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# UNIT 1 PTRODUCTION TO MANAGERIAL ECONOMICS

# Objectives

After studying this unit, learners will be able to:

- Understand the basic meaning of Managerial Economics and how do we can define it
- Know the Scope of using managerial economics principles
- Understand the significance and its importance of Managerial Economics
- Understand the advantages of using the principles of Managerial Economics

Structure

- 1.1: Introduction
- 1.2: Meaning and Definition of Managerial Economics
- 1.3: Nature of Managerial Economics
- 1.4: Scope of Managerial Economics
- 1.5: Significance of Managerial Economics
- 1.6: Advantages of Managerial Economics
- 1.7: Managerial Economics and Linkage with other Disciplines
- 1.8: Unit Summary
- 1.9: Check your Progress
- 1.10: Reference/ Further Reading Materials

# **1.1 INTRODUCTION**

Every management activity raises the question of whether a project ultimately yields a positive net economic benefit for society, while managers regularly face challenges related to maximizing production and delivering quality services at a reasonable cost. Moreover, including determining supply quantities, pricing, decisions on in-house production versus outsourcing, and figuring out how much to produce to achieve desired profits. For all these challenges, a fundamental understanding of how to look for answers to managing issues is provided by managerial economics. Managerial economics is a branch of economics that connects with other disciplines to develop theories and concepts for effective managerial decision-making. Before delving into managerial economics, let's first understand what economics is and its connection to managerial economics.

Economics tells us how to make choice in the face of scarcity. It is also about understanding how individuals, businesses and governments allocate limited resources to satisfy their unlimited wants and needs. All of us engage in economic activities by earning money and spending it to meet our needs like food, clothing, and shelter. The distribution of limited resources among conflicting goals is the main focus. According to Adam Smith who also known as the father of Economics in his book "An Enquiry into the Nature and Causes of Wealth of Nations" defined economics as the science of wealth. According to him economics is the nature and causes of wealth of nations.

J.B. Say in France defined economics as the study of the laws which govern wealth.

According to F.A. Walker in America, economics is that body of knowledge which relates to wealth.

According to Alfred Marshall in his book entitled "Principles of Economics" economics is the study of mankind in the ordinary business of life, it examines that part of individual and social action which is most closely connected with the attainment and the use of the material requisite of well-being.

Economics is broadly divided into two categories- Microeconomics and Macroeconomics.

Microeconomics- The term micro means "small". Microeconomics studies the behaviour of individuals and firms in making decisions regarding the allocation of scare resources and the interactions among these individuals firms. Moreover it focuses on the study of the individual markets, sectors or industries.

Macroeconomics- The term macro means "large". Macroeconomics deals with the performance, structure behaviour and decision making of an economy as a whole. Moreover, it incuses on broad economic issues such as economic growth, inflation, unemployment and economic cycles.

By understanding both individual firm behavior and the broader economic context, managers can make informed decisions that maximize their organization short term and long term success. Moreover details about economics will study in unit 2.

# 1.2 REANING AND DEFINITION OF MANAGERIAL ECONOMICS

The strong connection between management and economic theory has given rise to managerial economics. Let us take an example- What does MNCs like Coca-Cola, GE, Toyota and Maruti Suzuki have in common? They have improved their profitability by applying the ideas of managerial economics. Managerial economics focuses on how businesses operate and how other decision-makers ought to make choices. As managerial economics refers to the firm's decision making process, so it can also called as "Industrial Economics" or "Business Economics".

# Meaning and Definition of Managerial Economics

The use of economic theory and decision-making instruments to assist organizations in effectively achieving their objectives known as managerial economics. It combines economic theory with business practices to facilitate decision-making and future planning by the management. This field also focuses on the production, distribution, and consumption of goods and services. It is also a branch of applied economics as it provides a systematic and logical approach to business decisions, influencing both short-term and long-term planning.

While there isn't a single, definitive economist credited with defining managerial economics, several prominent economists have contributed to its development and popularization.

Among them, **Joel Dean** is often recognized as a key figure in shaping the field. He published a seminal book titled "Managerial Economics" in 1951, which significantly influenced the understanding and application of economic principles in business decision-making.

Other notable economists who have contributed to the field of managerial economics include:

- E. F. Brigham and J. L. Pappas: They provided a widely accepted definition of managerial economics as "the application of economic theory and methodology to business administration practice."
- Milton H. Spencer and Louis Siegel man: Their definition emphasized combining economic theory with business operations to help with decision-making and long-term planning.

These economists, along with many others, have helped establish managerial economics as a valuable tool for basinesses to make informed decisions and optimize their operations.

So we can define managerial economics as it is a branch of economics that applies economic theory and methods to business and organizational decision-making and helps managers make informed decisions by combining microeconomic and macroeconomic principles to optimize resource allocation, enhance efficiency, and achieve company objectives.

# **1.3 NATURE PF MANAGERIAL ECONOMICS**

Managerial economics emphasizes that decisions should be continually improved through feedback, data analysis, and regular assessments to adapt to evolving situations.

**a. Interdisciplinary:** By integrating insights from economics, management, mathematics, statistics, and behavioural sciences, this interdisciplinary approach fosters a thorough understanding of business challenges and promotes the creation of effective solutions.

**b. Microeconomic Focus:** Managerial economics emphasizes microeconomic principles by studying how individual firms and consumers behave, particularly in terms of resource allocation, pricing strategies, and production choices to achieve their goals.

**c. Practical Orientation:** Managerial economics is both practical and centered on addressing real-world business challenges, equipping managers with tools and techniques to make informed decisions and enhance their operations.

**d. Decision-Oriented:** It focuses on organizational decision-making, enabling managers to assess options, weigh potential outcomes, and select the optimal path forward.

e. Normative Perspective: Managerial economics often involves making normative statements, which suggest what ought to be done. It provides recommendations and guidelines for making optimal decisions based on economic principles.

**f.** Use of Economic Tools and Techniques: It utilizes various economic tools, including demand and cost analysis, production theory, market

structure analysis, and game theory, to evaluate business challenges and support informed decision-making.

**g. Dynamic and Evolving:** The business environment is constantly changing, and managerial economics needs to adapt to these changes. It incorporates new economic theories, methodologies, and technological advancements to remain relevant and effective.

In short managerial economics is a practical, decision-focused field that uses microeconomic principles to address real-world challenges, emphasizing that informed, data-driven choices lead to improved organizational results.

# **1.4 Prope of Managerial Economics**

From a firm's perspective, managerial economics is essentially the application of economic principles to address choices and the distribution of limited resources. Managerial economics focuses on how a firm allocates its resources among various activities while applying economic principles to make informed managerial decisions.

The scope of managerial economics is quite broad, encompassing various aspects of business decision-making. Here are some key areas within its scope:

**A. Demand Analysis and Forecasting:** A business firm is an entity that converts resources into marketable goods for sale. So, a major part of managerial decision making depends on accurate estimates of demand. Demand analysis is an important part of management economics. It requires being aware of the aspects that drive consumer behavior and how they impact the demand for a commodity or service. Businesses can make well-informed decisions on production, pricing, marketing, and inventory management by analyzing demand.

Factors that affect demand are:

- Price of good
- Price of related goods
- Income of consumers
- Tastes and preferences
- Expectations of future prices
- Government policies

Importance of Demand Analysis

- Pricing Decisions: Understanding demand elasticity helps businesses set optimal prices.
- Production Planning: Accurate demand forecasts help in efficient production planning.
- Inventory Management: Proper demand analysis helps in maintaining optimal inventory levels.
- Marketing Strategies: Effective marketing strategies can be developed based on demand analysis.
- Investment Decisions: Demand analysis helps in evaluating investment opportunities.

