marginal revenue that will be realized by producing one more unit of output. Marginal costs vary with the volume of output being produced. They are affected by various factors, such as price discrimination, externalities, information asymmetry, and transaction costs.

How to Calculate the Cost

The first step when calculating the cost involved in making a product is to determine the fixed costs. The next step is to determine the variable costs incurred in the production process. Then, add the fixed costs and variable costs, and divide the total cost by the number of items produced to get the average cost per unit.

$$\text{Average Cost Per Unit} = \frac{\text{Fixed Costs + Variable Costs}}{\text{Total No. of Items Produced}}$$

For the company to make a profit, the selling price must be higher than the cost per unit. Setting a price that is below the cost per unit will result in losses. It is, therefore, critically important that the company be able to accurately assess all of its costs.

Concept of Cost:

The concept of cost is a key concept in Economics. It refers to the amount of payment made to acquire any goods and services. In a simpler way, the concept of cost is a financial valuation of resources, materials, undergone risks, time and utilities consumed to purchase goods and services.

It is a commonly accepted fact that physical inputs or resources are important for enhancing production. We, however, tend to miss out on the financial aspect of this rule. Some of the most important decisions pertaining to business often relate to the cost of production, instead of physical resources themselves. Hence, it is important for

producers to understand cost analysis. Let's understand the general concept of costs for that.

Cost Analysis

Definition:

In economics, the **Cost Analysis** refers to the measure of the cost – output relationship, i.e. the economists are concerned with determining the cost incurred in hiring the inputs and how well these can be re-arranged to increase the productivity (output) of the firm.

In other words, the cost analysis is concerned with determining money value of inputs (labor, raw material), called as the overall cost of production which helps in deciding the optimum level of production.

Concept of Costs in terms of Treatment

1. Accounting costs

Accounting costs are those for which the entrepreneur pays direct cash for procuring resources for production. These include costs of the price paid for raw materials and machines, wages paid to workers, electricity charges, the cost incurred in hiring or purchasing a building or plot, etc. Accounting costs are treated as expenses. Chartered accountants record them in financial statements. The accounting costs are used for taxation purposes and calculating the profit and loss of the firm. These are:

- Opportunity Cost
- Business Cost
- Full Cost
- Explicit Cost
- Implicit Cost
- Out-of-Pocket Cost
- Book Cost

2. Economic costs

There are certain costs that accounting costs disregard. These include money which the entrepreneur forgoes but would have earned had he invested his time, efforts and investments in other ventures. For example, the entrepreneur would have earned an income had he sold his services to others instead of working on his own business

Similarly, potential returns on the capital he employed in his business instead of giving it to others, the output generated by his resources which he could have used for others' benefits, etc. are other examples of economic costs.

Economic costs help the entrepreneur calculate supernormal profits, i.e. profits he would earn above the normal profits by investing in ventures other than his. These cost concepts are used by the economists to analyze the likely cost of production in the future. They are concerned with how the cost of production can be managed or how the input and output can be re-arranged such that the overall profitability of the firm gets improved. These costs are:

- Fixed Cost
- Variable Cost
- Total Cost
- Average Cost
- Marginal Cost
- Short-run Cost
- Long-Run Cost
- Incremental Cost
- Sunk Cost
- Historical Cost
- Replacement Cost
- Private Cost
- Social Cost

Concept of Costs in terms of Traceability

1. Direct costs

Direct costs are related to a specific process or product. They are also called traceable costs as we can directly trace them to a particular activity, product or process.

They can vary with changes in the activity or product. Examples of direct costs include manufacturing costs relating to production, customer acquisition costs pertaining to sales, etc.

2. Indirect costs

Indirect costs, or untraceable costs, are those which do not directly relate to a specific activity or component of the business. For example, an increase in charges of electricity or taxes payable on income. Although we cannot trace indirect costs, they are important because they affect overall profitability.

Concept of Costs in terms of the Purpose

1. Incremental costs

These costs are incurred when the business makes a policy decision. For example, change of product line, acquisition of new customers, upgrade of machinery to increase output are incremental costs.

2. Sunk costs

Suck costs are costs which the entrepreneur has already incurred and he cannot recover them again now. These include money spent on advertising, conducting research, and acquiring machinery.

Concept of Costs in terms of Variability

1. Fixed costs

Fixed costs are those which do not change with the volume of output. The business incurs them regardless of their level of production. Examples of these include payment of rent, taxes, interest on a loan, etc.

2. Variable costs

These costs will vary depending upon the output that the business generates. Less production will cost fewer expenses, and vice versa, the business will pay more when its production is greater. Expenses on the purchase of raw material and payment of wages are examples of variable costs.

