UNIT-I

ECONOMICS

Economics is a study of human activity both at individual and national level. The economists of early age treated economics merely as the science of wealth. The reason for this is clear. Every one of us in involved in efforts aimed at earning money and spending this money to satisfy our wants such as food, Clothing, shelter, and others. Such activities of earning and spending money are called "Economic activities".

According to Adam Smith- "Economics as the study of nature and uses of national wealth".

According to Dr. Alfred Marshall- "Economics is a study of man's actions in the ordinary business of life: it enquires how he gets his income and how he uses it".

MICRO AND MACRO ECONOMICS

Micro Economics

- The study of an individual consumer or a firm is called Micro Economics. It is also called the theory of Firm.
- Micro means one millionth. Micro Economics deals with behaviour and problems of single individual and of micro organisation. **Managerial Economics**
- Managerial Economics has its roots in micro economics and it deals with the micro or individual enterprises.
- It is concerned with the application of concepts such as Price Theory, Law of Demand and Theories of market structure and so on. **Macro Economics**
- The study of aggregate or total level of economic activity in a country is called Macro Economics.
- It studies the flow of economic resources or factors of production (such as land, labour, capital, organisation and technology) from the resource owner to the business firms and then from the business firms to the households.
- It deals with the total aggregates. For instance, total national income, total employment, total output and total investment.
- It studies the interrelations among various aggregates and examines their nature and behaviour, their determination and causes of their fluctuations in them.
- It deals with the price level in general, instead of studying the prices of individual commodities.
- It is concerned with the level of employment in the economy.
- It discusses aggregate consumption, aggregate investment, price level and national income.
- The important tools of macroeconomics include national income analysis, balance of payments and theories of employment and so on.

INTRODUCTION TO MANAGERIAL ECONOMICS

- Managerial Economics as a subject gained popularity in USA after the publication of book "Managerial Economics" by Joel Dean in 1951.
- Managerial Economics refers to the firm's decision making process.
- It could be also interpreted as "Economics of Management".
- Managerial Economics is also called as "Industrial Economics" or "Business Economics".
- Joel Dean observes managerial economics shows how economic analysis can be used in formulating policies.

DEFINITIONS OF MANAGERIAL ECONOMICS

- **M.H. SPENCER AND L. SIEGELMAN**-*Managerial Economics defined as "the integration of economic theory with business practice for the purpose of facilitating decision making and forward planning by management".*
- ***BRIGHAMANDPAPPAS** believe that managerial economics is -The application of economic theory and methodology to business administration practice".*
- ***C.I. SAVAGE AND T.R. SMALL** therefore believes that managerial economics is concerned with business efficiency.*
- ***HAGUE observes that**- "Managerial Economics is a fundamental academic subject which seeks to understand and to analyse the problems of business decision-making.*
- ***In the words of PAPPAS AND HIRSHEY**-"Managerial Economics applies economic theory and methods to business and administrative decision-making. Because it uses the tools and techniques of economic analysis to solve managerial problems, managerial economics links traditional economics with decision sciences to develop important tools for managerial decision-making".*
- ***MICHAEL R. BAYE defines**-Managerial Economics as "the study of how to direct scarce resources in a way that most efficiently achieves a managerial goal".*
- ***HAYNES, MOTE AND PAUL** define-Managerial Economics as "economics applied in decision-making. They consider this as a bridge between the abstract theory and the managerial practice".*

Managerial Economics, therefore, focuses on those tools and techniques, which are useful in decision-making

MANAGERIAL ECONOMICS:

Managerial Economics refers to the firm's decision making process. It could be also interpreted as "Economics of Management". Managerial Economics is also called as "Industrial Economics" or "Business Economics".

Managerial Economics bridges the gap between traditional economics theory and real business practices in two days. First it provides a number of tools and techniques to enable the manager to become more competent to take decisions in real and practical situations. Secondly it serves as an *integrating course to show the interaction between various areas in which the firm operates.*

NATURE / CHARACTERISTICS OF MANAGERIAL ECONOMICS:

1) **Close to microeconomics:** Managerial economics is concerned with finding the solutions for different managerial problems of a particular firm. Thus, it is more close to microeconomics.
2) **Operates against the backdrop of macroeconomics:** The macroeconomics conditions of the economy are also seen as limiting factors for the firm to operate. In other words, the managerial economist has to be aware of the limits set by the macroeconomics conditions such as government industrial policy, inflation and so on.
3) **Normative statements:** A normative statement usually includes or implies the words 'ought' or 'should'. They reflect people's moral attitudes and are expressions of what a team of people ought to do. For instance, it deals with statements such as 'Government of India should open up the economy. Such statement is based on value judgments and express views of what is 'good' or 'bad', 'right' or 'wrong'. One problem with normative statements is that they cannot to verify by looking at the facts, because they mostly deal with the future. Disagreements about such statements are usually settled by voting on them.
4) **Prescriptive actions:** Prescriptive action is goal oriented. Given a problem and the objectives of the firm, it suggests the course of action from the available alternatives for optimal solution. If does not merely mention the concept, it also explains whether the concept can be applied in a given context on not. For instance, the fact that variable costs are marginal costs can be used to judge the feasibility of an export order.
5) **Applied in nature**: 'Models' are built to reflect the real life complex business situations and these models are of immense help to managers for decision-making. The different areas where models are extensively used include inventory control, optimization, project management etc. In managerial economics, we also employ case study methods to conceptualize the problem, identify that alternative and determine the best course of action.
6) **Offers scope to evaluate each alternative:** Managerial economics provides an opportunity to evaluate each alternative in terms of its costs and revenue. The managerial economist can decide which is the better alternative to maximize the profits for the firm.
7) **Interdisciplinary:** The contents, tools and techniques of managerial economics are drawn from different subjects such as economics, management, mathematics, statistics, accountancy, psychology, organizational behaviour, sociology and etc.
8) **Assumptions and limitations:** Every concept and theory of managerial economics is based on certain assumption and as such their validity is not universal. Where there is change in assumptions, the theory may not hold good at all.

SCOPE OF MANAGERIAL ECONOMICS

The main focus in managerial economics is to find an optimal solution to a given managerial problem, the problem may have related to production, reduction or control of cost, determination of price of a given product or service, make or decisions, inventory decisions, capital management or profit planning and management, investment decisions or human resource management. While all these are the problems, the managerial economics makes use of the concepts, tools and

techniques of economics and other related discipline to find an optimal solution to a given managerial problem.

The main Areas of Managerial Economics **Demand**

Decision:

- The analysis and forecasting of demand for a given product and service is the first task of the managerial economist.
- The behavioural implications such as the needs of the customers' responses to a given change in the price or supply are analysed in a scientific manner.
- The impact of changes in prices, income levels and prices of alternative products / services are assessed and accordingly the decisions are taken to maximise the profits.
- Demand at different price levels at different points of time is forecast to plan the supply accordingly and initiate changes in price, if necessary, to enlarge the customer base and gain more profits.
- Determination elasticity of demand and demand forecasting constitute the strategic issues that the managerial economist handles in a scientific way.

Input-Output Decision:

- Here, the costs of inputs in relation to output are studied to optimise the profits.
- Production function and cost function are estimated given certain parameters.
- The behaviour of costs at different levels of production is assessed here.
- some costs are fixed, some are semi-variable and others are perfectly variable.
- The quantity of production increases remains constant or decreases with additional increase in outputs.
- This decision deals with changes in the production following changes in inputs which could be substitutes or complementary.
- The entire focus of this decision is to optimise(maximise) the output at minimum cost.
- If it is necessary for the manager to know the relationship between the cost and output both in the short-run and long-run to position his products amidst the competitive environment.

Price-Output Decision:

- Here, the production is ready and the task is to determine the price these in different market situations such as perfect market and imperfect markets ranging from monopoly, monopolistic competition, duopoly and oligopoly.
- The features of these markets and how price is determined in each of these competitive situations is studied here.
- The pricing policies, methods, strategies and practices constitute crucial part of the study of managerial economics.

Profit -related Decisions:

- Here we employ the techniques such as Break even analysis, cost reduction and cost control and ratio analysis to ascertain the level of profits.
- We determine break-even point beyond which firm start getting profits.
- In other words, if the firm produces less than break- even point, it loses.
- We can also plan the production needed to attain a given level of profits in short-run.
- Cost reduction and cost control deal with the strategies to reduce the wastage and thereby reduce the costs.
- These indirectly enhance the level of profits.
- Ratio analysis helps to determine the liquidity, solvency, profitability of the activities of the firm. There are certain ratios used to analyse and interpret the profitability of the firm given a set of accounting data.

Investment Decisions:

- Investment decisions are also called capital budgeting decisions.
- These involve commitment of large funds, which determine the fate of the firm.
- These decisions are irreversible.
- Hence the manager needs to be more attentive while committing his scarce funds, which have alternative uses.
- The allocation and utilisation of investments is paramount importance.
- Capital has a cost. It is expensive. Hence, it is to be utilised in such a way as to maximise the return on capital invested.
- It is necessary to study the cost of capital structure and investment projects before the funds are committed.

Economic Forecasting and Forward Planning:

- Economic forecasting leads to forward planning.
- The firm operates in an environment which is dominated by the external and internal factors.
- The external factors include major forces such as government policy, competition, employment, labour, price and income levels and so on.
- These influence its decision relating to production, human resources, finance and marketing.
- The internal factors include its policies and procedures relating to finance, people, market and products.
- It is necessary to forecast the trends in the economy to plan for the future in terms of investments, profits, products and markets. This will minimise the risk and uncertainty about the future.

BUSINESS ECONOMICS

1.1 Meaning of Business Economics

Business Economics is a branch of economics that applies economic theories, principles and concepts to business decision-making.

It helps managers make effective decisions regarding production, pricing, investment, cost control, demand forecasting and profit maximization.

In simple words, Business Economics explains how economic knowledge can be used to solve business problems and improve business performance.

Example:

Suppose a company manufactures mobile phones. Before deciding the selling price, the company needs to consider:

- Cost of production.
- Demand for mobile phones.
- Competitors' prices.
- Consumer purchasing power.
- Expected profit.

Business Economics helps the company analyse these factors and determine a suitable selling price.

1.2 Definitions of Business Economics

According to Spencer and Siegelman:

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

Simple definition:

Business Economics is the application of economic principles and theories to solve business problems and make effective managerial decisions.

1.3 Nature of Business Economics

The nature of Business Economics refers to its important characteristics.

1. Applied Science

Business Economics applies economic theories and principles to practical business situations.

Example: Applying demand and supply concepts to determine the price of a product.

2. Microeconomic in Nature

It mainly deals with individual business units, consumers, firms, production and pricing decisions.

Example: A company deciding the price of its products.

3. Normative Science

It suggests what a business should do to achieve its objectives.

Example: Advising a company to reduce production costs to increase profits.

4. Decision-Oriented

It helps managers choose the best alternative among different available options.

Example: Selecting between two suppliers based on cost and quality.

5. Forward Planning

It helps businesses plan future activities based on expected market conditions.

Example: Forecasting future demand before expanding production.

6. Interdisciplinary Approach

It uses concepts from economics, mathematics, statistics, accounting, finance and management.

Example: Using statistical methods to forecast sales.

7. Practical in Approach

It focuses on solving real-world business problems rather than only explaining theoretical concepts.

1.4 Scope of Business Economics

The scope of Business Economics covers the following areas:

1. Demand Analysis and Forecasting

It helps businesses understand consumer demand and estimate future sales.

Example: A smartphone company forecasting demand for its upcoming model.

2. Production Analysis

It helps firms decide the quantity of goods to produce by considering available resources and production costs.

3. Cost Analysis

It studies different types of costs, such as fixed costs, variable costs, average costs and marginal costs.

4. Pricing Decisions

It helps managers determine appropriate prices based on demand, competition and production costs.

5. Profit Management

It helps businesses plan and control profits by analysing revenue and expenditure.

6. Capital Budgeting

It helps managers evaluate long-term investment projects and select profitable opportunities.

7. Market Analysis

It helps businesses understand market conditions, competitors and consumer behaviour.

8. Risk and Uncertainty Analysis

It helps managers make decisions under uncertain market conditions.

DIFFERENCES BETWEEN ECONOMICS AND BUSINESS ECONOMICS

Basis	Economics	Business Economics
1. Meaning	Studies the economic activities of individuals and society.	Applies economic principles to business decisions.
2. Nature	Both theoretical and practical.	Mainly applied and practical.
3. Scope	Broad in scope.	Comparatively narrow in scope.
4. Focus	Focuses on individuals, firms, markets and the economy.	Mainly focuses on business firms and managerial decisions.
5. Objective	Studies efficient allocation of scarce resources and welfare.	Helps achieve business objectives such as profit and growth.
6. Approach	Includes microeconomics and macroeconomics.	Primarily uses microeconomic concepts, along with relevant macroeconomic factors.
7. Decision-making	Explains economic problems and principles.	Helps managers choose the best business alternatives.
8. Application	Used in economic policy, research and public planning.	Used in pricing, production, investment and cost decisions.
9. Orientation	May be theoretical, analytical and policy-oriented.	Mainly decision-oriented and forward-looking.
10. Examples	Inflation, unemployment and national income.	Product pricing, production planning and profit management.