Techniques for Demand Forecasting

- Survey Method: Directly asking consumers about their future purchase intentions.
- Statistical Methods: Using historical data to predict future trends.
- Expert Opinion Method: Consulting experts to get their insights on future demand.
- Market Experimentation: Conducting experiments to test different pricing strategies and marketing campaigns.

Businesses can make well-informed decisions that result in higher profitability and market success by conducting an efficient demand analysis.

**B.** Production and Cost Analysis: A key topic in managerial economics is production and cost analysis, which enables companies to comprehend the connection between inputs and outputs and make well-informed choices regarding pricing, production, and resource allocation.

Production analysis focuses on how inputs (like labour, capital, and raw materials) are transformed into outputs (goods or services). Key concepts include: production function, law of diminishing returns, returns to scale.

Cost analysis assists companies in comprehending the different expenses related to production, including both explicit costs (like wages and rent) and implicit costs (like the opportunity cost of using owner-supplied resources). Key cost concepts include: short run costs and long run costs.

**C. Market Structure Analysis**: An essential component of managerial economics is market structure analysis, which aids companies in comprehending the competitive environment they work in and informing

their strategic choices. By analysing market structure, managers can make informed decisions about pricing, product strategy, advertising, and investment. They can also anticipate the behaviour of competitors and adjust their strategies accordingly.

**D. Pricing Decisions:** Pricing significantly impact a firm's revenue, profitability and market position. Effective pricing strategies require a careful consideration of various factors like cost of production, demand and elasticity, competition, consumer perception of value and government regulations. Businesses can maximize their income, profitability, and market position by carefully weighing these variables and implementing suitable pricing strategies.

**E. Investment Decisions**: Investment decision involves allocating resources to projects or assets that are expected to generate future returns. These decisions significantly impact a firm's long-term growth and profitability. There are few factors that affect the investment decisions such as cost of capital, risk tolerance, strategic fit, regulatory environment and economic conditions. By carefully reviewing investment offers using these strategies and considering the essential criteria, firms can make educated decisions that contribute to their long-term success.

**F. Risk and Uncertainty Analysis:** Risk and uncertainties analysis is one of the integral parts which significantly influence decision making process in any organisation. Through this, the basinesses can make informed choices and mitigate potential negative outcomes. There are few techniques for analysing risk and uncertainty:

a. Examining how changes in key variables such as sales volume, costs and interest rates affect the outcome of a decision

b. Eveloping multiple scenarios, each with different assumptions about key variables and analysing the potential outcomes under each scenario to assess the range of possible results

c. Visualizing decision-making processes and their potential outcomes

d. Considering the flexibility and strategic value of investment decisions and evaluating options to defer, abandon or expand a project based on future information

**G. Government Policy Analysis:** Government policies significantly impact the business environment, influencing decisions related to production, pricing, investment and market entry/exit. Managerial economics involves analysing these policies to understand their implications and strategize accordingly. It is important for the managers to analyse fiscal policy, monetary policy, trade policy and regulatory policy. Moreover, to effectively analyse government policies, manager should consider policy objectives, policy instruments, impact on market structure, impact on cost and revenue and strategic response.

# **1.5 SIGNIFICANCE OF MANAGERIAL ECONOMICS**

The strength of managerial economics is its capacity to reconcile economic theory with real-world corporate management. It provides a framework for managers to make informed decisions by applying economic principles to real world business problems.

Here are some key reasons why managerial economics is significant:

A. Decision Support: Managerial economics offers a systematic approach to decision making, helping managers analyse complex market dynamics and to identify the optimal course of action. By understanding the risks and uncertainty managers can make informed decisions to minimize potential loss.

**B. Resource Optimization**: It streamlines operations to reduce waste and optimise resource use. By weighing the costs and benefits of different options, managers can make decisions that improve the overall efficiency of the organization.

**C. Strategic Planning:** Grasping demand trends enables companies to optimize their production, inventory, and marketing, while competitor analysis helps managers formulate strategies for a competitive advantage, with managerial economics offering essential tools for evaluating investments and risks.

**D. Pricing Strategies:** By analysing demand elasticity, cost structures, and competition, businesses can effectively determine optimal pricing strategies, including cost-based, value-based, and competitive pricing, through the principles of managerial economics.

**E.** Policy Formulation: By analysing government policies like taxes and regulations, managers can create effective internal strategies for pricing, production, and resource allocation based on a solid understanding of economic principles.

**1.6 ADVANTAGES OF MANAGERIAL ECONOMICS** 

Decision making is a crucial yet challenging aspect of modern business management, as managers are constantly required to navigate numerous decisions throughout their careers. Managerial economics offers a wide range of advantages. The key advantages of managerial economics.

**A. Informed decision making:** Managerial economics provides managers with essential analytical tools to effectively allocate resources, enhance profit margins, and make informed decisions by systematically evaluating various economic factors.

**B. Efficient Resource Allocation:** It helps in the optimal allocation of scarce resources, ensuring that businesses operate efficiently and effectively. Efficient use of scarce resources, such as production programming and transportation, is crucial for achieving optimal results, with managers within a firm determining resource allocation while the market governs these decisions externally.

**C. Enhanced Profitability:** Business firms primarily aim to generate profits, which are seen as the main indicator of success over time, but due to uncertainty, managing and measuring profits becomes complex, involving aspects like understanding profit, developing profit policies, and using techniques such as break-even analysis. Businesses can reduce expenses and increase revenues by comprehending consumer behavior and market trends.

**D.** Competitive Advantages: It a strategy that gives a company an edge over its competitors, allowing it to increase profit margins, gain sales, or both. It's achieved by providing greater value to customers than competitors. So businesses that effectively apply managerial economics principles can gain a competitive edge in the market by making better-informed decisions and adapting to changes more quickly.

**E. Strategic Planning**: Managerial economics assists in developing longterm strategies by analysing market trends, competitive landscapes, and economic forecasts. A strategic plan outlines a business's direction, sets achievable goals aligned with its vision, enhances decision-making and efficiency, drives financial performance, facilitates risk management, boosts competitiveness, fosters measurable success, and encourages innovation for a competitive edge.

**F. Better Understanding the Market**: Managerial economics provides a powerful lens to dissect and understand the market dynamics that shape business decisions. Businesses can obtain important insights into customer

behavior, competitive environments, and market trends by utilizing economic principles and analytical tools.

# 1.7 MANAGERIAL ECONOMICS AND LINKAGE WITH OTHER DISCIPLINES

Managerial economics, a branch of economics, connects with various disciplines like statistics, mathematics, accounting, and operations research to develop theories and concepts for informed managerial decision-making.

**i. Managerial Economics and Economics:** Managerial economics applies economic theories and concepts to real world business problems. It bridges the gap between economic theory and business practice. Whereas economics is a vast field that studies the production, distribution and consumption of goods and services. It encompasses both microeconomics and macroeconomics.

Microeconomics- The term micro means "small". Microeconomics studies the behaviour of individuals and firms in making decisions regarding the allocation of scare resources and the interactions among these individuals firms. Moreover it focuses on the study of the individual markets, sectors or industries.

Macroeconomics- The term macro means "large". Macroeconomics weals with the performance, structure, behaviour and decision making of an economy as a whole. Moreover, it focuses on broad economic issues such as economic growth, inflation, unemployment and economic cycles.