Sunk Cost

What is a Sunk Cost?

A sunk cost, sometimes called a retrospective cost, refers to an investment already incurred that can't be recovered. Examples of sunk costs in business include marketing, research, new software installation or equipment, salaries and benefits, or facilities expenses. By comparison, opportunity costs are lost returns from resources that were invested elsewhere.

Economists suggest that, in theory, sunk costs are not relevant to future decision-making. In practice, however, sunk costs can and do significantly influence decisions about the future. This is largely because it's psychologically challenging to let go of

previously invested time, effort, or financial resources even if the outcome of those investments fails to meet expectations.

What is a Future Cost?

Future costs (also referred to as 'survivor costs') are the costs that arise during the life-years that would not have been lived without a life-extending intervention. These costs are typically classified into future related medical costs, future unrelated medical costs, and future non-medical costs.

What is the Difference between “Sunk Cost” and “Future Cost”?

Sunk Cost:

A sunk cost is an expenditure that has been incurred and cannot be recovered. All past or actual costs are regarded as sunk costs. However, sunk cost also includes an expenditure that has to be made in future under a binding contractual agreement. As the sunk cost cannot be recovered, it is ‘irrelevant’ for decision making.

Sunk cost does not vary with the changes in business activity contemplated for future by the management. The amortization of past expenses (e.g. depreciation) and expenditure on highly specialised equipment designed to order for a plant (that can neither be sold to any other firm nor can be used for any alternative purpose) are examples of sunk costs. Thus, sunk costs are unavoidable costs or uncontrollable costs. These does are often ignored by the economists but taken into account by the accountants.

Future Cost:

Future cost is based on forecasts. It is 'relevant' for most managerial decisions which are generally forward looking. Future costs involve forecasting for control of expenses, appraisal of capital expenditures, decisions on new projects as well as expansion programmes and profit-loss projections through proper costing under assumed cost conditions. Policy decisions on pricing also depend upon future costs.

Future costs may need expenditure on fixed or variable factors. Additions to costs emanating from a change in the nature and level of business activity (incremental costs) are future costs. As these costs are incurred when the business activity is changed (change in product line, addition or replacement of a machine, changes in distribution channels, etc.) and can be avoided by not bringing about the change, these incremental costs (differential costs) are also called avoidable costs or escapable costs or controllable costs or discretionary costs.

The Relation between the Average and Marginal Cost Curve

The relationship between the marginal cost and average cost is the same as that between any other marginal-average quantities. When marginal cost is less than average cost, average cost falls and when marginal cost is greater than average cost, average cost rises.

This marginal-average relationship is a matter of mathematical truism and can be easily understood by a simple example. Suppose that a cricket player's batting average is 50. If in his next innings he scores less than 50, say 45, then his average score will fall because his marginal (additional) score is less than his average score.

If instead of 45, he scores more than 50, say 55, in his next innings, then his average score will increase because now the marginal score is greater than his previous average score. Again, with his present average runs of 50, if he scores 50 also in his next innings, then his average score will remain the same because now the marginal score is just equal to the average score.

Likewise, suppose a producer is producing a certain number of units of a product and his average cost is Rs. 20. Now, if he produces one unit more and his average cost falls, it means that the additional unit must have cost him less than Rs. 20. On the other hand, if the production of the additional unit raises his average cast, then the marginal unit must have cost him more than Rs. 20.

And finally, if as a result of production of an additional unit, the average cost remains the same, then marginal unit must have cost him exactly Rs. 20, that is, marginal cost and average cost would be equal in this case.

The relationship between average and marginal cost can be easily remembered with the help of Fig. 19.4. It is illustrated in this figure that when marginal cost (MC) is above average cost (AC), the average cost rises, that is, the marginal cost (MC) pulls the average cost (AC) upwards.

On the other hand, if the marginal cost (MC) is below the average cost (AC); average cost falls, that is, the marginal cost pulls the average cost downwards. When marginal cost (MC) stands equal to the average cost (AC), the average cost remains the same, that is, the marginal cost pulls the average cost horizontally.

Now, take Fig. 19.5 where short-run average cost curve AC and marginal cost curve MC are drawn. As long as short-run marginal cost curve MC lies below short-run average cost curve, the average cost curve AC is falling. When marginal cost curve MC lies above the average cost curve AC, the latter is rising.