BUSINESS DECISIONS IN THE SHORT RUN AND LONG RUN

1. Introduction

Every business organization has to make different decisions to achieve its objectives, such as profit maximization, cost minimization, sales growth, business expansion and customer satisfaction.

Managers regularly make decisions relating to production, pricing, employment, purchasing raw materials, investment, technology and marketing activities.

These decisions may be required to meet immediate business needs or to achieve future organizational goals. Based on the time period and flexibility of production factors, business decisions are classified into two categories:

1. Short-run business decisions.
2. Long-run business decisions.

Understanding the difference between short-run and long-run decisions helps managers use available resources effectively and plan business activities according to market conditions.

2. Meaning of Business Decisions

Business decisions refer to the process of selecting the best possible alternative from various available options to achieve the objectives of an organization.

In simple words, business decisions are the choices made by managers to solve business problems and improve organizational performance.

Example:

A manufacturing company is facing an increase in customer demand. Management has two options:

- Increase the working hours of existing employees and purchase additional raw materials.
- Establish a new factory and purchase additional machinery.

The first option is generally a short-run decision, whereas the second option is a long-run decision.

3. Short-Run Business Decisions

3.1 Meaning of Short Run

In economics, the short run refers to a period during which at least one factor of production remains fixed, while other factors can be changed.

During this period, a business organization cannot completely change its production capacity, factory buildings, machinery or other fixed resources. However, it can change variable inputs such as labour, raw materials, electricity and working hours.

In simple words, short-run decisions are business decisions taken to meet immediate requirements by using the existing production facilities and available resources.

Example:

A bakery has one oven, a building and existing machinery. During a festival season, customer demand for cakes increases.

The bakery owner decides to:

- Employ additional workers.
- Purchase more flour, sugar and other ingredients.
- Increase working hours.
- Produce more cakes using the existing oven.

This is a short-run decision because the bakery increases production without changing its basic production capacity.

3.2 Characteristics of Short-Run Business Decisions

1. Existence of Fixed Factors of Production

In the short run, at least one factor of production remains fixed. The business cannot immediately change its factory building, machinery or production capacity.

Example: A textile company continues to use its existing factory and machines.

2. Variable Factors Can Be Changed

Although some factors remain fixed, businesses can change variable inputs such as labour, raw materials and electricity consumption.

Example: A company hires additional temporary workers to increase production.

3. Limited Flexibility

Short-run decisions involve limited flexibility because businesses cannot immediately change all production facilities and resources.

Example: A restaurant can increase its working hours, but it may not be able to increase its seating capacity immediately.

4. Focus on Immediate Requirements

Short-run decisions mainly concentrate on solving current business problems and meeting immediate customer demand.

Example: A retail store increases stock during a festival season to meet customer requirements.

5. Limited Capital Investment

Short-run decisions generally involve comparatively smaller investments because businesses mainly utilize existing facilities.

Example: Purchasing additional raw materials instead of establishing a new production unit.

6. Operational Nature

These decisions are related to the daily activities and regular operations of the business organization.

Example: Deciding employee shifts, inventory levels and daily production quantities.

7. Fixed and Variable Costs

In the short run, businesses incur both fixed costs and variable costs.

- Fixed costs: Rent, insurance and depreciation.
- Variable costs: Raw materials, packaging and production-related wages.

Example: A factory pays the same building rent even when production increases, but its raw material expenses increase with production.

8. Immediate Results

Short-run decisions are generally taken to achieve immediate operational results, such as increasing sales, controlling expenses and meeting customer demand.

Example: Offering discounts to increase sales during a particular month.

Important Short-Run Business Decisions

1. Production Decisions

Managers decide how much quantity should be produced using the existing production capacity.

Example: A company increases production from 1,000 units to 1,500 units by using existing machinery and additional labour.

2. Employment Decisions

Businesses may recruit temporary employees, introduce overtime or adjust employee working hours according to production requirements.

Example: An e-commerce company recruits temporary delivery employees during a festive sale.

3. Purchasing Raw Materials

Managers decide how much raw material should be purchased to meet immediate production requirements.

Example: A bakery purchases additional flour, sugar and butter during the Christmas season.

4. Pricing Decisions

Companies may change prices or offer discounts to increase sales and attract customers.

Example: A clothing store offers a 20% discount during a festival sale.

5. Inventory Management

Managers decide the quantity of stock to maintain to avoid shortages and unnecessary storage costs.

Example: A supermarket maintains additional stock of essential products during festival seasons.

6. Cost Control Decisions

Businesses try to reduce unnecessary operating expenses and improve efficiency.

Example: A manufacturing company reduces electricity consumption and minimizes material wastage.

7. Marketing Decisions

Companies make immediate marketing decisions to attract customers and improve sales.

Example: A mobile phone company introduces a limited-period promotional offer.

8. Working Capital Decisions

Managers make decisions regarding cash, inventory, receivables and short-term payments to maintain smooth business operations.

Example: A company ensures sufficient cash is available to pay suppliers and employees.

Advantages of Short-Run Business Decisions

1. Quick Response: Businesses can respond quickly to changes in market demand.
2. Lower Investment: Most decisions use existing facilities and require comparatively less investment.
3. Operational Efficiency: Managers can improve daily business operations.
4. Flexibility in Variable Inputs: Labour, raw materials and working hours can be adjusted.
5. Immediate Problem Solving: Businesses can handle temporary market problems effectively.
6. Better Resource Utilization: Existing machinery and facilities can be used more efficiently.

Limitations of Short-Run Business Decisions

1. Limited Production Capacity: Businesses cannot increase production beyond the limitations of existing facilities.

2. Fixed Resources: Some production factors cannot be changed immediately.
3. Higher Operating Pressure: Increasing production through overtime may create pressure on employees and machinery.
4. Limited Technological Changes: Major technological improvements may require long-term planning and investment.
5. Temporary Solutions: Some short-run decisions may solve immediate problems without addressing long-term business requirements.
6. Increasing Marginal Costs: As more variable inputs are added to fixed resources, the additional cost of production may eventually increase.

ROLE AND RELEVANCE OF ECONOMICS IN BUSINESS DECISION-MAKING

Introduction

Economics plays an important role in business decision-making because every business organization has limited resources and unlimited business requirements.

Managers have to make several decisions regarding production, pricing, purchasing, investment, employment, marketing, cost control and business expansion.

To make these decisions effectively, managers need to understand economic principles such as demand, supply, cost, revenue, profit, market competition and resource allocation.

Economics provides the necessary knowledge and analytical tools to evaluate different alternatives and select the most suitable option.

Example:

Suppose a company manufactures mobile phones. Before launching a new model, management needs to consider:

- What is the expected demand for the product?
- What price should be fixed?
- How many units should be produced?
- What is the cost of production?
- Who are the competitors?
- How much profit can the company earn?

Economics helps managers analyse these questions and make appropriate business decisions.

Meaning of Economics in Decision-Making

Economic decision-making refers to the process of selecting the best possible alternative among different available options by considering costs, benefits, resources and expected outcomes.

In simple words, economics helps managers decide what to produce, how much to produce, how to produce and for whom to produce by using available resources efficiently.

Example:

A company has ₹10 lakh available for investment. Management has two alternatives:

1. Purchase advanced machinery.
2. Open a new branch.

By analysing the expected costs, revenue, market demand and profitability of both alternatives, management can select the better investment opportunity.

Definitions

Economics: Economics is the study of how individuals, businesses and societies allocate scarce resources to satisfy unlimited wants.

Economic Decision-Making: It is the process of choosing the most suitable alternative by evaluating available resources, costs, benefits and economic conditions.

Role of Economics in Business Decision-Making

The role of economics refers to the contribution of economic principles and theories in helping managers make effective business decisions.

The following are the major roles of economics in business decision-making.

1. Demand Analysis

Demand analysis helps managers understand the quantity of goods and services consumers are willing and able to purchase at different prices.

Economics explains how factors such as price, income, consumer preferences and prices of related goods influence demand.

By understanding consumer demand, businesses can make appropriate production and marketing decisions.

Example: A smartphone company studies customer preferences and demand before launching a new mobile phone model.

2. Demand Forecasting

Demand forecasting means estimating the future demand for goods and services.

Economics helps businesses analyse past sales, consumer behaviour, market trends and economic conditions to predict future demand.

It enables managers to plan production, purchasing, inventory and marketing activities.

Example: A clothing company forecasts the demand for winter clothes before the winter season and maintains sufficient stock.

3. Pricing Decisions

Pricing decisions involve determining the appropriate selling price of products and services.

Economics helps managers fix prices by considering production costs, demand, competition, consumer purchasing power and market conditions.

A suitable pricing strategy helps businesses attract customers, increase sales and earn profits.

Example: A company manufacturing bottled water fixes its selling price by considering production costs and competitors' prices.

4. Production Decisions

Production decisions involve determining what to produce, how much to produce and which production methods to use.

Economic principles help managers select the appropriate combination of labour, capital, raw materials and technology.

It also helps organizations avoid overproduction and underproduction.

Example: A car manufacturing company decides how many cars to produce based on expected market demand and available production capacity.

5. Cost Analysis and Cost Control

Cost analysis helps managers identify and examine different types of business costs.

Economics explains fixed costs, variable costs, average costs and marginal costs.

By understanding these costs, managers can reduce unnecessary expenditure, minimize wastage and improve operational efficiency.

Example: A textile company adopts automated machinery to reduce labour costs and material wastage.

6. Profit Maximization

Profit maximization is one of the major objectives of business organizations.

Economics helps managers analyse total revenue, total cost, marginal revenue and marginal cost to identify opportunities for increasing profits.

It also supports decisions regarding production quantity, selling prices and resource utilization.

Example: A restaurant controls food wastage, manages operating expenses and improves sales to increase its profit.

7. Investment Decisions

Investment decisions involve selecting suitable opportunities for investing financial resources.

Economics helps managers evaluate investment alternatives by considering expected returns, investment costs, interest rates, risks and future market conditions.

It supports long-term financial planning and capital budgeting decisions.

Example: A manufacturing company evaluates whether purchasing new machinery will generate sufficient returns before making the investment.

8. Resource Allocation

Resources such as land, labour, capital, machinery and time are limited.

Economics helps managers allocate these scarce resources among different business activities to achieve maximum efficiency.

It helps organizations reduce wastage and improve productivity.

Example: A company allocates more employees and financial resources to departments that generate higher business returns.

9. Market Competition

Economics helps managers understand different market structures and the nature of competition.

It explains perfect competition, monopoly, monopolistic competition and oligopoly.

By studying competitors, businesses can develop appropriate pricing, production and marketing strategies.

Example: A telecom company studies competitors' recharge plans before introducing a new mobile data package.

10. Risk and Uncertainty Analysis

Business organizations face risks due to changes in customer demand, market prices, technology, interest rates and government policies.

Economics helps managers analyse possible outcomes and evaluate alternative courses of action.

It supports better planning and preparation for uncertain business conditions.

Example: An agricultural equipment company studies monsoon conditions and farmers' purchasing capacity before deciding its production quantity.

11. Business Expansion Decisions

Economics helps organizations evaluate new business opportunities before expanding their operations.

Managers analyse market demand, production costs, availability of resources, competition and expected profitability.

This helps businesses select suitable locations and expansion opportunities.

Example: A retail company studies customer demand and market potential before opening a new branch in another city.

12. Government Policies and Economic Conditions

Government policies and changes in economic conditions directly influence business activities.

Economics helps managers understand the impact of taxation, inflation, interest rates, monetary policy and fiscal policy on business operations.

This knowledge helps companies adjust their strategies according to changing economic conditions.

Example: When interest rates increase, a company may reconsider its borrowing plans because the cost of loans becomes higher.

Relevance of Economics in Business Decision-Making

Meaning of Relevance

Relevance refers to the importance, usefulness or practical application of economics in making appropriate business decisions.

Economics is relevant to business management because it helps managers understand market conditions, use resources efficiently, reduce costs, improve profitability and achieve organizational objectives.

The following points explain the relevance of economics in business decision-making.

1. Optimum Utilization of Resources

Every business organization has limited resources. Economics helps managers utilize available resources efficiently and avoid unnecessary wastage.

It helps organizations select the best combination of labour, capital, materials and technology.

Example: A manufacturing company uses available machinery and employees effectively to increase production without unnecessary expenditure.

2. Better Managerial Decision-Making

Economics provides systematic methods and analytical tools to evaluate different business alternatives.

It helps managers compare costs, benefits and expected outcomes before selecting a suitable decision.

Example: A company compares two suppliers based on price, quality and transportation costs before purchasing raw materials.