**ii. Theory of Decision Making:** Decision theory, a field combining probability, economics, and analytic philosophy, focuses on prescribing optimal decision-making for rational agents under uncertainty, contrasting with cognitive and behavioural sciences that describe actual decision-making processes.

Normative decision theory focuses on identifying optimal decisions based on a fully rational ideal decision maker, while its practical application, known as decision analysis, seeks to provide tools and methodologies to aid individuals in making better choices.

Descriptive decision theory focuses on how individuals make choices in practice, aligning closely with psychology and behavioural sciences while contrasting with normative decision theory.

Prescriptive decision theory integrates aspects of both normative and descriptive theories by offering methods to enhance decision-making without relying on the assumption of ideal decision makers.

**iii. Operation Kesearch:** Operations Research (OR) and Managerial Economics are interrelated disciplines that offer complementary methodologies with OR emphasizing quantitative analysis and optimization to enhance decision-making, ultimately boosting efficiency and profitability for managers. OR utilizes mathematical models and simulation techniques to tackle real-world challenges, optimize resource allocation and analyse complex systems enhancing decision-making in areas such as production, transportation, and pricing strategies. OR also examines how decision-makers, like market competitors interact strategically aiding managers in grasping the repercussions of their choices and crafting impactful strategies.

**iv. Statistics:** For managerial economists, statistics is essential as it equips them with the quantitative basis necessary for informed decision-making and grasping complex economic trends. By using tools like averages, measures of dispersion, correlation, regression, time series, and probability, statistics offers a variety of methods for analyzing cause-and-effect relationships, empowering managers to manage risk and uncertainty in the workplace and strengthening the fundamental ideas of managerial economics.

**v. Accounting:** Accounting principles form the essential basis for financial data, vital for effective managerial decision-making. Acknowledging earnings and outlays as they occur instead of cash exchange ensures accurate cost analysis, profit measurement and forecasting of future cash flows, while matching expenses to their revenue, enabling precise profit margins and investment returns all while maintaining a careful approach to financial reporting. The accountant supplies crucial financial data on costs, revenues, and profits that the managerial economist uses for informed decision-making and strategic planning.

vi. Mathematics: Mathematics is essential in managerial economics as it provides analytical tools like calculus for determining optimal production and pricing levels, linear equations for modeling economic relationships and statistical methods for interpreting data, enabling managers to make informed decisions and maximize profits and analysing. Analysing involves understanding consumer behaviour and demand, evaluating costs, optimizing production, implementing pricing strategies for revenue maximization, assessing investment opportunities, evaluating risks, and examining market trends. vi. Organizational Behaviour: Organizational behaviour and managerial economics, although different disciplines, converge on vital aspects like understanding human behaviour and motivation, which are essential for making sound business decisions. Some organisational behaviour principles that is relevant to managerial economics:

a. Motivation and Incentives: Understanding how internal and external motivators work together can guide the creation of effective incentive structures that enhance employee performance and inform decisions on compensation, promotions, and recognition.

b. Leadership and Decision Making: Various leadership styles impact employee morale, motivation, and performance, and recognizing cognitive biases can enable managers to make more informed decisions.

c. Organisational Culture and Work Life Balance: The collective values and workplace environment of an organization greatly influence employee behaviour, satisfaction, and productivity, so designing meaningful jobs and promoting work-life balance are essential for enhancing performance.

d. Team work: Acknowledging how group dynamics influence productivity and creativity enables managers to build strong teams and effectively address conflicts to sustain a positive workplace.

By these organizational behaviour principles enables managers to improve decision-making regarding resource allocation, pricing, and organizational structure, resulting in more effective and sustainable business practices.

## **1.8 UNIT SUMMARY**

In order to support well-informed decision-making and eventually contribute to the prosperity and sustainability of enterprises, managerial economics integrates economic theory with business practices. It involves using economic theory to address management issues in commercial contexts. Managerial economics is also essential for organizations as it enables managers to analyse both internal and external environments, forecast consumer behaviour, and implement effective policies to ensure sustainable growth and profitability through strategic decision-making and resource allocation.

# **1.9 CHECK YOUR PROGRESS**

# **Multiple-Choice Questions (1 Mark Each)**

- Which of the following best defines managerial economics?

   a) The study of individual consumer behavior
   b) The application of economic theory and decision-making tools to business practices
   c) A theoretical approach to policymaking
  - d) None of the above
- 2. Who is recognized for publishing the seminal book *Managerial Economics* in 1951?
  a) E. F. Brigham
  b) Milton H. Spencer
  - c) Joel Dean
  - d) Louis Siegelman
- 3. Which of the following is **not** a characteristic of managerial economics?
  - a) Microeconomic focus
  - b) Interdisciplinary approach
  - c) Purely theoretical orientation
  - d) Normative perspective
- 4. Demand analysis primarily involves understanding:
  - a) Market structure
  - b) Factors affecting consumer behavior
  - c) Government policies
  - d) Accounting principles
- 5. What does "normative perspective" in managerial economics imply?
  - a) Focus on what is happening in the market
  - b) Analysis of ideal decision-making processes
  - c) Recommendations on what ought to be done
  - d) Study of government policy impacts
- 6. The term "Industrial Economics" is another name for:
  - a) Macroeconomics
  - b) Managerial economics
  - c) Organizational behavior
  - d) Financial accounting
- 7. Which technique is **not** a part of demand forecasting?
  - a) Market experimentation
  - b) Survey method
  - c) Regression analysis
  - d) Break-even analysis
- 8. Managerial economics is **not** directly related to: a) Statistics
  - b) Operations research

- c) Literary studies
- d) Organizational behavior
- 9. Which of the following tools is used in managerial economics?
  - a) SWOT analysis
  - b) Demand and cost analysis
  - c) Six Sigma methodology
  - d) Brainstorming
- 10. What is the focus of microeconomics within managerial economics?
  - a) Analysis of government fiscal policies
  - b) Study of aggregate economic indicators
  - c) Behavior of individual firms and consumers
  - d) None of the above

### Short Answer Questions (2 Marks Each)

- 1. Define managerial economics in simple terms.
- 2. List two economists who contributed to defining managerial economics and one key idea they introduced.
- 3. Explain the significance of the interdisciplinary nature of managerial economics.
- 4. What is the role of demand analysis in managerial economics?
- 5. Identify two techniques of demand forecasting.
- 6. What is the importance of using economic tools in managerial decision-making?
- 7. Differentiate between microeconomics and macroeconomics in the optext of managerial economics.
- 8. What is meant by the "normative perspective" in managerial economics?
- 9. Mention two areas covered under the scope of managerial economics.
- 10. Why Managerial Economics is considered dynamic and evolving?

# **Medium-Length Questions (5 Marks Each)**

- 1. Discuss how managerial economics bridges the gap between theory and business practices with an example.
- 2. Explain the practical orientation of managerial economics and its relevance in modern business.
- 3. Describe the characteristics of managerial economics that make it decision-oriented.
- 4. Analyze the significance of Joel Dean's contributions to the field of managerial economics.
- 5. How does managerial economics integrate with statistics to improve business decision-making?

- 6. Discuss the factors that influence demand analysis and their impact on managerial decisions.
- 7. Examine the role of production and cost analysis in managerial economics.
- 8. How does market structure analysis help businesses make strategic decisions?
- 9. Evaluate the role of government policy analysis managerial economics.
- 10. Describe how managerial economics supports resource optimization within an organization.