At the point of intersec-tion L where MC is equal to AC, AC is neither falling nor rising, that is, at point L, AC has just ceased to fall but has not yet begun to rise. It follows that point L, at which the MC curve crosses the AC curve to lie above the AC curve is the minimum point of the AC curve. Thus, marginal cost curve cuts the average cost curve at the latter's minimum point.

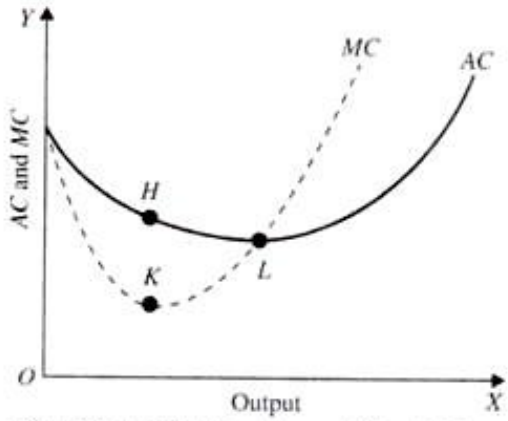


Fig. 19.5. *The Relation between AC and MC Curves*

It is important to note that we cannot generalise about the direction in which marginal cost is moving from the way average cost is changing, that is, when average cost is falling we cannot say that marginal cost will be falling too. When average cost is falling, what we can say definitely is only that the marginal cost will be below it but the marginal cost itself may be either rising or falling.

Likewise, when average cost is rising, we cannot deduce that marginal cost will be rising too. When average cost is rising, the marginal cost must be above it but the marginal cost itself may be either rising or falling. Consider Figure where up to the point K, marginal cost is falling as well as below the average cost.

As a result, the average cost is falling. But beyond point K and up to point L marginal cost curve lies below the average cost curve with the result that the average cost curve is falling. But it will seen that between K and L where the marginal cost is rising, the average cost is falling.

This is because though MC is rising between K and L, it is below AC. It is therefore clear that when the average cost 4 is falling, marginal cost may be falling or rising. This can also be easily illustrated by the example of batting average.

Suppose a cricket player's present batting average is 50. If in his next innings he scores less than 50, say 45, his batting average will fall. But his marginal score of 45, though less than the average score may itself have risen.

For instance, he might have scored 40 in his previous innings so that his present marginal score of 45 is greater than his previous marginal score. Thus one cannot deduce about marginal cost as to whether it will be falling or rising when average cost is falling or rising.

Fixed cost:

Meaning

Fixed cost is referred to as the cost that does not register a change with an increase or decrease in the quantity of goods produced by a firm. Fixed costs are those costs that a company should bear irrespective of the levels of production.

Fixed costs are less controllable in nature than the variable costs as they are not dependent on the production factors such as volume.

The different examples of fixed costs can be rent, salaries, and property taxes.

Variable cost:

Meaning

Variable cost is referred to as the type of cost that will show variations as per the changes in the levels of production. Depending on the volume of the production in a company, the variable cost increases or decreases.

The various examples of variable costs are the cost of raw materials that are used for production, sales commissions, labour cost, and more.

Difference between fixed cost and variable cost.

Fixed cost	Variable cost
Definition	
Fixed cost is referred to as the cost that does not register a change with an increase or decrease in the quantity of goods produced by a firm.	Variable cost is referred to as the type of cost that will show variations as per the changes in the levels of production.
Nature of cost	
It is time-dependent and changes after a certain period of time.	It is volume-dependent and changes based on the volume produced.
How are they incurred?	
Fixed costs are incurred irrespective of any units produced.	Variable costs are incurred as and when any units are produced.
Does it change with the number of units?	

Fixed cost decreases with an increase in the number of units produced.	Variable cost remains the same irrespective of the number of units produced.
Impact on profit	
Higher production results in reducing the costs and increasing the profits.	There is no impact on profit with the level of production.
Examples	
Rent, salaries, and property taxes	Labour cost, cost of raw materials, and sales commissions

Unit – V

PRICE AND OUTPUT DECISION

Meaning of Market

In our common language, we always use the word market. Where the commodity are brought and sold in economics, however, we have to understand the term market, as it has different meaning. In economic market refers to group of buyer and seller taking part in exchange of commodity. The buyer and seller may scattered within the country of abroad but their must be some contact.

Definition of Market

"Economists understand by the term market, not any particular market place in which things are bought and sold, but the whole of any region in which buyers and sellers are in such free intercourse with one another that the prices of the same goods tend to equality easily and quickly".

Modern Definition

The modern view regarding market is widely accepted. The modern definition of market is that "it (market) implies the whole area over which buyers and sellers are in such touch with each other, directly or through middlemen, that the price of the commodity in one part influences it in the other parts of it".