3. Understanding Consumer Behaviour

Economics helps businesses understand consumer preferences, purchasing power, income levels and buying patterns.

This knowledge enables companies to develop products and services according to customer requirements.

Example: A mobile phone company introduces affordable smartphones to attract customers with lower purchasing power.

4. Maintaining Competitive Pricing

Economic principles help businesses determine suitable prices according to demand, supply, production costs and market competition.

Appropriate pricing helps companies attract customers and maintain their market position.

Example: A supermarket offers competitive prices to attract more customers.

5. Increasing Business Profitability

Economics helps managers understand the relationship between revenue, costs and profit.

By controlling unnecessary expenses and improving sales, businesses can increase their profitability.

Example: A restaurant reduces food wastage and improves inventory management to increase profit.

6. Facing Market Competition

Economics helps businesses analyse competitors, market structures and consumer demand.

It enables managers to develop suitable competitive strategies relating to pricing, quality, promotion and customer service.

Example: A telecom company introduces affordable data plans to compete with other service providers.

7. Future Business Planning

Economic analysis helps managers estimate future demand, costs, sales and market conditions.

It supports the preparation of short-term and long-term business plans.

Example: An automobile company estimates future demand for electric vehicles before planning its production capacity.

8. Understanding the Economic Environment

Economics helps managers understand changes in inflation, interest rates, national income, employment and government policies.

These factors influence purchasing power, production costs, investment and business profitability.

Example: When inflation increases, a company reviews its production budget because raw material prices may rise.

9. Improving Business Efficiency

Economics helps managers identify inefficient activities and improve the utilization of resources.

It supports better production planning, cost control and operational management.

Example: A manufacturing company introduces automated production methods to reduce production time and improve productivity.

10. Achieving Organizational Objectives

Economics supports the achievement of different organizational objectives such as profit maximization, sales growth, cost minimization, business expansion and customer satisfaction.

Example: A retail company uses demand forecasting, competitive pricing and cost management to increase sales and achieve its annual targets.

UNIT-II

DEMAND ANALYSIS

Demand

Demand in common parlance means the desire for an object. But in economics demand is something more than this. According to Stonier and Hague, "Demand in economics means demand backed up by enough money to pay for the goods demanded". This means that the demand becomes effective only it if is backed by the purchasing power in addition to this there must be willingness to buy a commodity.

Every want supported by the willingness and ability to but constitutes demand for a particular product or services. In other words, if I want a car and I cannot pay for it, there is no demand for the car from my side.

A product or services is said to have demand when **three conditions are satisfied:**

- Desire on the part of the buyer to buy
- Willingness to pay for it
- Ability to pay the specified price for it.

DETERMINANTS OF DEMAND

- There are so many factors on which the demand for a commodity depends. These factors are Economic, Social as well as Political factors.
- The effect of all these factors on the amount of demanded for the commodity is called Demand Function.
- The following are some of the factors that cause a change in demand other than price factor

PRICE OF THE COMMODITY:

- The most important factor affecting on demand is the price of the commodity.
- The amount of the commodity demanded at a particular price is more popularly called price demand. The relation between price and demand is called the Law of Demand.
- It is not only the existing price but also expected changes in price, which affect demand.

PRICES OF RELATED GOODS

CHANGE IN THE PRICES OF SUBSTITUTES- In case of substitutes like tea and coffee an increase in price of one commodity leads to an increase in the demand for other commodity and vice versa. The rise in price of coffee shall raise the demand for tea.

CHANGE IN THE PRICES OF COMPLEMENTARIES-In case of complementariness like car and petrol a fall in price of one commodity leads to an increase in the demand for other commodity and vice versa.

If the price of pens goes up, their demand is less as a result of which the demand for ink is also less. The price and demand go in opposite direction. The effect of changes in price a commodity on amounts demanded of related commodities is called cross demand.

INCOME OF THE CONSUMER:

The third most important factor influencing demand is consumer income.

- In fact, we can establish a relationship between the consumer income and demand at different levels of income, price and other things remaining same.
- The demand for a normal commodity goes up and falls down when income rises and falls down. But in case of Giffen goods the relationship is opposite.
- Demand always changes with a change in the incomes of the people.
- When income increases the demand for several commodities increases and vice versa.

TASTES AND FASHIONS OF CONSUMERS:

- The fourth most important factor influencing demand is consumers' tastes and fashions.
- The demand also depends on consumer's taste. Tastes include fashion, habit, customs etc.
- A customer taste is also affected by advertisement.
- If the taste for a commodity goes up, its amount demanded is more even at the same price.
- This is called increase in demand. The opposite is called decrease in demand.
- A change in the tastes and fashions brings about a change in demand for a commodity.
- When commodity goes out of fashion, the demand for it will decrease even though the price remains the same. Demand curve shifts to the left.

AFFECT OF WEALTH:

- The amount demanded of the commodity is also affected by the amount of wealth as well as its distribution.
- When the wealth of the people is more, demand for the normal commodities is also more.
  - If wealth is more equally distributed, the demand for necessaries and comforts is more.
- On the other hand, if some people are rich, while the majorities are poor, the demand for luxuries is generally higher.

CHANGE IN POPULATION:

- Increase in population increases demand for necessaries of life.
- The compositions of population also affect demand.
- Composition of population means the proportion of young and old and children as well as the ratio of men and women.
- A change in composition of population has an affect on the nature of demand for different commodities.
- A change in size as well as composition of population will affect the demand for certain commodities.

- For example: An increase in size of population will increase the demand for food grains. Similarly, an increase in percentage of women increases the demand for bangles and sarees.

CHANGES IN CLIMATE AND WEATHER:

- Demand always changes with a change in weather or climate even though price remains unchanged.
- In summer the demand for cool drinks increases and in winter it decreases.
- The climate of an area and the weather prevailing there has a decisive effect on consumer's demand.
- In cold areas woollen cloth is demanded. During hot summer days, ice is very much in demand. On a rainy day, ice cream is not so much demanded.

CHANGES IN GOVERNMENT POLICY:

- Government policy affects the demand for commodities through taxation.
- Taxing a commodity increases its price and demand goes down.
- Similarly, financial help from government increases the demand for a commodity while lowering its price.

EXPECTATIONS REGARDING THE FUTURE:

- If consumers expect changes in price of commodity in future, they will change the demand at present even when the present price remains the same.
- Similarly, if consumers expect their incomes to rise in the near future they may increase the demand for a commodity just now.

STATE OF BUSINESS:

- The level of demand for different commodities also depends upon the business conditions in the country.
- If the country is passing through boom conditions, there will be a marked increase in demand.
- On the other hand, the level of demand goes down during depression conditions.

ADVERTISEMENT:

- Advertisement has become the most popular means in changing the demand for a commodity in the modern world.
- By a regular advertisement, the preference of the consumers can be influenced.

TECHNICAL PROGRESS:

- Due to technical progress, new commodities will enter into the market and demand for the old commodities will decrease.
- For example, Due to the introduction of electronic watches the demand for ordinary watches has decreased.

DEMAND FUNCTION

Demand function is a mathematical expression of relation between the quantity demanded and its determinants. It can be expressed as follows

QD = F(*P, I, Psc, T, A*)

Where

Qd = quantity demand

F = functional relational between input

P = price of the product

I = income of the consumer

Psc= price of substituted or complementary

T = taste and preference

A = advertisement

LAW OF DEMAND

DEMAND ANALYSIS

INTRODUCTION OF DEMAND:

- Demand in common practice / ordinary language means the desire for an object. Suppose a person desires to have a car. It is called demand in ordinary usage.
- But in economics demand has a separate meaning which is quite distinct from the above meaning.
- A mere desire cannot become demand in Economics.
- A desire which is backed up by (i) ability to buy and (ii) willingness to pay the price, is called demand. Unless the desire is accompanied by ability to buy and willingness to pay, it cannot be called demand in Economics.

DEFINITIONS OF DEMAND:

According to Stonier and Hague-

- "Demand in economics means demand backed up by enough money to pay for the goods demanded".
- This means that the demand becomes effective only if it is backed by purchasing power in addition to this there must be willingness to buy a commodity.
- Thus, demand in economics means the desire backed by the willingness to buy a commodity and the purchasing power to pay.

In the words of Benham,

- "The demand for anything at a given price is the amount of it which will be bought per unit of time at that price". (Thus, demand is always at a price for a definite quantity at a specified time.)
- Thus, demand has three essentials i.e., price, quantity and time. Without these three demand has no significance in economics.

DEFINITIONS OF LAW OF DEMAND:

ALFRED MARSHALL stated that Law of Demand as-

- "a rise in the price of commodity or service is followed by a reduction in demand and fall in price is followed by an increase in demand, if the conditions of demand remain constant."
- Marshall stated that the Law of Demand basing on the law of Diminishing Marginal Utility.

In the words of SAMUELSON-

- The Law of Demand may be stated as- "Other things being equal, the quantity demanded increases with a fall in price and decreases with a rise in price."

LAW OF DEMAND:

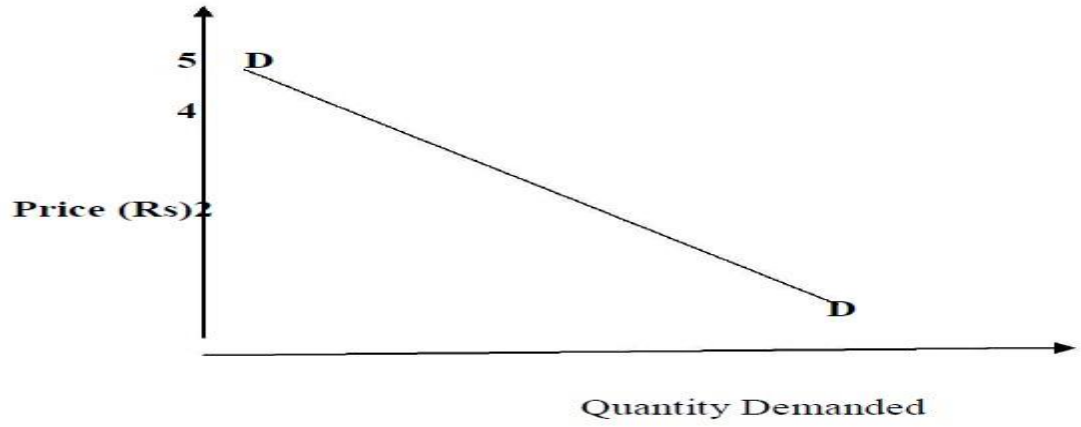
Law of demand states the relationship between price and quantity demanded. As per the law when price is increased demand will decrease, and similarly, when price is decrease demand will increase, this law assumed that, other things remaining constant, the change in price will inversely affect demand, thus the relationship between price and demand is inverse.

A rise in the price of a commodity is followed by a fall in demand and a fall in price is followed by a rise in demand, if a condition of demand remains constant.

DEMAND SCHEDULE

The Law of Demand may be explained with the help of the following Demand Schedule.

Price of Mangoes (Rs.)	Quantity Demanded
1	25
2	20
3	15
4	10
5	5



- From the above table, it is clear that as price of Mangoes rises from Rs.1 to Rs.2 demand falls from 25 to 20.
- When the price of Mangoes rises to Rs.5 quantity demand falls to 5 Mangoes.
- In the same way as price rises, quantity demand falls on the basis of demand schedule. We can draw a demand curve from the above Demand Schedule as follows.
- In the above Diagram, demand is shown on OX –axis and price is shown on OY-axis. DD is the demand curve.
- The demand curve DD shows the inverse relation between price and quantity demand of Mangoes.
- The demand curve slopes downward from left to right.

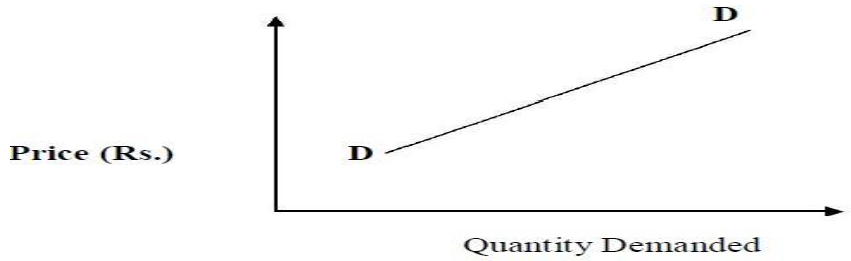
ASSUMPTIONS OF LAW OF DEMAND:

Law of Demand is based on the following assumptions. The Law will hold good only if the following assumptions are fulfilled.

1. That the tastes and fashions of the people remain unchanged.
2. That the people's income remains unchanged / constant.
3. That the prices of related goods remain unchanged / same.
4. That there are no substitutes for the commodity in the market.
5. That the commodity is not the one which has prestige value such as diamonds etc.
6. That the demand for the commodity should be continuous.
7. That the people should not expect any change in the price of the commodity.