### Long Answer Questions (10 Marks Each)

- 1. Elaborate on the meaning, definition, and scope of managerial economics with suitable examples.
- 2. Discuss the interdisciplinary nature of managerial economics and its linkages with other disciplines such as statistics, operations research, and organizational behavior.
- 3. Analyze the role of managerial economics in decision-making, focusing on demand analysis and forecasting techniques.
- 4. Explain the characteristics of managerial economics, emphasizing its practical and dynamic nature.
- 5. Discuss the scope of managerial economics, highlighting its application in areas such as pricing, investment, and risk analysis.
- 6. Evaluate the relevance of economic tools and techniques in solving real-world business problems. Provide examples.
- 7. How does managerial economics help managers navigate risk and uncertainty in decision-making?
- 8. Examine the significance of government policy analysis in managerial economics and its impact on business strategy.
- 9. Discuss the contribution of economists like Joel Dean, Milton H. Spencer, and E. F. Brigham to managerial economics.
- 10. Explain the role of managerial economics in strategic planning, resource allocation, and market analysis, with examples.

#### 1.10 REFERENCE/ FURTHER READING MATERIALS

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# **UNIT 2 NATURE AND SCOPE OF ECONOMICS**

#### Objectives

After studying this unit, learners will be able to:

- Understanding the scope of economics which will help to analyze everyday decisions, evaluate policies, and to think critically about global issues.
- Explore the nature of economics, discussing its dual role as both a science and an art, and how it applies to real-world problems like resource allocation and policy-making

Structure

- 2.0: Introduction
- 2.1: Meaning and Definition of Economics
- 2.2: Basic Economic Problems
- 2.3: Scope of Economics
- 2.4: Types of Economics
- 2.5: Difference between Microeconomics and Macroeconomics
- 2.6: Nature of Economics
- 2.7: Limitations of Economics
- 2.8: Unit Summary
- 2.9: Check Your Progress
- 2.10: Reference/ Further Reading Materials

#### **2.0 INTRODUCTION**

As a social science, economics is valuable for individuals, households, businesses, institutions, and government policies, yet its concepts and significance evolve with the changing social environment over time. Various interpretations of economics have developed over time, reflecting diverse social contexts and status. Economics is a crucial field of knowledge utilized across various domains including markets, finance, commerce, business, administration, planning, and government policies, regardless of the time period. Pherefore, it is essential for business managers to understand fundamental economic concepts, as this knowledge equips them

to make informed decisions that can lead to economic success, which this chapter will explore.

# 2.1 MEANING AND DEFINITION OF ECONOMICS

Economics is the study of an economy and is an essential aspect of our daily life. The term economics originates from the Greek word 'Oikonomia', meaning household management, with 'Oiko' referring to house and 'nomia' signifying management. Economics is a social science that studies the production, distribution and consumption of goods and services within different economic systems.

However different economists gave different definition of economics that reflect the different angles of economics. According to L.M Fraser the definition of economics can be classified into

(a) Wealth and welfare

(b) The scarcity of means

Wealth and welfare definitions are further classified into classical view and neo-classical view.

#### **Classical Definition of Economics**

Here are some established classical definitions of economics:

According to Adam Smith, known as father of economics defined economics as the science of wealth. He defined it as the nature and cause of wealth of nations. He defines wealth as the annual output of land and labour in society, specifically those goods and services that have exchange value.

Jean-Baptiste Say, a key figure in French economist, defined the field as the study of how wealth is produced, distributed, and consumed, emphasizing that production is the origin of wealth and introducing Say's Law, which asserts that supply generates its own demand.

F.A. Walker defined economics as the body of knowledge which relates to wealth. Walker focused on the traditional definition of economics centered on material wealth and its acquisition, but this view has since been expanded by contemporary definitions that also account for human wellbeing and social welfare.

John Stuart Mill, characterized political economy, now known as economics, as the science that identifies the laws governing societal phenomena resulting from collective human efforts to produce wealth excluding those influenced by any other goals.

J.E. Cairnes defined economics as the science which treats of the nature, causes, laws and effects of wealth. This definition, similar to others from its time, highlights wealth as a key aspect of economic study.

#### **Criticisms of the Classical Definition of Economics**

The traditional view of economics, which emphasizes the creation, distribution, and use of wealth, has formed the basis of contemporary economic theory but has faced various criticisms.

- Classical economists tended to emphasize material wealth at the expense of human well-being, social equity, and environmental sustainability, resulting in policies that favour economic growth over broader social objectives.
- Classical economists tended to view the economy as static and unchanging, overlooking its dynamic nature and the influence of technological and institutional shifts, which can obstruct our grasp of economic fluctuations and long-term trends.
- Classical economists tended to simplify human behaviour by assuming the "economic man" acts purely out of self-interest, which overlooks important psychological factors that can weaken the explanatory strength of their theories.
- Classical economists typically supported minimal government involvement in the economy, yet there are situations where such intervention is essential to correct market failures, ensure economic stability, and meet social objectives.
- Classical economists typically concentrated on goods and services production and distribution, overlooking crucial factors like finance, labour markets, and international trade, which highlight the need for a more comprehensive analysis of modern economies.

Critiques of classical economics have prompted the emergence of diverse schools of thought, such as Keynesian, Marxist, and institutional economics, which both contest and enhance the original framework.

## **Neo-Classical Definition of Economics**

The neo-classical school, spearheaded by Alfred Marshall elevated economics to a prominent status within the social sciences.

Alfred Marshall described conomics as the study of human activity in everyday life, focusing on individual and social actions related to acquiring

and utilizing the material necessities for well-being. His definition is often referred to as the welfare definition of economics.

Certain logical interferences can be drawn from the Marshall's definition. First, economics is concerned with man's ordinary business of life. It is related to his wealth getting and wealth using activities.

Secondly, economics, as a social science, examines how people interact, think, and engage in the everyday activities of life, focusing on the economic dimensions of social existence.

Thirdly, the study of economics focuses solely on economic activities that enhance material welfare, excluding non-economic pursuits and those with dishonourable intentions.

Lastly, by replacing the specific term 'Political Economy' with the broader term 'economics, Marshall elevated the field to a scientific status, free from political biases.

#### **Criticisms of the Neo-Classical Definition of Economics**

- Neoclassical models typically portray individuals as perfectly rational utility maximizers, yet in reality, decisions are shaped by emotions, biases, and incomplete information.
- Robbins argues against the neo-classical economist's separation of material and non-material aspects, believing that all priced goods and services are economic regardless of their nature, as they possess value and are scarce.
- Robbins challenges the notion of welfare associated with economic activities, arguing that harmful goods like cigarettes and wine, despite being economically relevant, do not contribute to genuine human welfare.
- The concept of economic welfare is ambiguous and subjective, as its interpretation varies among individuals, making money an inadequate measure since what benefits one person might harm another, highlighting the ethical dimensions of economic comparisons.
- Robbins critiques the material welfare definition for being more about categorization than analysis, arguing that while it focuses on behaviours aimed at obtaining material goods, all human activities should be considered economic when influenced by scarcity.
- Robbins contends that economics is a human science rather than a social science, emphasizing that its core issue lies in valuing and

allocating scarce resources across different scenarios, which applies equally to both isolated individuals and structured economies.

# **Scarcity Definition of Economics**

Lionel Robbins of London University formulated another and own definition of economics in his publication "An Essay on the Nature and Significance of Economics" in 1932. According to Robbins, "Economics is the science which studies human behavior as a relationship between ends and scarce means which have alternative uses".

This definition of Robbins is based on the following related postulates.