CLASSIFICATION OF MARKET

1. On the basis of area

a) Local market: Local market refers to a market in a particular village or locality. Generally perishable goods have local market.

b) Regional market: Regional market refers to a market, which covers a particular region. Generally bulky articles like bricks and s\ones have regional markets.

c) National market: It refers to a market which is spread over the entire country. Generally commodities like wheat, rice etc. have national market.

d) International market: When the market is spread over the globe it is said to be an international market. Generally valuable metals like gold, silver, etc., have an international, market.

2. On the basis of time

a) Very short period market: A very short period is one in which supply cannot be increased or decreased to adjust as per demand. Examples for very short period markets are vegetables, fruits, etc.

b) Short period: Short period market refers to a period of time in which the rate of production is variable.

c) Long period: Long period is a period of time in which the supply of the commodity can be varied according to the conditions of demand. Long period involves many years.

3. Classification on the basis of competition

a) Perfect market: A perfect market is where there is perfect competition.

b) Imperfect market: A market is imperfectly competitive if the action of one or more buyers and sellers have a perceptible influence on price.

MEANING OF PERFECT COMPETITION

A market is said to be perfect when there is a large number of buyers and sellers of the product. The products are homogeneous so that the consumers do not mind purchasing a commodity from M/s ABC or M/s XYZ. It implies that the products of the various firms are perfect substitutes or they are identical. There is free entry and exit of the firms. Both the buyers and the sellers have full knowledge of the market conditions. Any buyer can purchase from any seller, and conversely. Price tends to be uniform all over the market Competitive firms may get abnormal profits and suffer loss in the short-run. However, in the long-run, they have to be contented with normal profits only. Only the efficient firms can exist in a perfect market.

From the above mentioned features it should be clear that perfect markets do not exist in real life. It is a hypothetical situation. It is so because the assumptions on which the competitive model of market is based never hold good in the real world. In spite of these limitations, the theory of competitive market provides a useful tool to understand the nature of other markets. It should be noted that the existence of a single, uniform price in the market is the most important criterion of perfect competition. This uniform price is determined by the market forces of demand and supply. The individual firm has to accept the price fixed by the market.

Hence, the price line (or demand curve or average revenue curve) is perfectly elastic in nature. Though this price is determined by total demand and total supply, yet the business motive of all the firms under perfect competition is profit maximisation. Each firm seeks to maximise its profits and no other objective is pursued. To understand this market structure we need to clearly understand its features.

Perfect competition is a market structure in which there are a large number of producers (firms) producing a homogeneous product so that no individual firm can influence the price of a commodity.

FEATURES OF PERFECT COMPETITION

1. Large number of sellers: In perfect competition there is an existence of large number of sellers. The number of sellers is so large that each seller sells so little that none of them is in a position to influence the price in the market.

2. Large number of buyers: Similarly the number of buyers is also large. Each buyer buys so little that none of them is in a position to influence the price in the market. It is natural that, when there are millions of buyers in the market none of them can be strong enough to influence the price to his advantage.

3. Homogeneous Product: An important feature of perfect competitive market is that, the goods sold by the large number of sellers must be identical or homogenous in the eyes of the buyers. Here, homogeneity does not mean that goods are identical in all respects. They are perfect substitutes of each other. In other words, the price of one has great influence on the other. Thus, the product is homogeneous and no seller can charge a price even slightly above the ruling market price. In case the seller changes the price,

he will lose all his buyers. There are several firms operating in the market, no single firm is in position to exert any influence on the price.

4. Free entry and free exit for firms: In perfect competition there should be a complete freedom for firms to enter or exit the industry at their choice. Likewise, if some firms are incurring losses, they can exit from the industry. The firms that can supply at the ruling price enter the industry, while others which are inefficient and who cannot supply at the prevailing price are incurring losses. They can exit from the market.

5. Perfect knowledge of the market: In perfect competition there is an existence of perfect knowledge on part of the buyers and sellers about market conditions. In perfect competition there is no necessity of incurring any expenditure and advertisement due to perfect knowledge. The sellers too have perfect information about potential sales at various price-levels. In short, both the buyers and sellers have perfect knowledge of the price. At this 'price', total demand is equal to total supply and this price is known as 'market-clearing price'.

6. No transport cost: A perfectly competitive market assumes the non-existence of transport costs. The assumption is on the basis of a reasoning that the various firms are so close to each other that there are no transport costs.