EXCEPTIONS TO THE LAW OF DEMAND:

Some times in case of some commodities demand curve slopes upwards from left to right. It shows that when price rises demand also rises and when price falls demand also falls. In this case the demand curve has a positive slope. We can draw the Exceptional Demand Curve as follows.



- In the above Diagram, demand is shown on OX –axis and price is shown on OY-axis.
- DD is the demand curve.
- When price increases from OP to OP1 quantity demand also increases from OQ to OQ1 and the price falls down from OP1 to OP quantity demand also falls down from OQ1 to OQ.
- Hence the exceptional demand curve slopes upwards from left to right in this diagram.

following are the important exceptions to the Law of Demand.

1. Giffen Paradox
2. Prestige goods
3. Speculation
4. Trade Cycles
5. Changes in Expectations.

GIFFEN PARADOX:

- In the early part of the 19th Century, Sir Robbert Giffen, a British Economist observed that the Low paid British workers were purchasing more bread, when its price increased.
- This is something contrary to the law of demand.
- He observed that the people spend a major portion of their incomes on bread only a small part on meat. Meat is costlier but less essential that bread.
- When the price of the bread increased, they reduced the expenditure on meat.
- With the money thus saved they purchased more bread to compensate for the loss of meat.
- Thus, where the price of bread is increases, its demand is also increased. This is the against law of demand.
- This paradox was stated by Sir Robbert Giffen. Therefore, it is called Giffen Paradox.
- Marshall could not explain this. It appeared to be a paradox to him.
- The Demand Curve for Giffen goods (Inferior goods) goes upward from left to right as shown in the above diagram.

PRESTIGE GOODS:

- This exception is explained by Veblen. Costly goods like Diamonds, cars etc., are called prestige goods or as Veblen goods.
- Generally rich people purchase those goods for the sake of prestige.
- The use of such articles increases the prestige of owners.
- So, rich people may buy more of such goods when their prices rise.

- Thus, the amount demanded rises instead of falling, when the prices fall they do not purchase them because their value is reduced.
- Therefore, the demand decreases when the price falls.
- This is against to the Law of Demand.
- Since this exception is stated by Veblen, it is called Veblen effect

SPECULATION:

- When the price of a commodity rises and people expect that it will rise still further.
- Hence, they buy more of that commodity.
- Similarly, if they expect that there is going to be a further fall in the price, demand may not expand. This is contrary to the Law of Demand.

TRADE CYCLES:

- During the periods of economic prosperity, people buy more even when the prices rise.
- This happens because the incomes of the people have gone up.
- During times of depression, people buy less and less even when prices fall.

CHANGES IN EXPECTATIONS:

- When people expect a further rise in prices, people buy more when prices rise.
- They want avoid paying more in future.
- Similarly, when people expect the prices to fall in further, they buy less and less as prices fall.
- They may be expecting a further in prices.

ELASTICITY OF DEMAND

Elasticity of demand explains the relationship between a change in price and consequent change in amount demanded. "Marshall" introduced the concept of elasticity of demand. Elasticity of demand shows the extent of change in quantity demanded to a change in price.

In the words of "Marshall", "The elasticity of demand in a market is great or small according as the amount demanded increases much or little for a given fall in the price and diminishes much or little for a given rise in Price"

Elastic demand: A small change in price may lead to a great change in quantity demanded. In this case, demand is elastic.

In-elastic demand: If a big change in price is followed by a small change in demanded then the demand in "inelastic".

Types of Elasticity of Demand: There are three types of elasticity of demand:

1. Price elasticity of demand
2. Income elasticity of demand
3. Cross elasticity of demand
4. Advertising elasticity of demand **Price elasticity of demand:**

Elasticity of demand in general refers to price elasticity of demand. In other words, it refers to the quantity demanded of a commodity in response to a given change in price. Price elasticity is always negative which indicates that the customer tends to buy more with every fall in the price, the relationship between the price and the demand is inverse.

$$\textbf{Price Elasticity} = \frac{\textbf{Proportionate change in the quantity demand of commodity}}{\textbf{Proportionate change in the price of commodity}}$$

$$edp = \frac{Q2 - Q1/Q1}{P2 - P1/P1}$$ **Where:**

Q1 = quantity demand price before change

Q2 = quantity demand price after change

P1 = price before change

P2 = price after change

Income elasticity of demand: Income elasticity of demand refers to the quantity demand of a commodity in response to a given change in income of the consumer.

$$\textbf{Income Elasticity} = \frac{\textbf{Proportionate change in the quantity demand of commodity}}{\textbf{Proportionate change in the Income of the people}}$$

$$EdI = \frac{Q2 - Q1/Q1}{I2 - I1/I1}$$

Where:

Q1 = quantity demand price before change

Q2 = quantity demand price after change

I1 = income before change

I2 = income after change

Cross elasticity of demand: Cross elasticity of demand refers to the quantity demanded of a commodity in response to a change in the price of a related good, which may be substitute or complement.

$$\textbf{Cross Elasticity} = \frac{\textbf{Proportionate change in the quantity demand of commodity "}X\textbf{"}}{\textbf{Proportionate change in the Price of Commodity "}Y\textbf{"}}$$

$$EdI = \frac{Q2 - Q1/Q1}{}$$

$$P2 - P1/P1 \text{ Where:}$$

Q1 = quantity demand price before change

Q2 = quantity demand price after change

P1 = price before change

P2 = price after change

Advertising elasticity of demand: It refers to increase in the sales revenue because of change in the advertising expenditure. In other words, there is a direct relationship between the amount of money spent on advertising and its impact on sales. Advertising elasticity is always positive.

$$\textbf{Cross Elasticity} = \frac{\textbf{Proportionate change in the quantity demand of Product}}{\textbf{Proportionate change in Advertisement cost}}$$

$$EdA = \frac{Q2 - Q1/Q1}{A2 - A1/A1} \text{ Where:}$$

Q1 = quantity demand price before change

Q2 = quantity demand price after change

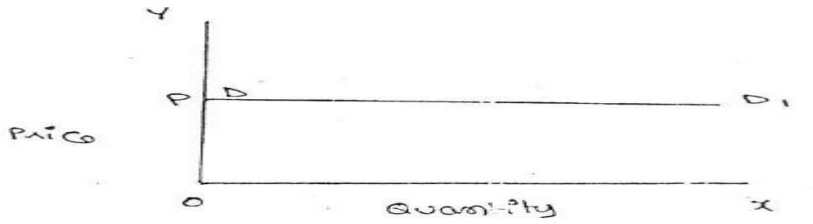
A1 = advertising before change

A2 = advertising after change

MEASUREMENT ELASTICITY OF DEMAND

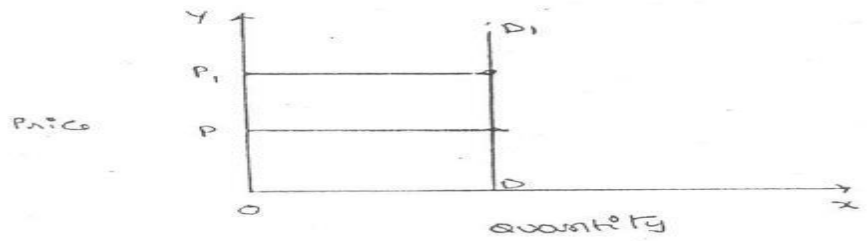
1. Perfectly elasticity of demand
2. Perfectly inelasticity of demand
3. Relatively elasticity of demand
4. Relatively inelasticity of demand
5. Unity elasticity of demand

Perfectly elasticity of demand: When any quantity can be sold at a given price, and when there is no need to reduce price, the demand is said to be perfectly elastic. In such cases, even a small increase in price will lead to complete fall in demand.

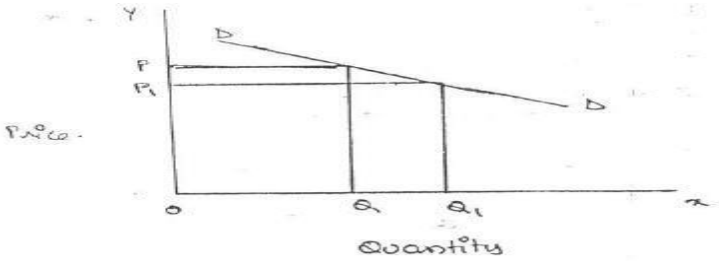


Perfectly inelasticity of demand: When a significant degree of change in price leads little or no change in the quantity demanded, then the elasticity is said to be perfectly inelasticity. In other

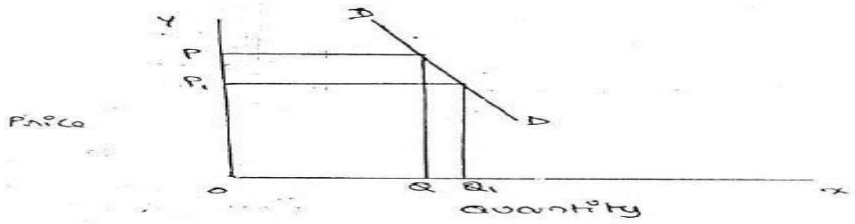
words, the demand is said to be perfectly inelasticity when there is no change in the quantity demanded even though there is a big change in the price.



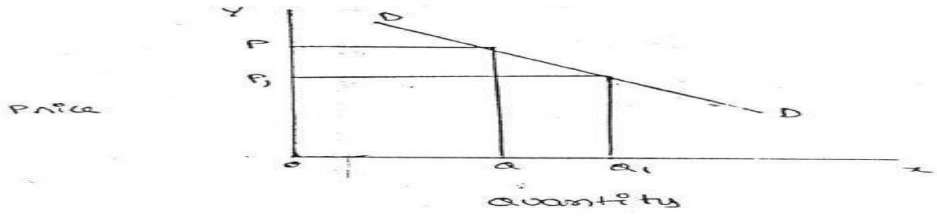
Relatively elasticity of demand: The demand is said to be relatively elasticity when the change in demand is more than the change in the price.



Relatively inelasticity of demand: The demand is said to be relatively inelasticity when the change in demand is less than the change in the price.



Unity elasticity: The elasticity in demand is said to be unity when the change in demand is equal to the change in price.



SIGNIFICANCE OF ELASTICITY OF DEMAND

Price of factors of production:

The factors of production are land, labour, capital, organizations and technology. These have a cost; we have to pay rent, wages, interest, profits and price for these factors of production.

Price fixation:

the manufacturer can decide the amount of price that can be fixed for his product based on the concept of elasticity, if there is no competition, in other words in the case of a monopoly, the manufacture is free to fix his price as long as it does not attract the attention of the government, when there are close substitutes, the product is such that its consumption can be postponed, it cannot be put to alternative uses and so on, then the price of the product cannot be fixed very highly.

Government policies

- **Tax policies:** government extensively depends on this concept to finalize its polices relating to taxes and revenues. Where the product is such that the people cannot postpone its consumptions, the government tends to increase its, price, such as petrol and diesel, cigarettes, and so on.
- **Raising bank deposits:** if the government wants to mobilize larger deposits from the consumer it proposes to raise the rates of fixed deposits marginally and vice versa.
- **Public utilities:** government uses the concept of elasticity in fixing charges for the public utilities such as elasticity tariff, water charges, ticket fare in case of road or rail transport.

Forecasting demand:

Income elasticity is used to forecast demand for a particular product or services. The demand for the products can be forecast at a given income level. The trader can estimate the quantity of goods to be sold at different income levels to realize the targeted revenue.

Planning the levels of output and price:

The knowledge of price elasticity is very useful to producers. The producer can evaluate whether a change in price will bring in adequate revenue or not. In general, for items whose demand is elastic, it would benefit him to charge relatively low price. On the other hand, if the demand for the product is inelastic, a little higher price may be helpful to him to get huge profits without losing sales.

DEMAND FORECASTING

Demand forecasting refers to an estimate of future demand for the product. It is an objective assessment of the future course of demand, in recent times, forecasting plays an important role in business decision – making. The survival and prosperity of a business firm depend on its ability to meet the consumer's needs efficiently and adequately. Demand forecasting has an important influence on production planning. It is essential for a firm to produce the required quantities at the right time.

It is also essential to distinguish between forecasting of demand and forecast of sales, sales forecasts are important for estimating revenue, cash requirements and expenses whereas, demand

forecasting relate to production, inventory control, timing, reliability of forecast etc. however, there is not much difference between these terms.

METHODS OF DEMAND FORECASTING

1. Survey methods
2. Statistical methods
3. Expert opinion methods
4. Test marketing
5. Controlled experiments
6. Judgmental approach

STATISTICAL METHODS: Statistical method is used for long run forecasting. In this method, statistical and mathematical techniques are used to forecast demand. This relies on past data.

Trend projection method: these are generally based on analysis of past sales patterns. These methods dispense with the need for costly market research because the necessary information is often already available in company files. This method is used in case the sales data of the firm under consideration relate to different time periods, i.e., it is a time – series data. There are five main techniques of mechanical extrapolation.