- Economics concerns the human tendency to maximize satisfaction from limited resources.
- Wants are endless; as soon as one is fulfilled, another emerges, driving people to constantly strive for satisfaction, yet they can never fulfill all their desires.
- The fundamental reason we can't satisfy all our wants is the limited resources and time available to us.
- The scarce means are capable of alternative uses. Land is capable of being used for growing rice, sugarcane, wheat etc. Likewise coal can be made use of in factories, railways for generation of electricity.
- Economics focuses on the choices individuals make regarding the allocation of resources to satisfy human needs, setting it apart from purely technical, political, or historical matters.

Robbins' definition emphasizes the fundamental economic dilemma of human life, arising from the struggle to fulfill unlimited desires using limited resources, leading individuals to behave differently based on their feelings, desires, and needs, thereby framing economics as a science focused on human behaviour.

# **Criticisms of Robbins Definition of Economics**

Numerous economists have raised objections to Robbins' definition based on several points:

- Critics argue that Robbins' portrayal of the connection between ends and limited resources is an oversimplified framework that doesn't adequately address the complexities of ends and their inherent challenges.
- Robbins' assumption of fixed ends is flawed, as immediate ends can serve as stepping stones to further goals, making it challenging to clearly distinguish between ends and means.

- Economists critique Robbins' definition for its claim of ethical neutrality, arguing that since economics deals with human behaviour rather than physical matter, it cannot be separated from ethical considerations.
- Robbins' view of economics as merely a valuation problem limits its scope, as Boulding argues that it neglects the essential study of welfare, leaving economics an incomplete discipline.
- Robertson finds Robbins' definition both too limited, as it overlooks organizational flaws that result in wasted resources, and too expansive, since issues of allocating scarce resources can occur in areas beyond economics.
- Robbins' definition fails to address the unique complexities of economic issues in wealthy nations compared to those in underdeveloped economies.
- Robbins' lack of a clear definition overlooks the crucial issues of growth and stability that are foundational to contemporary economics.

## **Modern Definition of Economics**

Economic growth is the primary focus of all economic policies aimed at enhancing social welfare and elevating living standards by addressing issues like poverty, income inequality, unemployment, and malnutrition. A definition of economics based on growth features has been provided by Professor Paul Samuelson. According to Samuelson, "Economics is the study of how people and society end up choosing, with or without the use of money, to employ scarce productive resources that could have alternatives uses to produce various commodities, over time and distribute them for consumption, now or in the future, among various persons or groups in society".

Samuelson goes one step farther and examines how a society uses scarce resources to produce goods and services that different individuals or groups can use now and in the future. The main characteristics of Samuelson's definition are as follows:

- Samuelson underscores that economics revolves around the necessity of making choices due to scarcity, as individuals and societies constantly confront decisions about how to allocate limited resources to meet their wants and needs.
- Samuelson emphasizes the idea that resources have a variety of possible uses. This suggests that a variety of products and services can be produced using resources. In the end, the choice on how to

distribute these resources affects the specific products and services produced.

- Samuelson's definition highlights that economic choices influence
   for only current consumption but also future opportunities and wellbeing, emphasizing the interconnectedness of decisions over time.
- Samuelson's definition acknowledges that economic decisions arise from individual choices shaped by societal influences like institutions, culture, and government policies.
- Samuelson's definition suggests that economic systems are continuously changing due to factors like technological progress, evolving preferences, and shifts in economic policies, which affect resource allocation and the production and consumption of goods and services.

#### 2.2 BASIC ECONOMIC PROBLEMS

All nations grapple with the fundamental issue of resource scarcity due to limited availability and competing uses, which remains a core challenge for any economy: capitalist, socialist or mixed—known as The Central Economic Problem. So, irrespective of all economies face three basic problems that must be answered for an economy to work efficiently. The three central economic problems are: What to Produce? How to Produce?

#### What to Produce?

The study of choice is a key component of microeconomics, requiring firms to select specific products to produce based on societal needs and their limited resources. A company can choose to manufacture either consumer goods like food and clothing or capital goods such as machinery and tools. So, the allocation of productive resources involves making selective choices about which goods and services to produce, leading to some societal wants remaining unmet when resources are dedicated to one product over another.

#### **How to Produce?**

The next challenge in economics is determining the production methods for goods and services, which are influenced by the characteristics and amounts of the products being made, as well as the resources available. There are two types of production techniques: labour intensive and capital intensive. Labour-intensive methods require more workers and less machinery, potentially lowering production costs while alleviating unemployment. And capital intensive requires substantial machinery to enhance efficiency and foster growth.

#### For Whom to Produce?

The third challenges in economics is determining for whom to produce? A society consists of many individuals and households, and all produced goods and services must be allocated among them, determining both the share for each and the specific quantities received. The consumer community consists of varied groups, categorized by income as high, medium, and low-income consumers. Products are made according to how much people can afford, influenced by their income and purchasing power. Income distribution shapes the allocation of resources, meaning a wealthy individual can afford numerous luxuries, whereas someone less fortunate typically has access only to essentials.

## **2.3 SCOPE OF ECONOMICS**

By scope, we refer to the boundaries or range of its study. The scope of economics is vast and encompasses various aspects of human behaviour and societal interactions related to the production, distribution, and consumption of goods and services. Economics revolves around the limited availability of resources, prompting individuals to make informed choices among alternatives to enhance wealth and human welfare.

Consumption is the primary goal of all economic activities, fulfilling human desires, while economics examines the nature of wants, consumption laws, and consumer equilibrium, with the necessity that goods must first be produced for consumption to occur. Production is essential for consumption, which is why economics examines production factors, their features, production laws, and the economic systems of capitalism, socialism, and mixed economies, as well as the localization of industries.

Production alone does not guarantee consumption, as goods must be distributed and accessible to consumers, highlighting that neither individuals nor countries are entirely self-sufficient in their needs. So, nations, much like individuals, rely on each other, which highlights that economics encompasses the study of both internal and international trade principles.

Understanding the scope of economics is crucial for effective scientific analysis, primarily addressing three key questions

- What is the subject matter of Economics?
- What is the nature of Economics?
- What are the limitations of Economics?

All these above key questions are addressed accordingly in the following sections.

#### **2.4 TYPES OF ECONOMICS**

Economics can be broadly divided into two types: on the basis of nature and on the basis of subject matter.

**On the basis of Nature:** Taking nature as basis, economics can be classified into: (i) Positive Economics and (ii) Normative Economics

John Neville Keynes in his admirable book "The Scope and Method of Political Economy" distinguish among positive economics and normative economics.

(i) Positive Economics: Positive economics is a branch of economics that emphasizes describing, quantifying, and explaining economic developments and their related phenomena. Positive economics focuses on factual and objective analysis of economic phenomena, emphasizing measurable data to establish cause-and-effect relationships, as exemplified by statements like "Government-funded healthcare surges public expenditures," which can be verified through empirical research. By leveraging positive economic theory, policymakers can back their normative value judgments with factual support and insights from behavioural economics.

As the effectiveness of positive economics, is evaluated based on the accuracy, breadth, and alignment of its predictions with actual experiences, making it an objective science akin to the physical sciences. Positive economics also objectively analyses real-world conditions and their effects, focusing on accurate predictions while acknowledging the challenges of human interactions compared to the physical sciences.

(ii) Normative Economics: Normative economics relies on ideological principles rather than facts to describe the economy's conditions in response to public policy changes. Unlike positive economics, which emphasizes objective facts with minimal personal opinion, this approach allows for subjective interpretations. Normative economics involves assessing current data and making a determination of how things should progress in future in order to a desired outcome to emerge. The subjective statements should not presume the status quo will continue but rather focus on pursuing one or more specific courses of action.