7. Perfect Mobility of factors of production: The smooth functioning of perfect competition necessitates perfect mobility of factors of production. The factors of production should be free to move into any industry which they consider profitable for themselves. The existence of perfect mobility of factors is essential for fulfilling the first condition of perfect competition i.e. large number of sellers in the market.

8. No Government Interference: In perfect competition, it is necessary to have nonexistence of any artificial restrictions on the demand, supply, prices of commodities and factors of production in the market. There must be no governmental fixation of the prices of goods and factors of production. There must be no artificial controls on demand of goods through governmental rationing.

9. Single price: It is assumed that price is determined by interaction of market demand and supply forces. This equilibrium price is accepted by a large number of sellers and buyers.

10. No selling cost: As a large number of sellers sell homogeneous products at a given price, it rules out the possibility of advertisement and other sales promotion expenses.

The foregoing discussion of features of **perfect competition and pure competition** can be understood in its distinction form.

Perfect competition	Pure competition
1. Meaning: For the market to be perfectly competitive, the features are large number of buyers and sellers, homogeneous goods, free entry and exit, perfect knowledge of market, perfect mobility of factors, no government interference, no transport costs.	For a market to be purely competitive, following features are to be fulfilled: large numbers of buyers and sellers, homogeneous goods, free entry and exit of firms.

2. Known as: The term 'Perfect competition' is traditionally used by the British economists, while discussing the price theory.	The term 'Pure competition' is used by the American economists while discussing the price theory
3. Concept: Perfect competition is an ideal concept for the market structure. It is an imaginary concept.	Pure competition tries to substantiate the norm of perfect competition. It is a real concept.
4. Equilibrium: Any disequilibrium in the price can be adjusted faster due to perfect knowledge of perfect mobility of factors of production in perfect competition	Lack of perfection in the market makes the adjustments in disequilibrium of price a slower process.

MONOPOLY

Meaning:

The word monopoly is made up of two syllables ‘mono’ and 'poly'. Mono means single while 'poly' means selling. Thus, monopoly implies one single seller a product in the market. Infact, monopoly is understood as a market situation in which there is only one seller (or producer). He controls the entire supply of a single commodity. It is single commodity as the commodity has no close substitutes. In this way the literal meaning of 'monopoly’ is a single seller of a product in the market.

Absolute Monopoly:

In Economics, however, monopoly can be understood in different ways. It can be understood with the help of degree of competition present in the market. If in a

market there is one single seller of a product and no competition at all of any sort, such a situation is pure or perfect or absolute monopoly. In absolute monopoly the firm and industry are one i.e. there is no distinction between the firm and the industry. Any change in the price of those other commodities has no impact on the commodity of the monopolist. Pure monopoly is seen to exist in local public utility industries such as gas, electricity, water supply etc. In pure monopoly, the position of the seller is very powerful. Since there is no substitute for his product, he can fix a price to his liking. However, the reality is, no firm anywhere is so powerful as to sell a small output at exceeding high price. In short, pure monopoly is a myth. It has never existed anywhere. It is only a theoretical imagination of economists.

Limited Monopoly:

Thus, we come to a more realistic market situation i.e. limited or imperfect monopoly. It is a market situation in which there is a single seller of the product for which there are no close substitutes. In imperfect monopoly, the monopolist's position is weaker as compared to pure monopolist. The reason is that under pure monopoly we assume that, no substitute is available for his product. But, under limited monopoly, the monopolist has the possibility of some substitutes for his product, though they may not be very close or perfect substitutes. For example, an electric supply company is an illustration of imperfect competition as light can also be supplied by gas, kerosene, candles. Now, these are no close substitutes of electricity, at the same time same substitute is available. Thus, the average revenue curve slopes downwards. Higher the price he fixes, less is the output sold. If he lowers the price, he can sell greater output.

I. Features of Monopoly:

The outstanding features of monopoly are:

1. Single seller: The monopolist is the single producer in the market.

2. Firm and industry identical: The distinction between firm and industry is not there under monopoly market because, being the only seller, firm and industry are identical.

3. No close substitute: There are no close competitive substitutes for the product.

4. Price-maker: A monopolist is a price-maker and not a price-taker. In perfect competition, it is the ruling price which the seller accepts from the market i.e. the seller is a 'price-taker'. But, a monopolist is in a position to fix the price for the product. He can also vary the price from buyer to buyer, i.e. he can have price differentials.

5. Average Revenue or Demand Curve: A monopoly firm which is also identical to industry, faces a downward sloping demand curve for its product. In other words, it can sell more at lesser price and less at higher price.

6. No free entry: The fact that the monopolist is the single seller with no close substitutes, implies that, there are barriers may be legal, technical, economic or natural in nature that do not allow free entry of firms.