- **Trend line by observation:** this method of forecasting trend is elementary, easy and quick. It involves merely the plotting of actual sales data on a chart and them estimating just by observation where the trend line lies. The line can be extended towards a future period and corresponding sales forecast is read form the graph.
- **Least squares methods:** this technique uses statistical formulae to find the trend line which best fits the available data. The trend line is the estimating equation, which can be used for forecasting demand by extrapolating the line for future and reading the corresponding values of sales on the graph.
- **Time series analysis:** where the surveys or market tests are costly and time – consuming, statistical and mathematical analysis of past sales data offers another method to prepare the forecasts, that is, time series analysis.
- **Moving average method:** this method considers that the average of past events determine the future events. In other words, this method provides consistent results when the past events are consistent and unaffected by wide changes.
- **Exponential smoothing:** this is a more popular technique used for short run forecasts. This method is an improvement over moving averages method, unlike in moving averages method, all time periods here are given varying weight, that is, value of the given variable in the recent times are given higher weight and the values of the given variable in the distant past are given relatively lower weights for further processing.
- **Barometric Technique:** Simple trend projections are not capable of forecasting turning paints. Under Barometric method, present events are used to predict the directions of change in future. This is done with the help of economics and statistical indicators. Those are (1) Construction Contracts awarded for building materials (2) Personal income (3)

Agricultural Income. (4) Employment (5) Gross national income (6) Industrial Production (7) Bank Deposits etc. g. Simultaneous equation method: in this method, all variable is simultaneously considered, with the conviction that every variable influence the other variables in an economic environment. Hence, the set of equations equal the number of dependent variable which is also called endogenous variables.

- **Correlation and regression methods:** correlation and regression methods are statistical techniques. Correlation describes the degree of association between two variables such as sales and advertisement expenditure. When the two variables tend to change together, then they are said to be correlated.

Expert opinion methods:

Well informed persons are called experts; experts constitute yet another source of information. These persons are generally the outside experts and they do not have any vested interest in the results of a particular survey. As expert is good at forecasting and analysis the future trend in a given product or service at a given level of technology. The service of an expert could be advantageously used when a firm uses general economic forecasting or special industry fore casting prepared outside the firm.

Test marketing:

It is likely that opinions given by buyers, salesman or other experts may be, at times, misleading. This is the reason why most of the manufactures favour to test their product or service in a limited market as test – run before they launch their product nationwide.

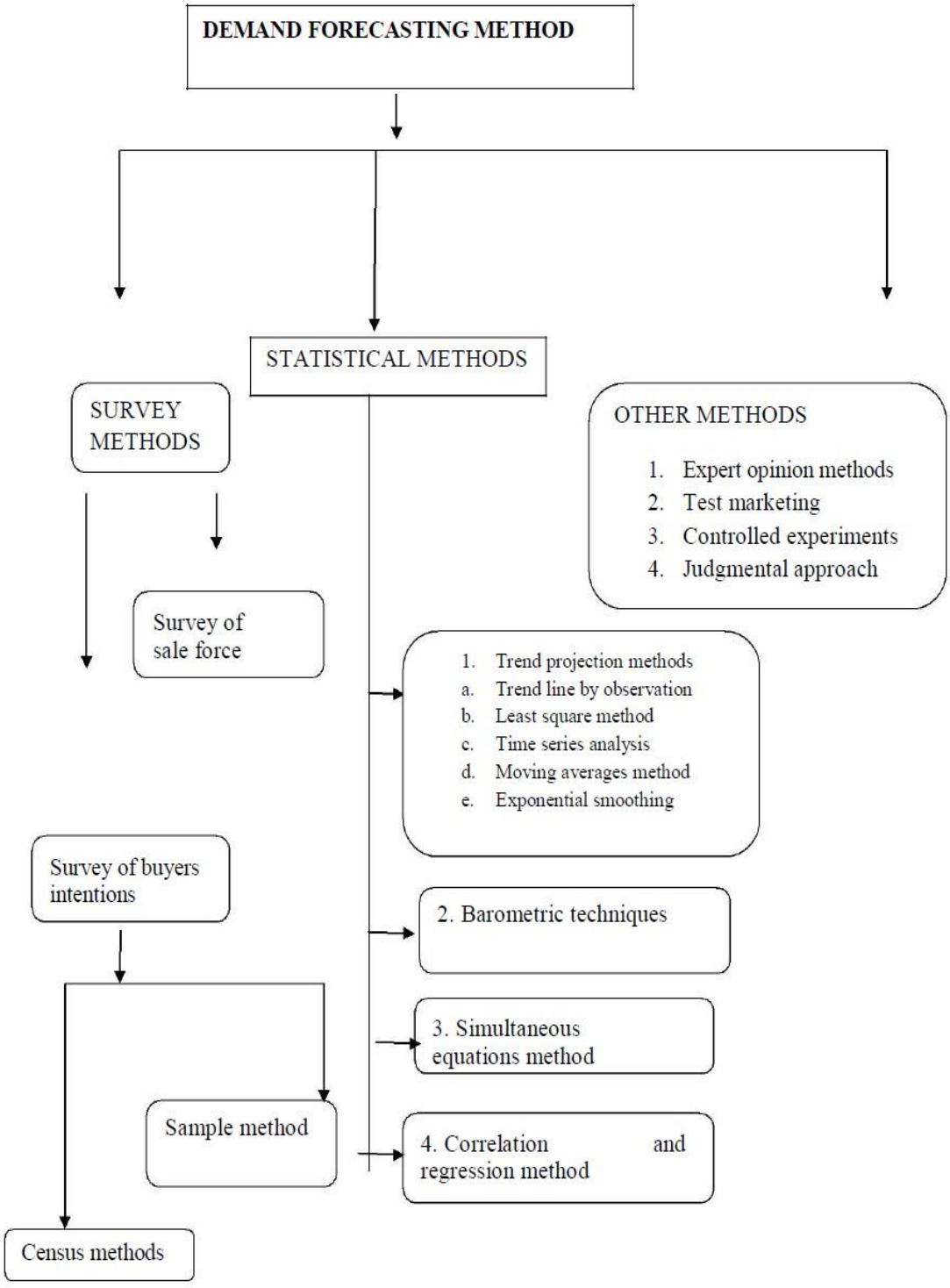
Controlled experiments:

Controlled experiment refers to such exercise where some of the major determinants of demand are manipulated to suit to the customers with different tastes and preferences, income groups, and such others, it is further assumed that all other factors remain the same.

Judgmental approach:

When none of the above methods are directly related to the given product or service, the management has no alternative other than using its own judgment. Even when the above methods are used, the forecasting process is supplemented with the factor of judgment for the following reasons

- Historical data for significantly long period is not available
- Turning point in terms of policies or procedures or causal factors cannot be precisely determined Sale fluctuation are wide and significant
- The sophisticated statistical techniques such as regression and so on, may not cover all the signing.


DEMAND FORECASTING METHOD
STATISTICAL METHODS
SURVEY METHODS
OTHER METHODS
1. Expert opinion methods
2. Test marketing
3. Controlled experiments
4. Judgmental approach
Survey of sale force
1. Trend projection methods
a. Trend line by observation
b. Least square method
c. Time series analysis
d. Moving averages method
e. Exponential smoothing
Survey of buyers intentions
2. Barometric techniques
3. Simultaneous equations method
Sample method
4. Correlation and regression method
Census methods

Factors Governing Demand Forecasting

Functional nature of demand: market demand for a particular product or service is not a single number but it is a function of a number of factors, for instance, higher volumes of sales can be realized with higher levels of advertising or promotion efforts.

Types of forecasting: based on the period under forecast, the demand forecast can be of two types1) short – run forecasting and 2) long – run forecasting. Short run forecasts cover a period of one year whereas long- run forecasting any period ranging from one year to 20 years.

Forecasting level: the forecasting, at the firm level, industry level, national level or at the global level.

- Firm level: firm level means estimating the demand for the products and services offered by a single firm
- Industry level: the aggregate demand estimated for the good and service of all the firms constitutes the industry level forecast. The total estimate of different trade associations can also be view as industry level forecast.
- National level: national level forecasting is for the whole economy, national level forecasts are worked out based on the levels of income, savings of the consumers.
- Global level: globalization and deregulation, the entrepreneurs have started exploring the foreign markets for which the global level forecasts are utilized.

Degree of orientation: demand forecasts can be worked out based on total sales or product or service wise sales for a given time period. Forecasting in terms of total sales can be viewed as general forecast whereas product or service – wise or region or customer segment – wise forecast is referred is referred to as specific forecast.

New product: it is relatively easy to forecast demand for established products or products which are currently in use. The new product in consideration can be analyzed as a substitute for some existing product. Assess the demand through a sampled or total survey of consumers' intentions over the new product features and price. f) Nature of good: The goods are classified into producer goods, consumer goods, consumer durables and services. The patterns of forecasting in each of these differ. g) Degree of competition: there may be a single trader or a few traders depending upon the nature of goods and services.

Supply – Meaning and Introduction

Supply refers to the quantity of a commodity that a seller or producer is willing and able to offer for sale at different prices during a particular period of time.

In simple words, supply means the quantity of goods that producers are ready to sell in the market at a given price.

Example:

A farmer is willing to sell 100 kg of tomatoes at ₹20 per kg. If the market price increases to ₹30 per kg, the farmer may be willing to sell 150 kg. This shows that supply generally increases when price increases.

Important features of supply:

1. Supply is related to sellers and producers.
2. It represents the quantity offered for sale.
3. Supply is related to a particular price.
4. It is measured over a specific period.
5. Supply depends on price and other factors such as production cost, technology and government policies.

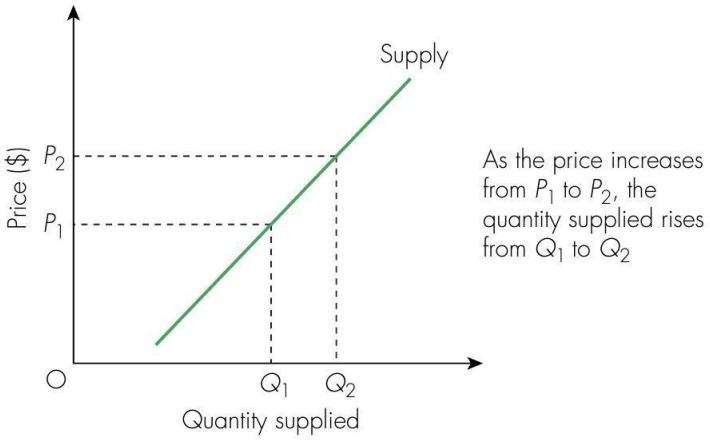
Law of Supply

Meaning

The Law of Supply states that, other things remaining constant, the quantity supplied of a commodity increases when its price increases and decreases when its price decreases.

In simple words, higher price leads to higher supply, while lower price leads to lower supply.

This shows a direct relationship between price and quantity supplied.



▲ **Figure 8.1** The supply curve

Assumptions of the Law of Supply

The law operates under the assumption that other factors remain constant (Ceteris Paribus).

1. Cost of production remains constant.
2. Technology does not change.
3. Government taxation policies remain unchanged.

4. Prices of related goods remain constant.
5. Number of sellers remains unchanged.
6. Producers do not expect major future price changes.
7. Natural conditions remain stable.

Supply Schedule

A supply schedule is a table showing different quantities of a commodity supplied at different prices during a particular period.

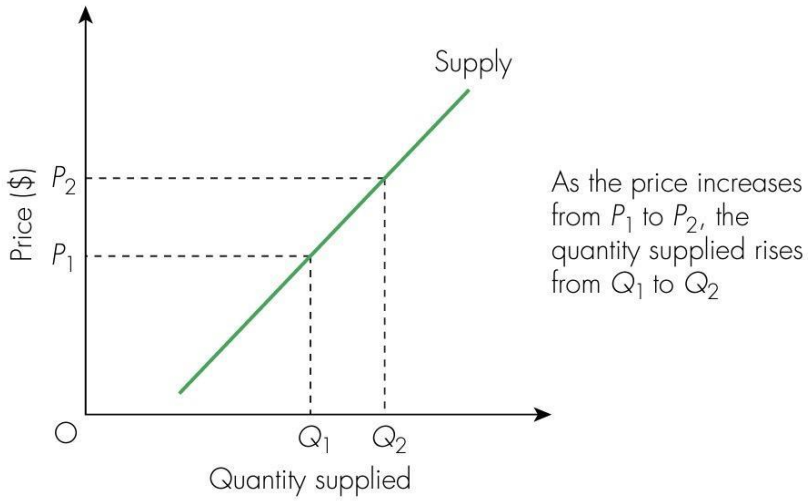
Example: Supply Schedule for Apples

Price per kg (₹)	Quantity supplied (kg)
10	20
20	40
30	60
40	80
50	100

Interpretation: When the price increases from ₹10 to ₹50, the quantity supplied increases from 20 kg to 100 kg.