In the basis of Subject Matter: Considering the subject matter, economics can be classified into (i) Microeconomics and (ii) Macroeconomics.

(i) Microeconomics: The term micro means "small". Microeconomics focuses on the economic behaviours of individuals and small groups,

analysing specific firms, households, prices, wages, incomes, industries, and commodities.

According to Ackley, "Microeconomics deals with the division of total output among industries, products and firms and the allocation of resources among the competing groups. It considers problems of income distribution. Its interest is in relative prices of particular goods and services".

According to Maurice Dobb, "Microeconomics is in fact a microscope study of the economy". It's akin to examining the economy under a microscope to uncover the dynamics of specific markets and the actions of individual consumers and producers.

To put it another way, microeconomics is the study of the relationships between enterprises and industries, as well as between individual families and businesses. In other words, one aspect of microeconomics is the study of aggregates.

#### **Importance of Microeconomics**

One significant approach to economic study that is useful both theoretically and practically is microeconomics:

- Microeconomics is s crucial to comprehending how a free enterprise economy functions since in such an economy, producers and consumers make all of the decisions about how to produce, what to produce and for whom, how to distribute, and what to consume.
- Microeconomics offers the analytical framework to assess state economic policies, with the price mechanism serving as a crucial tool in this evaluation.
- Microeconomics deals with the economizing of scarce resources with efficiency
- Microeconomics enables business executives to maximize productivity with current resources by understanding consumer demand and calculating product costs.
- In international trade, it clarifies gains, balance of payments issues, and foreign exchange rates, with the relative elasticity of demand for each other's products influencing these gains.
- Microeconomics analyses economic welfare by assessing the personal satisfaction individual gain from consuming goods and services and enjoying leisure, as part of welfare economics aimed at defining an ideal economy.

(ii) Macroeconomics: The term macro means "large". Macroeconomics is aggregative economics that studies the relationships between the different aggregates, how they are determined, and what causes their fluctuations. Macroeconomics studies overall economic measures, such as total

employment, income, output, investment, consumption, savings, demand, supply, wages, interest rates, and cost structures.

According to Ackley, "Macroeconomics deals with economic affairs in the large; it concerns the overall dimensions of economic life. It looks at the total size and shape of the functioning of the elephant of economic experience, rather than working of articulation or dimensions of the individual parts. It studies the character of the forest, independently of the trees which compose it".

The study of macroeconomics, often known as income analysis or the theory of income and employment, focuses on topics such as international trade, economic growth, unemployment, inflation, deflation, instability, and stagnation. It also looks at the factors that drive economic development and the barriers to growth.

#### **Importance of Macroeconomics**

Macroeconomics holds significant theoretical and practical value as a tool for economic analysis:

- Understanding macroeconomic variables is essential for grasping how the economy operates, as they are statistically measurable factors that influence total income, output, employment, and the general price level.
- Macroeconomics plays a crucial role in shaping economic policy, especially for countries facing numerous challenges such as overpopulation, inflation, balance of payments issues, and underproduction.
- Macroeconomics also plays a critical role in assessing the economy's performance through national income data, which aids in predicting economic activity levels and analysing income distribution among different groups.
- Monetary issues can be effectively analysed and addressed by implementing a combination of monetary, fiscal, and direct control measures for the entire economy.
- To grasp how individual units behave, it's essential to study macroeconomics, as the demand for specific products is influenced by the overall demand within the economy.

# 2.5: DIFFERENCE BETWEEN MICROECONOMICS AND MACROECONOMICS

Macroeconomics can be distinguished from macroeconomics on the following grounds:

- The study of specific households, businesses, industries, commodities, and prices is a component of microeconomics. In contrast, macroeconomics focuses on the sums of these attributes rather than individual incomes, national income, or price levels, and national output rather than individual output results.
- The primary aim of microeconomics is to maximize utility on the demand side and minimize costs for profits on the supply side, while macroeconomics focuses on achieving full employment, price stability, economic growth, and a positive balance of payments.
- Microeconomics revolves around the price mechanism driven by demand and supply forces to establish equilibrium prices, while macroeconomics focuses on national income, output, employment, and overall price levels determined by aggregate demand and supply.
- Microeconomics focuses on the rational behaviour of individuals, while macroeconomics considers broader factors such as overall output, resource utilization, national income, and general price levels.
- Since microeconomics was studied at a certain time, it is regarded as a static analysis. On the other hand, because macroeconomics is dependent on time lags, currency rates, and past and expected values of the variables, it is seen as a dynamic analysis.
- Microeconomics offers broad applicability and a focus on problemsolving methods across various situations and markets, while macroeconomics aims for a practical understanding of economies with fewer problems and specific solutions.

## **2.6 NATURE OF ECONOMICS**

Economics has unique characteristics that justify its classification as a separate discipline, making it crucial to understand these essential features, which this text aims to outline. Under the nature of Economics, it is studied whether Economics is a science or arts. Considering the fact here an attempt is being taken to describe some nature of economics

#### (A) Economics as a Science

Economists who view economics as a science argue that it employs scientific methods to systematically study human behaviour and develop economic rules and principles. It is commonly asserted that the systematic study of facts through cause and effect, characteristic of science, also applies to Economics, warranting its classification as a science.
Money serves as a reliable measure, similar to physical balance in science, providing certainty in economic occurrences, a characteristic unique to Economics among social sciences. Both science and economics possess predictive power, and the integration of mathematics and econometrics in the field has significantly enhanced this capability.

## Arguments against Economics Being a Science

Because economics lacks the other characteristics of a science, some economists do not consider it to be a science. Because economics focuses on human behaviors and activities, it can be difficult to conduct experimental testing, which is a necessary component of science.

**Economic** phenomena are very complex as they relate to human whose activities are bound by their tastes, habits and social and legal institutions of the society. Economics is thus concerned with human beings who act irrationally and there is no scope foe experimentation in economics.

While economics employs statistical, mathematical, and econometric methods to analyse phenomena, these tools do not provide the precision needed to validate economic laws and theories, making exact quantitative predictions unattainable.

#### (B) Economics as an Art

Art is the practical application of scientific principles. According to J.N. Keynes, "An art is a system of rules for the attainment of given ends". Science establishes principles, while art applies them; analysing poverty is scientific, but creating solutions to eliminate it is an artistic endeavour. Art facilitates the verification of economic theories.

According to Italian economist Cossa, "Art directs, art unposes, predicts or proposes rules. It solves general economic problems". Economics is thus both a science and an art in this sense.

## Arguments against Economics Being an Art

Economists believe that science and art are distinct fields, and while economics may have artistic elements, it should not be classified alongside the arts once its scientific nature is acknowledged.

Economic problems are rarely isolated issues, as they are influenced by various factors such as social, political, and religious contexts, leading economists to often formulate policies that may overlook these broader influences. Moreover to preserve the scientific integrity of economics, it is vital to separate it from policy-making and to conduct studies that remain focused on economic principles.

Economists, as noted by Keynes, focus on analysing economic problems rather than making policy decisions, emphasizing that their role is to provide a method of thinking that aids in finding solutions while acknowledging that many issues require broader approaches beyond purely economic perspectives, as expressed by Marshall and Prof. Pigon.

Economists are increasingly recognizing the importance of applying their findings to real-world issues, suggesting that economics should not be viewed as an infallible authority, yet when thorough groundwork is laid, applied economics can rightfully claim its authoritative voice on certain topics. As a result, economists view economics as both a science and an art, albeit they prefer to refer to the latter as applied economics.