7. Control over output: In the absence of a close substitute for his product, a monopolist has a complete control over the market supply. The monopolist can restrict the supply of output in the market and fix the price high.

II. Types of Monopoly

The different types of barriers to the entry of firms and other factors in monopoly market give rise to the monopoly of different kinds.

1. Simple and Discriminating Monopoly: On the basis of the price policy adopted by the monopolist, it is simple monopoly and discriminating monopoly. Simple monopoly is when the firm charges a uniform price to all the buyers. Such a monopoly operates in a single market. Discriminating monopoly is, when the firm charges different prices to different buyers. E.g. Doctor charges less fees from poor and high fees from rich people.

2. Private Monopoly and Public Monopoly: On the nature of ownership; it is private and public monopolies. Private monopoly is when a private body controls a monopoly. Private monopolies, which are confined to the private sector in a mixed economy are usually profit-oriented. E.g. Tata, Birla, Reliance etc. Public monopoly is when production is solely owned, controlled and operated by the state. Such monopolies are generally confined to nationalised industries. Public monopolies are service-motivated and welfare-motivated. That is why they are also referred to as 'Social Monopolies'. E.g. The Industrial Policy Resolution (1991) in India has categorically stated that, certain areas like atomic energy, arms and ammunition etc. as sole monopolies of the Central Government.

3. Pure Monopoly and Imperfect Monopoly: On the degree of monopoly power, monopolies can be pure Monopoly and Imperfect Monopoly. Pure Monopoly is when a single seller solely controls supply of a commodity has absolutely no substitute to his product. It is an absolute monopoly. Pure monopoly is completely antithesis to

competition. Imperfect monopoly implies a limited degree of monopoly. The single seller in this case has some close substitute for his product. Imperfect monopoly is a reality, while pure monopoly is a myth.

4. Legal, Natural, Technological Monopolies: On basis of the source, the different kinds of monopolies are:

Legal monopoly: It arises due to legal provisions such as trade marks, copyrights etc. It is legal because the law does not allow the potential competitors to imitate the design or form of products which are registered under the given trademark, brand name etc. Eg. Postal service in India.

Natural monopoly: This type of monopoly arises due to endowment of resources by nature and natural advantages such as good location, climate conditions, availability of certain minerals or raw material, etc. The firm claiming the use of these resources first, is said to have natural monopoly. For example, Gulf countries have monopoly in oil, South Africa in diamonds, India in jute, etc.

Technological monopoly: This monopoly exists when certain technology is registered and cannot be imitated. Thus, the firm which has that technology becomes a monopoly which is referred as technological monopoly.

Joint Monopoly: Business combinations like trusts, cartels, syndicates etc. create joint monopolies i.e. when firms unite in a group and acquire joint monopolies in the market. E.g. Organisation of Petroleum Exporting Countries (OPEC).

Features / Characteristics of Monopolistic Competition

The main features are:

(i) Large number of sellers: Under monopolistic competition, there is a large number of firms selling closely related but not identical products in the market. We repeat the examples here Monopolistic competition may be found in retail trades, service industries like petrol stations dry-cleaning establishments etc. Each firm controls only an insignificant proportion of the total market output. Any action on its part will have little or no effect on other firms.

(ii) Product Differentiation: This is the second important feature of monopolistic competition. The large number of firms under monopolistic competition bring out differentiated products which are not perfect substitutes but relatively close substitutes to each other.

For instance, many firms in India produce cosmetics but the product of each differs from its rivals in one or more respect like different face powders Lakme, Revelon, Himalaya etc. Product differentiation can be brought about in a variety of ways as discussed below :

(a) Product differentiation can be through differences in the Quality of the material used through strength, workmanship etc.

(b) Product differentiation by offering to their customers supplementary services alongwith the sale of the product e.g. home delivery of goods, guarantee of repairs.

(c) Product differentiation can be through advertisement and publicity.

(d) Product differentiation can be brought about through differences in the location of premises, e.g. Clothes in the boutique and on the roadside store.

(iii) Free entry: Under monopolistic competition, there is no difficulty for a new firm to enter into an existing firm or to leave the industry. There is a large number of relatively smallsized firms also allow easy entry and exit from the industry. Since the production techniques are simple and capital required is less, it allows easy entry of new firms.

(iv) No Interdependence of firms: Under monopolistic competition, there is no interdependence of firms. The reasons for absence of interdependence are:

(a) There is a large number of firms operating under monopolistic competition.

(b) Each firm is of a small size. Its share in total market may not be more than 10 percent or even much less.