Supply Curve

A supply curve is a graphical representation of the relationship between price and quantity supplied.



▲ **Figure 8.1** The supply curve

- Y-axis represents price.
- X-axis represents quantity supplied.
- The supply curve slopes upward from left to right.
- It indicates a positive relationship between price and quantity supplied.

Reasons for the Upward Slope of the Supply Curve

1. Profit motive: Producers supply more when prices increase because they can earn higher profits.
2. Higher production: Higher prices encourage producers to increase production.
3. Entry of new firms: Attractive prices encourage new firms to enter the market.
4. Use of additional resources: Producers may use additional labour and machinery to increase output.
5. Higher marginal cost: Producing additional units may involve higher costs, so producers require higher prices.

Exceptions to the Law of Supply

In certain situations, the law may not operate normally.

1. Agricultural products: Farmers may sell more crops even at lower prices because they need immediate cash or cannot store perishable goods.
2. Perishable goods: Sellers may sell more at reduced prices to avoid wastage.
3. Rare goods: Rare paintings and antiques have limited availability regardless of price.
4. Future price expectations: Producers may reduce current supply if they expect prices to increase in the future.
5. Labour supply: At very high wage levels, some workers may prefer leisure over additional working hours.

Supply Function

Meaning

A supply function explains the relationship between the quantity supplied of a commodity and the factors that influence its supply.

It shows how much quantity producers are willing to supply at different prices, considering other influencing factors.

General Supply Function:

$$Qs=f(P,C,T,G,N,E)$$

Where:

- (Qs) = Quantity supplied
- (P) = Price of the commodity
- (C) = Cost of production
- (T) = Technology
- (G) = Government policies and taxes
- (N) = Number of sellers
- (E) = Expectations about future prices

Factors Affecting Supply

1. Price of the Commodity

When the selling price increases, producers generally supply more to earn higher profits.

Example: If the price of milk increases, dairy farmers may supply more milk.

2. Cost of Production

If raw material, labour and electricity costs increase, production becomes expensive and supply may decrease.

Example: An increase in the price of cotton may reduce the supply of cotton garments.

3. Technology

Improved technology increases production efficiency and supply.

Example: Modern agricultural machinery helps farmers produce and supply more crops.

4. Government Policies

Taxes, subsidies and regulations influence the supply of products.

Example: Government subsidies on fertilizers may encourage farmers to increase agricultural production.

5. Number of Sellers

An increase in the number of producers increases market supply.

Example: When more companies enter the electric vehicle market, the overall supply of electric vehicles may increase.

6. Prices of Related Goods

Producers may shift resources towards products that provide higher profits.

Example: A farmer may cultivate more groundnuts instead of cotton if groundnut prices become more attractive.

7. Natural Conditions

Weather, rainfall, floods and droughts affect agricultural supply.

Example: Good rainfall may increase the supply of rice.

8. Future Price Expectations

If producers expect prices to rise in the future, they may reduce current supply and hold stocks, where storage is possible.

Elasticity of Supply

Meaning

Elasticity of Supply refers to the degree of responsiveness of quantity supplied to a change in the price of a commodity.

In simple words, it measures how much the quantity supplied changes when the price changes.

Formula:

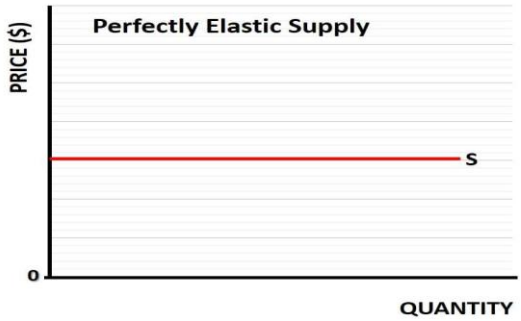
Types of Elasticity of Supply

There are five important types.

1. Perfectly Elastic Supply (Es = ∞)

A very small change in price causes an extremely large change in quantity supplied. The supply curve is horizontal.

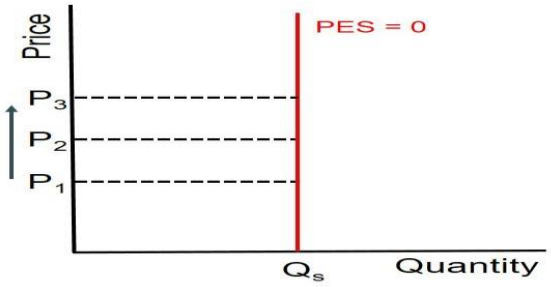
Example: A theoretical situation where producers supply any quantity at one fixed price.



2. Perfectly Inelastic Supply (Es = 0)

Quantity supplied does not change even when price changes. The supply curve is vertical.

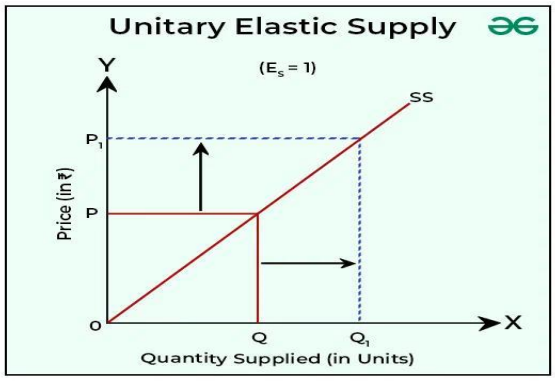
Example: The number of seats available in a stadium for a particular match.



3. Unitary Elastic Supply (Es = 1)

The percentage change in quantity supplied is equal to the percentage change in price.

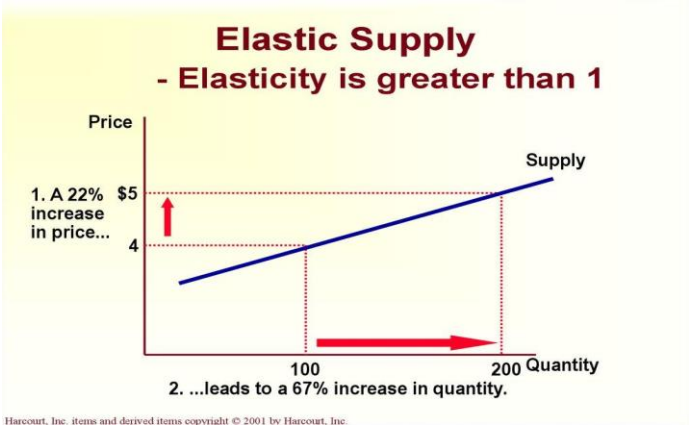
Example: Price increases by 10%, and quantity supplied also increases by 10%.



4. Relatively Elastic Supply (Es greater than 1)

Percentage change in quantity supplied is greater than the percentage change in price.

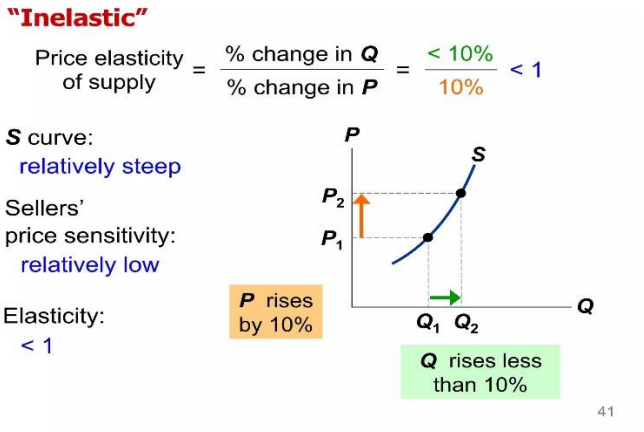
Example: Price increases by 10%, while quantity supplied increases by 20%.



5. Relatively Inelastic Supply (Es less than 1)

Percentage change in quantity supplied is less than the percentage change in price.

Example: Price increases by 10%, while quantity supplied increases by only 5%.



Market Equilibrium

Meaning

Market Equilibrium is a situation in which the quantity demanded of a commodity is equal to the quantity supplied at a particular price.

At this point, the market has no tendency to change because buyers and sellers agree on the quantity and price.

In simple words, market equilibrium occurs when demand equals supply.

$$Qd = Qs$$

Where:

- (Qd) = Quantity demanded
- (Qs) = Quantity supplied

Market Equilibrium Schedule

Consider the following demand and supply schedule for a product.

Market Equilibrium Schedule

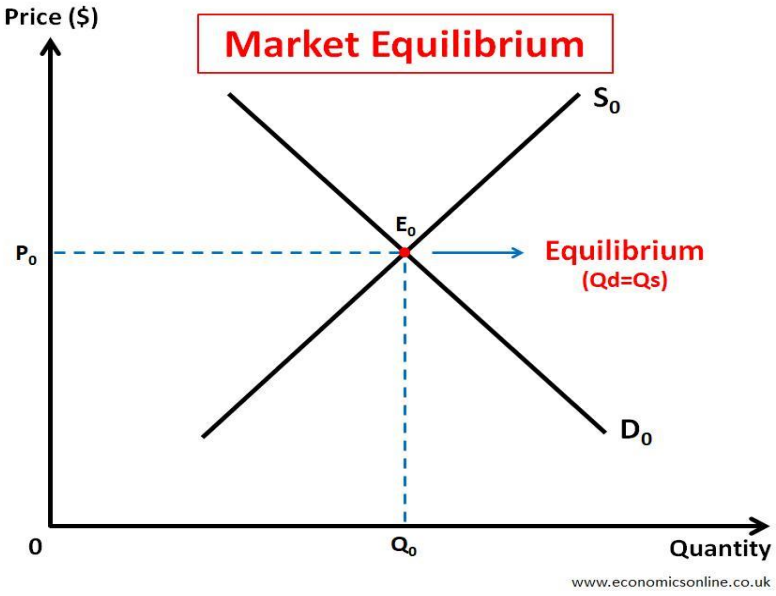
Consider the following demand and supply schedule for a product.

Price (₹)	Quantity demanded	Quantity supplied
10	100	20
20	80	40
30	60	60
40	40	80
50	20	100

At ₹30:

- Quantity demanded = 60 units
- Quantity supplied = 60 units

Therefore, ₹30 is the equilibrium price, and 60 units is the equilibrium quantity.



UNIT-III

THEORY OF PRODUCTION AND COST ANALYSIS

Samuelson define the production function as "the technical relationship which reveals the maximum amount of output capable of being produced by each and every set of inputs"

Michael define production function as "that function which defines the maximum amount of output that can be produced with a given set of inputs".

The production function expresses a functional relationship between physical inputs and physical outputs of a firm at any particular time period. The output is thus a function of inputs. Mathematically production function can be written as

$$Q = F (L1, L2, C, O, T)$$

Where Q is the quantity of production, F explains the functions, that is, the type of relation between inputs and outputs, L1, L2, C, O, T refer to land, labour, capital, organization and technology respectively. These inputs have been taken in conventional terms. In reality, material also can be included in a set of inputs.

A manufacturer has to make a choice of the production function by considering his technical knowledge, the process of various factors of production and his efficiency level to manage. He should not only select the factors of production but also should work out the different permutations and combinations which will mean lower cost of inputs for a given level of production.

In case of an agricultural product, increasing the other factors of production can increase the production, but beyond a point, increase output can be had only with increased use of agricultural land, investment in land forms a significant portion of the total cost of production for output, whereas, in the case of the software industry, other factor such as technology, capital management and others become significant. With change in industry and the requirements the production function also needs to be modified to suit to the situation.

Production Function with One Variable Input

The laws of returns states that when at least one factor of production is fixed or factor input is fixed and when all other factors are varied, the total output in the initial stages will increase at an increasing rate, and after reaching certain level or output the total output will increase at declining rate. If variable factor inputs are added further to the fixed factor input, the total output may decline. This law is of universal

nature and it proved to be true in agriculture and industry also. The law of returns is also called the law of variable proportions or the law of diminishing returns.