## (C) Ronomics as a Positive Science

Robbins, in "An Essay on the Nature and Significance of Economic Science," highlighted the debate over whether economics is a positive or normative science.

Robbins views economics as an objective science focused solely on reality, uninfluenced by moral or ethical considerations, asserting that economists should refrain from judging the goals themselves.

He also focuses on the issue of limited resources versus desired outcomes, arguing that while cigarettes and wine may harm health and seem morally questionable, economists shouldn't judge them since they fulfill human desires.

Similar to Robbins, Friedman views economics as a positive science aimed at formulating theories or hypotheses that can accurately predict unobserved phenomena.

Friedman argues that economics, like physics, offers testable generalizations for accurate predictions and should remain free from value judgments. He stated that the purpose of economists parallels that of genuine scientists who create hypotheses to predict future events or clarify past occurrences, suggesting that economics aspires to be a positive science akin to other natural sciences.

# (D) Economics as a Normative Science

Economics, as a normative science, focuses on assessing economic events through an ethical lens of "what ought to be". Economists like Marshall,

Pigou, Hawtrey, and Frazer contend that economics is a social science incorporating value judgments, which cannot be definitively proven true or false, distinguishing it from the objectivity of natural sciences.

The foundations of economic laws, theories, and principles are rooted in human issues, and when we attempt to analyse and forecast economic events based on these foundations, subjectivity inevitably comes into play.

Moreover, economic theories, as a branch of social science, are shaped by social and political dynamics, leading economists to apply subjective value judgments in their testing.

And in natural sciences, experiments yield definitive laws, whereas in economics, the inability to conduct experiments means that economic "laws" are merely tendencies.

# 2.7 LIMITATIONS OF ECONOMICS

Many economists, whether consciously or unconsciously, tend to regard economics as a science akin to physics, leading them to hope it can explain economic reality with similar precision and predictability. However, economists need to acknowledge that their grasp of economic realities is inherently limited, as the complexities of economies far outstrip the precision found in the sciences.

The followings are the some limitations of economics study:

- Study of Social Man: Marshall asserts that economics focuses solely on the trade-related activities of social individuals, while Prof. Robbins expands the field to include other human activities as well. Moreover, Marshall restricts economics to the economic activities of social individuals, while Professor Robbins expands the field to include both social and isolated individuals, thereby broadening the scope of economics.
- Study of Normal Man: The economic field exclusively examines real individuals, leaving no room for imaginary or fictional figures.
- Study of Human Activities: Humans engage in various activities throughout their lives, including religious, cultural, social, political, and economic pursuits, but economics specifically focuses on the wealth-related activities of individuals.

- Study of Average Man: The study bouses on the average, normal person, deliberately excluding extraordinary individuals such as the insane, criminals, or misers.
- **Study of Economic Activities:** Robbins suggests that economics should examine all activities involving limited resources, whether they concern capital or time, rather than focusing solely on economic activities.
- Study of Scarce Resource: The study of economics focuses on scarce goods, leaving free goods beyond its scope.
- Study of Economic Laws: Economic laws differ from pure scientific laws because they are influenced by human factors such as nature, environment, tastes, habits, and customs. Economic laws are more flexible than natural laws, as there is no certainty that doubling a good's price will invariably lead to a decrease in its demand.

# 2.8 UNIT SUMMARY

Economics, a social science, examines the efficient use of limited resources to meet boundless human needs and is divided into two branches: Microeconomics, focusing on individual economic units, and Macroeconomics, which looks at the overall economy. Moreover knowledge of economics is essential for the removal of economic problems. Economics also employs statistical, mathematical, and econometric methods to analyse phenomena.

## **2.9 CHECK YOUR PROGRESS**

# **Multiple-Choice Questions (1 Mark Each)**

- 1. Who is known as the father of economics?
- a) John Stuart Mill
- b) Alfred Marshall
- c) Adam Smith
- d) Lionel Robbins

- 2. The term 'economics' is derived from the Greek word 'Oikonomia'. What does 'Oiko' mean?
- a) Management
- b) Wealth
- c) House
- d) Distribution

# 3. According to Alfred Marshall, economics is the study of:

- a) Wealth
- b) Human behavior in everyday life
- c) The distribution of wealth
- d) Scarcity
- 4. What is the primary focus of modern economics according to Paul Samuelson?
- a) Human behavior
- b) The study of wealth
- c) Economic growth
- d) Scarcity
- 5. Which economist introduced the concept of Say's Law?
- a) Adam Smith
- b) John Stuart Mill
- c) Jean-Baptiste Say
- d) F.A. Walker
- 6. What is the key issue addressed by the scarcity definition of economics?
- a) Wealth distribution
- b) Unemployment

- c) Human behavior and scarce resources
- d) Economic growth
- 7. Which of the following is a criticism of the classical definition of economics?
- a) Overemphasis on wealth
- b) Lack of focus on government involvement
- c) Overlooks human behavior
- d) All of the above

## 8. What does microeconomics primarily study?

- a) National income
- b) Individual economic units
- c) Aggregate demand
- d) International trade
- 9. The concept of 'normative economics' is associated with:
- a) Objective analysis
- b) Ideological principles
- c) Statistical methods
- d) Scarcity and choice

# 10. Which of the following is NOT a basic economic question?

- a) What to produce?
- b) How to produce?
- c) For whom to produce?
- d) How to achieve world peace?

## Short Answer Questions (2 Marks Each)

1. Define economics and explain its significance in daily life.

- 2. What are the main criticisms of the classical definition of economics?
- 3. Explain Say's Law and its implications in economic theory.
- 4. What are the key features of the neo-classical definition of economics according to Alfred Marshall?
- 5. Differentiate between classical and neo-classical views of economics.
- 6. How does Robbins' definition of economics emphasize scarcity and human behavior?
- 7. What are the central economic problems faced by all economies?
- 8. Explain the concept of 'positive economics' and provide an example.
- 9. What are the criticisms of Robbins' definition of economics?
- 10. How does Samuelson's definition of economics account for the role of time in economic decisions?

## Medium Length Questions (5 Marks Each)

- 1. Discuss the classical definition of economics with examples from Adam Smith, Jean-Baptiste Say, and John Stuart Mill.
- 2. Compare and contrast the classical and neo-classical definitions of economics.
- 3. Explain the criticisms of the neo-classical definition of economics and its limitations.
- 4. How does the scarcity definition of economics explain human behavior in the allocation of limited resources?
- 5. Discuss the significance of the three central economic problems: What to produce, how to produce, and for whom to produce.
- 6. Explain the scope of economics and its relevance in understanding economic systems.
- 7. Discuss the difference between microeconomics and macroeconomics with suitable examples.
- 8. Define positive and normative economics, and discuss their relevance in economic analysis.
- 9. What are the key components of modern economics as proposed by Paul Samuelson?
- 10. Critically analyze economics as both a science and an art with respect to its methodology and practical applications.

# Long Answer Questions (10 Marks Each)

- 1. Discuss the history and evolution of economics from the classical to the neo-classical definitions, providing critiques and modern perspectives.
- 2. Explain the significance of Lionel Robbins' definition of economics and its emphasis on human behavior in the face of scarcity.
- 3. Analyze the criticisms of classical economics and their impact on the development of contemporary economic thought.
- 4. Discuss the role of economics in understanding resource allocation and how it applies to real-world decision-making processes.
- 5. Critique the assumptions made by neo-classical economics, especially regarding human rationality and welfare.
- 6. Explore the concept of welfare economics as introduced by Alfred Marshall, and its impact on modern economic theory.
- 7. Discuss how the central economic problem of scarcity leads to the study of economics and its implications for public policy.
- 8. Compare microeconomics and macroeconomics, highlighting their differences, and discuss how they relate to the broader scope of economics.
- 9. Discuss the role of positive economics in shaping economic policies and the importance of empirical evidence in economic analysis.
- 10. Critically assess the classification of economics as both a science and an art, and its practical implications for policymaking and economic research.