(c) Each firms sells a 'differentiated' product.

(v) Selling costs: A unique feature of monopolistic competition is selling costs. Since products are differentiated, sales propaganda becomes an integral part in marketing the goods. Expenditure (outlays) on sales promotion are termed as selling costs.

(vi) Revenue (Demand) and Cost Curves: The demand curve (Revenue curve) is neither perfectly elastic (as in perfect competition) nor rigidly inelastic (as in monopoly). Infact, the demand for the product of the firm under monopolistic competition is much more sensitive to even a small change in price. Thus, the demand curve will have less steepness than that of monopoly. The curve will have greater

elasticity and is downward - sloping. Monopolistic competition has two aspects – (a) price competition and (b) non-price competition. The firms compete with each other on the price issue. The firms also compete on non-price issues to expand their sale, in terms of product variation.

(vii) The Group: Prof. E.H. Chamberlin introduced the concept of group in place of traditional concept of industry in the theory of price. Industry means collection of firms producing a homogenous commodity. But, monopolistic competition is characterised by product differentiation. They produce similar but not identical goods. Hence, the concept of industry (firms with homogeneous goods) cannot be conceived in monopolistic competition. Therefore, Chamberlin introduced the concept of 'group'.

How do perfect competition differ from monopolistic competition?

Perfect Competition	**Monopolistic Competition**
Meaning : It is a form of a market situation in which there are a large number of sellers	It is a form of a market situation in which there are many sellers
Product: the sellers deal in homogenous product	the sellers deal in differentiated product
Firms/ industry: There are large number of firms in an industry	There are no industry but deals with group
Price: There is uniform/ single price ruling in ht market	The price differs in the market. There is no singly price for the same product

Cost: there is perfect knowledge of the market to the buyers, hence no advertisement costs are incurred.	There is imperfection in the market, hence promotional, selling cost is an integral par of monopolistic competition.

PRICE DISCRIMINATION UNDER MONOPOLY: TYPES AND DEGREES

In monopoly, there is a single seller of a product called monopolist. The monopolist has control over pricing, demand, and supply decisions, thus, sets prices in a way, so that maximum profit can be earned. The monopolist often charges different prices from different consumers for the same product. This practice of charging different prices for identical product is called price discrimination. According to Robinson, "Price discrimination is charging different prices for the same product or same price for the differentiated product."

Types of Price Discrimination

Price discrimination is a common pricing strategy used by a monopolist having discretionary pricing power. This strategy is practiced by the monopolist to gain market advantage or to capture market position. There are three types of price discrimination, which are shown below:

i) Personal

Personal price discrimination refers to a situation when different prices are charged from different individuals. The different prices are charged according to the level of

income of consumers as well as their willingness to purchase a product. For example, a doctor charges different fees from poor and rich patients.

ii) Geographical

This type of price discrimination occurs when the monopolist charges different prices at different places for the same product. This type of discrimination is possible if those who buy at lower price cannot sell to those being charged a higher price by the firm.

iii) On the basis of use

This kind of price discrimination occurs when different prices are charged according to the use of a product. For instance, an electricity supply board charges lower rates for domestic consumption of electricity and higher rates for commercial consumption. Similar discrimination occurs when buyers are charged different prices at different hours of the day – it is referred to as peak-load pricing.

PRICING IN PUBLIC MONOPOLY

So far we have discussed the behaviour of a private monopolist whose objective is to maximise her profits, given the economic and technical constraints. In this section, we analyse the behaviour of a public monopoly — a firm owned and controlled by the government. The objective of a public monopoly is to provide more output and charge lower price so as to increase the welfare of people. The optimal pricing and output decisions by such an undertaking is not based on profit or sales maximisation principles but on maximisation of welfare.

Average-cost-pricing and marginal-cost-pricing are the two possible options for the determination of output and price by a public utility firm. In fact, these two options can become policy guidelines for the government for price regulation of a private monopoly firm as well.

There is a need to regulate monopoly because monopolists have ability to restrict output and raise prices of their product and this way earn super normal profits. Such behaviour increases inequalities in the distribution of income and wealth leading to exploitation of the consumers and also causes inefficiency in allocation of resource. A net result of all these actions is reduction of consumer welfare in the society. Therefore, the main objective behind regulation of monopoly is the maximisation of welfare. A monopoly may be regulated either through fixation of a maximum price that a monopolist may charge or appropriate taxation policy. Here, we are concerned with price regulation of monopoly only. The issue involved in average and marginal cost pricing discussed here are useful in fixing of prices in a public utility as well.