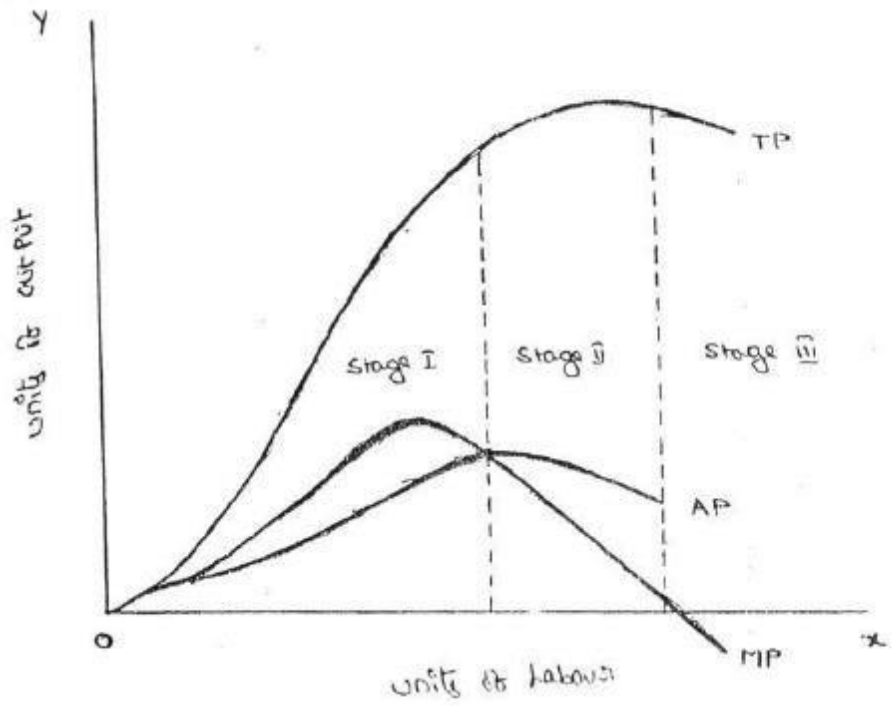
Definition According to G. Stigler

"If equal increments of one input are added, the inputs of other production services being held constant, beyond a certain point the resulting increments of product will decrease i.e. the marginal product will diminish".

According to F. Benham

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

Units of labour	Total production(tp)	Marginal Product(mp)	Average Product(ap)	Stages
0	0	0	0	Stages 1
1	10	10	10	
2	22	12	11	
3	33	11	11	Stages 2
4	40	7	10	
5	45	5	9	
6	48	3	8	Stages 3
7	48	0	6.85	
8	45	-3	5.62	



From the above graph the law of variable proportions operates in three stages. In the first stage, total product increases at an increasing rate. The marginal product in this stage increases at an increasing rate resulting in a greater increase in total product. The average product also increases.

This stage continues up to the point where average product is equal to marginal product. The law of increasing returns is in operation at this stage. The law of diminishing returns starts operating from the second stage awards. At the second stage, total product increases only at a diminishing rate. The average product also declines. The second stage comes to an end where total product becomes maximum and marginal product becomes zero. The marginal product becomes negative in the third stage. So, the total product also declines. The average product continues to decline.

Production Function with Two Variable Inputs and Laws Returns

Production process that requires two inputs, capital and labour (L) to produce a given output(Q). There could be more than two inputs in a real-life situation, but for a simple analysis, we restrict the number of inputs to two only. In other words, the production function based on two inputs can be expressed as

$Q = f(C, L)$

Where c= capital, L = labour,

Normally, both capital and labour are required to produce a product. To some extent, these two inputs can be substituted for each other. Hence the producer may choose any combination of labour and capital that gives him the required number of units of output, for any one combination of labour and capital out

of several such combinations. The alternative combinations of labour and capital yielding a given level of output are such that if the use of one factor input is increased, that of another will decrease and vice versa. However, the units of an input foregone to get one unit of the other input changes, depends upon the degree of substitutability between the two input factors, based on the techniques or technology used, the degree of substitutability may vary.

LAW OF PRODUCTION:

Production analysis in economics theory considers two types of input-output relationships.

1. When quantities of certain inputs, are fixed and others are variable and
2. When all inputs are variable.

These two types of relationships have been explained in the form of laws.

i) Law of variable proportions

ii) ii) Law of returns to scale

I. Law of variable proportions: The law of variable proportions which is a new name given to old classical concept of "Law of diminishing returns has played a vital role in the modern economics theory. Assume that a firms production function consists of fixed quantities of all inputs (land, equipment, etc.) except labour which is a variable input when the firm expands output by employing more and more labour it alters the proportion between fixed and the variable inputs. The law can be stated as follows:

"When total output or production of a commodity is increased by adding units of a variable input while the quantities of other inputs are held constant, the increase in total production becomes after some point, smaller and smaller".

LAW OF RETURNS TO SCALE

There are three laws of returns governing production function. They are

Law of increasing returns to scale: This law states that the volume of output keeps on increasing with every increase in the inputs, where a given increase in inputs leads to a more than proportionate increase in the output, the law of increasing returns to scale is said to operate. We can introduce division of labour and other technological means to increase production. Hence, the total product increases at an increasing rate.

Law of constant returns to scale: When the scope for division of labour gets restricted, the rate of increase in the total output remains constant, the law of constant returns to scale is said to operate, this law states that the rate of increase/decrease in volume of output is same to that of rate of increase/decrease in inputs.

Law of decreasing returns to scale: Where the proportionate increase in the inputs does not lead to equivalent increase in output, the output increases at a decreasing rate, the law of decreasing returns to scale is said to operate. This results in higher average cost per unit.

These laws can be illustrated with an example of agricultural land. Take one acre of land. If you till the land well with adequate bags of fertilizers and sow good quality seeds, the volume of output increases the following table illustrates further

Capital (in units)	Labor(in units)	% of increase in both inputs	Output (in units)	% of increase in output	Law applicable
1	3	---	---	---	---
2	6	100	120	140	Law of increase returns to scale
4	12	100	240	100	Law of constant returns to scale
8	24	100	360	50	Law of decrease returns to scale

INTERNAL AND EXTERNAL ECONOMIES OF SCALE

INTERNAL ECONOMIES refer to the economies introduction costs which accrue to the firm alone when it expands its output. The internal economies occur as a result of increase in the scale of production.

1. Managerial Economics: as the firm expands, the firm needs qualified managerial personnel to handle each of its functions marketing, finance, production, human resources and others in a professional way. Functional specialization ensures minimum wastage and lowers the cost of production in the long –run.

2.Commercial Economics: the transaction of buying and selling raw material and other operating supplies such as spares and so on will be rapid and the volume of each transaction also grows as the firm grows, there could be cheaper savings in the procurement, transportation and storage cost, this will lead to lower costs and increased profits. c. Financial Economics: The large firm is able to secure the necessary finances either for block capital purposes or for working capital needs more easily and cheaply. It can barrow from the public, banks and other financial institutions at relatively cheaper rates. It is in this way that a large firm reaps financial economies.

3.Technical Economies: Technical economies arise to a firm from the use of better machines and superior techniques of production. As a result, production increases and per unit cost of production falls.

A large firm, which employs costly and superior plant and equipment, enjoys a technical superiority over a small firm. Another technical economy lies in the mechanical advantage of using large machines. The cost of operating large machines is less than that of operating mall machine. More over a larger firm is able to reduce it's per unit cost of production by linking the various processes of production. Technical economies may also be associated when the large firm is able to utilize all its waste materials for the development of by-products industry. Scope for specialization is also available in a large firm. This increases the productive capacity of the firm and reduces the unit cost of production.

4.Marketing Economies: The large firm reaps marketing or commercial economies in buying its requirements and in selling its final products. The large firm generally has a separate marketing department. It can buy and sell on behalf of the firm, when the market trends are more favorable. In the matter of buying they could enjoy advantages like preferential treatment, transport concessions, cheap credit, prompt delivery and fine relation with dealers. Similarly, it sells its products more effectively for a higher margin of profit.

5.Risk Bearing Economies: The large firm produces many commodities and serves wider areas. It is, therefore, able to absorb any shock for its existence. For example, during business depression, the prices fall for every firm. There is also a possibility for market fluctuations in a particular product of the firm. Under such circumstances the risk bearing economies or survival economies help the bigger firm to survive business crisis.

6.Economics of Larger Dimension: large – scale production is required to take advantage of bigger size plant and equipment. For example, the cost of a 1.00.000 units' capacity plant will not be double that of 50.000 units capacity plant. Likewise, the cost of a 10.000 ton oil tanker will not be double that of a 5000 ton oil tanker. Engineers go by what is called two by three rule wherein when the volume is increase by 100%, the material required will increase only by two – thirds. Technical economies are available only from large size, improved methods of production processes and when the products are standardized.

7.Economics Of Research And Development: large organizations such as Dr.Reddy's labs, Hindustan Lever spend heavily on research and development and bring out several innovative products. Only such firms with a strong research and development base can cope with competition globally.

EXTERNAL ECONOMICS:

External economics refer to all the firms in the industry, because of growth of the industry as a whole or because of growth of ancillary industries, external economic benefit all the firms in the industry as the

industry expands. This will lead to lowering the cost of production and thereby increasing the profitability. The external economics can be grouped under three types:

1.Economies of Concentration: When an industry is concentrated in a particular area, all the member firms reap some common economies like skilled labour, improved means of transport and communications, banking and financial services, supply of power and benefits from subsidiaries. All these facilities tend to lower the unit cost of production of all the firms in the industry.

2.Economics of Research and Development: all the firms can pool resources to finance research and development activities and thus share the benefits of research. There could be a common facility to shares journals, newspapers and other valuable reference material of common interest.

3.Economics of Welfare: there could be common facilities such as canteen, industrial housing, community halls, schools and colleges, employment bureau, hospitals and so on, which can be used in common by the employees in the whole industry.

DISECONOMIES OF LARGE SCALE PRODUCTION

Internal and external diseconomies are the limits to large-scale production. It is possible that expansion of a firm's output may lead to rise in costs and thus result diseconomies instead of economies. When a firm expands beyond proper limits, it is beyond the capacity of the manager to manage it efficiently. This is an example of an internal diseconomy. In the same manner, the expansion of an industry may result in diseconomies, which may be called external diseconomies. Employment of additional factors of production becomes less efficient and they are obtained at a higher cost. It is in this way that external diseconomies result as an industry expands. The major diseconomies of large-scale production are discussed below:

Internal Diseconomies:

A). Financial Diseconomies: For expanding business, the entrepreneur needs finance. But finance may not be easily available in the required amount at the appropriate time. Lack of finance retards the production plans thereby increasing costs of the firm.

B). Managerial diseconomies:

There are difficulties of large-scale management. Supervision becomes a difficult job. Workers do not work efficiently, wastages arise, decision-making becomes difficult, coordination between workers and management disappears and production costs increase.

C). Marketing Diseconomies:

As business is expanded, prices of the factors of production will rise. The cost will therefore rise. Raw materials may not be available in sufficient quantities due to their scarcities. Additional output may depress the price in the market. The demand for the products may fall as a result of changes in tastes and preferences of the people. Hence cost will exceed the revenue.

D). Technical Diseconomies:

There is a limit to the division of labour and splitting down of production p0rocesses. The firm may fail to operate its plant to its maximum capacity. As a result cost per unit increases. Internal diseconomies follow.

E). Diseconomies of Risk-taking:

As the scale of production of a firm expands risks also increase with it. Wrong decision by the management may adversely affect production. In large firms are affected by any disaster, natural or human, the economy will be put to strains.

External Diseconomies:

When many firm get located at a particular place, the costs of transportation increases due to congestion. The firms have to face considerable delays in getting raw materials and sending finished products to the marketing centers. The localization of industries may lead to scarcity of raw material, shortage of various factors of production like labour and capital, shortage of power, finance and equipments. All such external diseconomies tend to raise cost per unit.

UNIT-4

MARKET STRUCTURES & MARKET FAILURES

1. Market Power & Basis for Classification

In microeconomics, market power refers to the ability of a firm (or a group of firms) to raise and maintain price above the level that would prevail under perfect competition. High market power indicates pricing control, price-making ability, and substantial influence over total industry output and supply chains.

1.1 Determinants & Classification Criteria

Economists classify market structures and evaluate market power based on six fundamental criteria:

1. Number of Buyers and Sellers: The number of sellers determines individual market concentration and individual firm leverage.

2. Nature of the Product: Homogeneous products create price-taker environments, whereas differentiated products grant firms pricing power.

3. Entry and Exit Barriers: High structural, legal, or technological barriers restrict competitive entries and sustain market dominance.

4. Information Transparency: Perfect market transparency minimizes price discrimination, whereas asymmetric information increases firm power.

5. Price Elasticity of Demand: Inelastic demand grants firms leverage to increase prices without experiencing a steep drop in sales volume.

6. Control over Inputs & Tech: Control over essential raw materials or proprietary tech creates natural competitive advantages.

Quantitative Measures of Market Power

A. Lerner Index of Monopoly Power: Calculated as L = (P - MC) / P. Ranges from 0 (perfect competition) to 1 (pure monopoly).

B. Herfindahl-Hirschman Index (HHI): Calculated as the sum of squared market shares (HHI = sum(S_i^2)). Markets with HHI > 2,500 are considered highly concentrated.

C. Concentration Ratio (CRn): Measures aggregate market share held by the top n firms (e.g., CR4 > 60% indicates oligopoly).

Kinds of Competitive Markets

Markets exist on a spectrum ranging from absolute competition to absolute monopoly.

Comparative Market Structure Matrix

Market Type	No. of Sellers	Product Nature	Entry Barriers	Pricing Power	Example
Perfect Competition	Very Many	Homogeneous	None	Price Taker (None)	Agriculture, Forex
Monopolistic Competition	Many	Differentiated	Low / Free	Slight / Limited	Restaurants, Retail
Oligopoly	Few Dominant	Identical or Differentiated	High Barriers	Interdependent	Automobiles, Telecom
Monopoly	Single Firm	Unique (No Substitutes)	Blocked / Very High	Price Maker	Utilities, Railways

Price and Output Decisions in Competitive Markets

Details profit maximization conditions in both short-run and long-run competitive settings.

Profit Maximization Rule

Profit Maximization Condition: A firm maximizes profit where Marginal Revenue equals Marginal Cost (MR = MC). In perfect competition, because market price is constant for individual firms, P = MR = AR. Hence, the equilibrium condition is:

> **GOLDEN EQUILIBRIUM RULE:** *Price (P) = Marginal Revenue (MR) = Marginal Cost (MC)*

Short-Run Equilibrium: Short-Run Possibilities:

1. Supernormal Profit: P > ATC (P exceeds Average Total Cost).

2. Normal Profit: P = ATC (Break-even point).

3. Economic Loss: P < ATC but P >= AVC (Operates in short run to cover fixed costs).

4. Shutdown Condition: P < AVC (Price falls below Average Variable Cost; the firm shuts down immediately).

Long-Run Equilibrium & Efficiency

Dynamic Adjustments: Because of free entry and exit, supernormal profits attract new firms, increasing total market supply and lowering prices. Losses cause inefficient firms to exit. In long-run equilibrium:

Allocative Efficiency: P = MC ensures resources are allocated according to consumer preferences.

Productive Efficiency: Goods are produced at the lowest possible cost (minimum LRAC).

Market Failures & Government Intervention

Market failure happens when free markets fail to allocate resources efficiently, causing societal deadweight loss.

Classification of Goods

Goods are classified by Excludability and Rivalry:

1. Public Goods: Non-excludable and non-rivalrous (e.g., National Defense, Streetlights). Suffer from the Free-Rider Problem, leading to private market under-provision.

2. Social Goods: Goods provided for broader social benefits (e.g., Infrastructure, Education, Healthcare).

3. Merit Goods: Socially beneficial goods that are under-consumed due to imperfect information (e.g., Primary Education, Vaccines). Government intervenes via subsidies or mandates.

Administered Prices (Price Controls)

Price Ceiling: Legally mandated maximum price set BELOW equilibrium. Protects consumers but causes shortages, queues, and black markets.

Price Floor: Legally mandated minimum price set ABOVE equilibrium. Protects producers (e.g., Minimum Support Price - MSP, Minimum Wage) but creates market surpluses.

Externalities: Positive & Negative

Externalities are third-party costs or benefits resulting from an economic activity.

Negative Externalities (Spillover Costs)

Impact: Marginal Social Cost exceeds Marginal Private Cost (MSC > MPC). Free markets produce above the socially optimal quantity, creating a deadweight loss (e.g., Industrial Pollution, Smoking).

Positive Externalities (Spillover Benefits)

Impact: Marginal Social Benefit exceeds Marginal Private Benefit (MSB > MPB). Free markets under-produce relative to the socially optimal level (e.g., R&D, Vaccination, Education).

Policy Solutions

Pigouvian Taxes: Internalizes negative externalities by levying a tax equal to Marginal External Cost (MEC).

Pigouvian Subsidies: Subsidizes positive externality goods equal to Marginal External Benefit (MEB).

Cap-and-Trade: Sets pollution caps and allows trading of emission permits.

Coase Theorem: Private bargaining solves externalities if property rights are well-defined and transaction costs are negligible.

UNIT-5

1. National Income: Core Concepts & Accounting Aggregates

National Income measures the total monetary value of all final goods and services produced within an economy over a specific financial period (usually one fiscal year). It serves as the primary indicator of economic health, standard of living, and macro performance.

Key Aggregate Definitions

Gross Domestic Product (GDP): The total market value of all final goods and services produced within the domestic territory of a country during a year, regardless of who owns the production factors.

Gross National Product (GNP): The total market value of all final goods and services produced by normal residents of a country, regardless of where production takes place physically (GDP + Net Factor Income from Abroad).

Net Domestic Product (NDP) & Net National Product (NNP): Gross product adjusted for physical capital consumption (Depreciation). NDR = GDP - Depreciation; NNP = GNP - Depreciation.

Personal Income (PI): The actual income received by individuals and households from factor earnings and transfer payments before personal taxes.

Personal Disposable Income (DPI): The income available to households for consumption and saving after paying direct income taxes (DPI = Personal Income - Direct Taxes).

Factor Cost vs. Market Price & Nominal vs. Real GDP

Factor Cost (FC): Evaluates production based on total input costs incurred (wages, rent, interest, profit). Excludes indirect taxes and includes subsidies.

Market Price (MP): Reflects actual prices paid by consumers in the retail market. Market Price = Factor Cost + Net Indirect Taxes (NIT), where Net Indirect Taxes = Indirect Taxes - Subsidies.

Nominal GDP: Valued at current current-year market prices. Unadjusted for inflation, meaning GDP growth can be distorted by rising price levels.

Real GDP: Valued at constant base-year prices. It removes inflation distortions, reflecting true changes in physical output volume.

Circular Flow of Income

Three-Phase Cycle: Economic value flows through three interconnected phases: Production (generation of value added), Income Distribution (payment to factor inputs: wages, rent, interest, profit), and

Expenditure (disposition of income on goods and services). In a 4-sector open economy, equilibrium condition is:

Equilibrium Identity: Y = C + I + G + (X - M), where C = Private Consumption, I = Private Investment, G = Government Spending, X = Exports, M = Imports.

Methods of Calculating National Income

National Income can be calculated using three distinct economic approaches. Under standard accounting principles, all three methods yield identical results (Value Added = Income Generated = Final Expenditure).

Product / Value Added Method (Industrial Origin Method)

Concept: Measures output by calculating the net value added by each producing enterprise across primary, secondary, and tertiary sectors.

Formula: Gross Value Added (GVA) = Gross Output Value - Intermediate Consumption. Summing GVA across all sectors yields GDP at Market Price (GDP_MP).

Precautions: Avoid 'Double Counting' (counting raw materials alongside final product value) by strictly counting Value Added at each stage or counting only final goods. Exclude second-hand sales, illegal transactions, and self-consumption non-market services.

Income Method (Factor Payment Method)

Concept: Measures total factor rewards earned by resident owners of factors of production (land, labor, capital, entrepreneurship).

Formula: NDP at Factor Cost (NDP_FC) = Compensation of Employees (Wages/Salaries) + Operating Surplus (Rent + Interest + Profit) + Mixed Income of Self-Employed. To convert NDP_FC to National Income (NNP_FC), add Net Factor Income from Abroad (NFIA).

Precautions: Exclude transfer payments (pensions, scholarships, unemployment benefits) as no productive output occurs. Exclude windfall gains (lotteries, stock market capital gains). Include imputed rent of self-occupied property.

Expenditure Method (Outlay Method)

Concept: Measures total aggregate spending on final goods and services produced within the country during a given year.

Formula: GDP_MP = Private Final Consumption Expenditure (C) + Government Final Consumption Expenditure (G) + Gross Domestic Capital Formation (I) + Net Exports (X - M).

Precautions: Exclude spending on intermediate goods to prevent double counting. Exclude spending on second-hand items and pure financial assets (shares, bonds).

Calculation Method	Primary Aggregates Used	Core Formula / Output	Key Exclusion / Precaution
Product / Value Added	Gross Output minus Intermediate Input	GDP_MP = Sum of GVA across all sectors	Avoid double counting intermediate goods.
Income Method	Factor payments (Wages, Rent, Interest, Profits)	NDP_FC = CoE + Operating Surplus + Mixed Income	Exclude transfer payments and windfall gains.
Expenditure Method	Final spending by consumers, firm, govt, net exports	GDP_MP = C + I + G + (X - M)	Exclude second-hand goods & financial transfers.

Inflation: Causes, Types & Control Measures

Inflation is defined as a persistent, sustained rise in the general price level of goods and services over time, resulting in a continuous erosion of purchasing power.

Demand-Pull Inflation

Mechanism: Occurs when Aggregate Demand (AD) for goods and services in an economy exceeds Aggregate Supply (AS) at full employment capacity ('too much money chasing too few goods').

Key Drivers: Rapid growth in money supply, expansionary fiscal policy (excessive government spending), surge in private consumption/investment, rapid population growth, and high foreign export demand.

Graphical Impact: The aggregate demand curve shifts to the right along an upward-sloping aggregate supply curve, driving price levels upward.

Cost-Push Inflation

Mechanism: Occurs when production costs increase, shifting the Short-Run Aggregate Supply (SRAS) curve to the left while aggregate demand remains constant.

Key Drivers: Wage-push inflation (unions forcing wage increases above productivity), supply shocks (global oil price spikes, natural disasters), rising prices of imported raw materials, and increased corporate tax rates.

Economic Consequence: Firms pass increased unit manufacturing costs onto consumers through higher retail prices, often causing Stagflation (high inflation combined with stagnant economic growth and rising unemployment).

Comparison Dimension	Demand-Pull Inflation	Cost-Push Inflation
Root Cause	Excessive aggregate demand exceeding supply capacity.	Supply-side production cost shocks.
Curve Shift	Aggregate Demand (AD) shifts rightward.	Short-Run Aggregate Supply (SRAS) shifts leftward.
Output Effect	Real GDP initially expands or operates above potential.	Real GDP contracts, leading to potential stagflation.
Policy Remedy	Contractionary monetary & fiscal measures.	Supply-side policies, subsidies, energy cost stabilization.

Comprehensive Measures to Control Inflation

1. Monetary Policy Measures: Implemented by the Central Bank to contract money supply and credit.

a. Higher Interest Rates: Increasing policy rates (Repo Rate, Discount Rate) makes borrowing expensive, suppressing private expenditure.

b. Reserve Requirements: Raising Cash Reserve Ratio (CRR) and Statutory Liquidity Ratio (SLR) reduces commercial bank lending capacity.

c. Open Market Operations (OMO): Selling government securities in the open market absorbs excess liquidity from the financial system.

2. Fiscal Policy Measures: Implemented by the Government to reduce aggregate spending.

a. Reducing Expenditure: Cutting government non-development spending directly reduces AD.

b. Higher Taxation: Increasing direct taxes reduces disposable income, curbing consumer demand.

c. Public Borrowing: Issuing government bonds to soak up excess purchasing power.

3. Supply-Side & Administrative Measures: Improving production efficiency and stabilizing commodity prices.

Controls: Export restrictions on critical commodities and duty-free imports of essential goods; price caps/ceilings on vital commodities.

Business Cycles: Phases & Control Measures

A business cycle (or economic cycle) refers to the periodic, recurring fluctuations in overall aggregate economic activity—measured by real GDP growth—around a long-term growth trend line.

The Four Phases of a Business Cycle

1. Expansion (Prosperity / Boom): Characterized by rapid output growth, high employment, strong consumer demand, rising profits, and expanding business investment. Capacity utilization is high.

2. Peak: The upper turning point of the business cycle where real GDP reaches its maximum peak. Capacity constraints emerge, labor shortages occur, and inflation pressures build up.

3. Contraction (Recession / Downturn): Economic slowdown characterized by declining real output, falling consumer demand, inventory build-up, business cutbacks, and rising unemployment rates. A severe, prolonged contraction is termed a Recession or Depression.

4. Trough (Trough & Recovery): The lowest point of economic activity (trough). Output reaches bottom, unemployment peaks, and interest rates drop. Low costs eventually stimulate new investment, triggering the Recovery Phase back toward baseline expansion.

Phase	Real GDP Trend	Unemployment Level	Inflation Pressure
Expansion	Rising steadily above trend	Low / Falling rapidly	Moderate to High (Demand-pull)
Peak	Reaches maximum ceiling	At structural minimum	High / Overheating
Contraction	Declining / Negative growth	Rising sharply	Subdued / Deflationary risk
Trough / Recovery	Bottoms out then rebounds	Peak unemployment, then lowers	Low / Stabilizing

Measures to Control Business Cycles (Stabilization Policies)

Government and central banks employ counter-cyclical stabilization policies to smooth economic fluctuations.

1. Counter-Cyclical Monetary Policy: Central Bank adjusts interest rates and credit supply.

During Recession: Central Banks lower policy rates and buy securities to boost liquidity, encourage private investment, and stimulate spending.

During Overheating Peak: Central Banks raise policy rates and absorb excess liquidity to cool overheating demand and lower inflation.

2. Counter-Cyclical Fiscal Policy: Government uses tax policy and public expenditure to stabilize AD.

During Recession: Government increases public works spending (infrastructure) and cuts personal/corporate taxes to inject purchasing power into the economy.

During Overheating Peak: Government cuts capital expenditure and increases tax rates to draw excess spending power out of the market.

3. Automatic Stabilizers: Automatic mechanisms (e.g., progressive income tax systems, unemployment compensation) that naturally expand expenditure during downturns and contract it during booms without active policy intervention.