Marginal Cost Pricing

As discussed above, a monopolist sets price of its product higher than marginal cost. Monopolist maximise profit at the level of output where MR=MC and charges price according to equilibrium condition. The government may decide to regulate a monopoly by fixing maximum price that equals marginal cost of production. The monopolist will be forced to raise the output higher then the equilibrium level and charges price, which would have prevailed had the market been perfectly competitive. Such a price would ensure efficiency in allocation of resources as well, since it is equal to marginal cost. It

also enhances welfare of the consumers, as they get larger output al lower price. The consumer's surplus under regulated monopoly is more then it was in non regulated monopoly.

It may be noted that given the conditions of demand and cost 'Marginal cost' pricing may still allow a monopolist to earn super normal profits as the price may still be higher than the average cost. This is a case of 'capacity constrained situation', that is the demand for the product is quite high as compared to the production capacity. But, in a different situation, when there is excess capacity, marginal cost pricing results in direct loss to the firm as its average cost is higher than marginal cost. Thus, the firm will produce marginal cost price output only if it is compensated by the government for the direct loss at this level of production.

Average Cost Pricing

The aim of the public policy is to regulate monopoly in such a manner that is possible to provide maximum output at minimum price. One policy option is to fix price according to the average cost, i.e, at a point where AR = AC. This allows the firm to earn normal profit. In case of capacity-constrained situation, average cost pricing leads to higher output and lower price. This means there will be higher level of consumer's surplus compared to marginal cost pricing. However, in excess capacity situation, there shall be a somewhat higher price with average cost pricing but there shall be no direct loss to the producer as P = AC. Marginal cost pricing adopted to reach full economic efficiency or maximum social welfare. But in case of excess capacity, where AC > MC,

marginal cost pricing necessitates state subsidies to induce the monopolist to stay in the market.

PRICING AND OUTPUT UNDER OLIGOPOLY

Oligopoly is an important form of imperfect competition. Since 'oligo' means few and 'poly' means seller, oligopoly refers to the market structure involving only few sellers or firms. The automobile industry in India is oligopolistic in structure as only few firms produce and supply automobiles. In fact, competition among few firms is the basic ingredient of the oligopolistic market structure.

1. FEATURES OF OLIGOPOLY

The oligopolistic market structure exhibits the following features:

1. Few Firms. Oligopoly is the market in which few firms compete with each other. The simplest model of oligopoly is duopoly. Duopoly is the market structure when only two firms produce and supply the product

2. Nature of the Product. In an oligopoly market, all the few firms produce an identical product Such an oligopoly market is called Pure or Perfect Oligopoly. On the other hand, firms with product differentiation constitute imperfect oligopoly.

3. Interdependence of Firms. In an oligopoly market, there is interdependence among firms. Each firm treats the other firms as its rivals. As a result of this, each firm attempts to estimate the nature of its rival's reactions to its price-output policies. Thus, the move made by one firm to reduce price evokes reaction from other firms.

4. Indeterminateness. The oligopoly firm's demand curve for the product is indeterminate because the firm can not assume that the rival firms will not change their prices in response to change in price effected by it In other words, the firm can not predict with certainty how its price-output decision will affect the rival firms. In short, reaction patterns of rival firms are indeterminate.

5. Complex Market Structure. The oligopolistic market structure is quite complex. On the one side, there is a possibility of rival firms to end rivalry by working out some policy of collusion. The collusive oligopoly manifests itself in the form of combination of rival firms to fix the common price and output sharing. Cartel is an example of collusive oligopoly. The non-collusive oligopoly is the other form of complex market structure.

6. Selling Costs. In the oligopoly market, each firm pursues an aggressive and defensive marketing strategy to gain a greater share in the market. Advertisement is an important method used by oligopolists to gain larger share in the market. The costs incurred on advertisement are selling costs.

Types of Oligopoly

Oligopoly may further be classified into collusive oligopoly and non-collusive oligopoly.

(a) Collusive oligopoly

The firms under oligopoly may decide to co-operate with each other and make common policies for all the firms. Thus, firms may collude with each other work on

common pricing policies and make common output decisions. In such an environment, the group of firms can behave like a monopolist and earn supernormal profits. This group of colluding firms is called ‘cartel’. One prominent example of cartel is ‘the Organization of Petroleum Exporting Countries (PEC)’.

(b) Non-collusive oligopoly

When firms do not co-operate with each other and engage in fierce competition with each other, the market is called non-collusive oligopoly. Under such environment, while competing with each other, firms drive price levels, and profit levels down to the level of normal profit only.