# 2.10 REFERENCE/ FURTHER READING MATERIALS

1. Jhingan, M.L., Microeconomics 8th Edition, Vrinda Publications (P) Ltd.

2. Sarma, Gunajit., Debnath, Arabinda., Engineering Economics, Kalyani Publications

3. Visser, Hans(2020)., The limits of Economic theories and model. *The Central European Review of Economics and Management* 

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5. Metu, Amaka (2017). Nature and Scope of Economics. *SSRN Electronic Journal* 

# **UNIT-3: CONSUMER BEHAVIOUR AND UTILITY**

# Objectives

After studying this unit, learners will be able to:

- Understand consumer needs and preference
- Learn how to create and retain consumers
- Predict consumers buying behaviour
- Under consumer behaviour and determine how goods and services provide satisfaction to consumers

Structure

- 3.0: Introduction
- 3.1: Meaning of Consumer and Definition of Consumer Behaviour
- 3.2: Consumer Vs Customer
- 3.3: Role of Consumer Behaviour
- 3.4: Meaning and Types of Consumption
- 3.5: Consumption Function
- 3.6: Concept and Meaning of Utility
- 3.7: Marginal Utility and Total Utility
- 3.8 Cardinal and Ordinal Utility Approach
- 3.9: Law of Diminishing Marginal Utility
- 3.10: Consumer Surplus
- 3.11: Unit Summary
- 3.12: Check your Progress
- 3.13: Reference/ Further Reading Materials

# **3.0 INTRODUCTION**

The entirety of economic activities is contingent upon the demand generated by consumers. Consequently, consumers are often regarded as the sovereigns of the market. This is the reason why understanding how consumers act is crucial in the field of economics. How consumers act is the outward manifestation of their inner emotions connected to their consumption habits, needs, wants, likes, and satisfaction. Therefore, this chapter is designed to explore the subject matter outlined in the chapter's content, focusing on understanding consumer behaviour.

# 3.1 MEANING OF CONSUMER AND DEFINITION CONSUMER BEHAVIOUR

A consumer is someone who buys goods or services for their own use, playing a crucial role as the end-user in the economy. Consumption reduces the value of goods and services, while utility represents their ability to fulfill our needs and desires. So, a consumer is someone who directly utilizes goods and services, while behaviour reflects an individual's internal feelings, desires, attitudes, and perceptions.

Consumer behaviour examines how individuals, groups, or organizations choose, purchase, use, and discard products and services to meet their needs and desires, focusing on consumer actions in the marketplace and the motivations behind them. Marketers aim to analyse consumer buying behaviour in order to identify market needs, obsolete products, and the most effective ways to present goods and services to consumers.

According to Louden and Bitta, consumer behaviour is the decision process and physical activity, which individuals engage in when evaluating, acquiring, using or disposing of goods and services. This definition emphasizes the ever-changing aspects of consumer behaviour, including both cognitive processes (decision-making) and physical activities (acquiring, using, and discarding products). It highlights the complete consumer journey, spanning from initial consideration to post-purchase evaluation.

According to Engel, Blackwell, and Mansard, consumer behaviour is the actions and decision processes of people who purchase goods and services for personal consumption.

## Factors that affect Consumer

The main elements that have a big impact on customer behavior:

(A) Personal Factor: Individual traits are qualities that are particular to an individual and might not be shared by others in the same category. These traits can encompass decision-making processes, distinct routines and passions, and viewpoints. When taking into account individual traits, choices are also shaped by age, sex, upbringing, cultural background, and

other individual matters. For instance, an elderly individual is likely to display varied buying patterns compared to a younger individual, indicating they will select goods in a different manner and allocate their funds towards products that might not appeal to a younger demographic.

(B) Psychological Factor: Every day, people are influenced by various problems that are specific to how they think. Mental elements can involve how someone sees a need or scenario, their skill in grasping or comprehending data, and their personal outlook. Every individual will react to an advertisement according to their views and feelings. Hence, advertisers need to consider these mental aspects when developing strategies, making sure their advertisements resonate with their intended audience.

(C) Social Factor: The third issue that has a huge effect on client conduct is social characteristics. Social influencers are pretty various and may consist of someone's family, social interaction, paintings or faculty communities, or any organization of humans someone associates with. It also can consist of someone's social class, which entails income, residing conditions, and training level. The social elements are very various and may be tough to investigate when growing advertising plans. However, it's far essential to recall the social elements in client conduct, as they substantially affect how humans reply to advertising messages and make buying decisions.

(D) Cultural Factor: Culture is a profound and pervasive influence on consumer behaviour, shaping the values, beliefs, preferences, and purchasing decisions of individuals and groups. Cultural factors encompass traditions, norms, language, religion, and social practices, making essential for businesses to understand when developing marketing strategies and products tailored to specific markets.

## **3.2 CONSUMER VS CUSTOMER**

Despite their frequent interchangeability, the terms "customer" and "consumer" have different meanings in the context of business and marketing. A customer is not always consumer. Customers purchase goods but consumers use them.

A consumer is the individual who uses or consume a product or service. They are always end users. E.g. a person eating a meal at food court or a toy purchased by parents. A customer is an individual or entity that purchases goods or services. They are not necessarily end users. E.g. a retailer buying products from the wholesaler or a company purchasing office supplies.

# **3.3 ROLE OF CONSUMER BEHAVIOUR**

Consumer behaviour plays a pivotal role in shaping the market landscape. It influences how businesses operate, market their products, and make strategic decisions. Here's a breakdown of its significance:

(A) Product development and Innovation:

- Identifying needs: By grasping consumer behaviour preferences companies can create products that meet particular needs and wants.
- Market Segmentation: Market segmentation involves analysing consumer behaviour to recognize specific segments in the market facilitating tailored product offerings.
- Product Positioning: Companies can effectively position their products by taking into account consumer perceptions and associations.

(B) Marketing and Advertising:

- Effective Targeting: Markets can reach the appropriate audience with the correct message by examining consumer behaviour.
- Persuasive Communication: Grasping consumer psychology allows marketers to create engaging advertising campaigns
- Creating Brand Loyalty: By meeting consumer needs and wants, companies can encourage brand loyalty and repeat sales

(C) Pricing Strategies:

- Setting Competitive Prices: By understanding consumer perceptions of value, marketers can set competitive prices that attract customers without compromising profitability.
- Implementing Pricing Strategies: Consumer behaviour analysis helps marketers determine the effectiveness of different pricing strategies, such as discounts, promotions, or premium pricing.

(D) Distribution Strategies:

• Optimizing Distribution Channels: Businesses may optimize their distribution networks to guarantee that items are available where and when customers need them by having a thorough understanding of consumer purchase patterns

(E) Competitive Advantage:

• A deep understanding of consumer behaviour enables businesses to anticipate market trends and respond proactively to changing consumer preferences. This provides a competitive edge and helps businesses stay ahead of the curve.

## **3.4 MEANING AND TYPES OF CONSUMPTION**

Consumption in economics refers to the goods and services by households to satisfy their needs and wants. It is a key component of economic activity and plays a crucial role in driving economic growth. Consumption involves a broad slice of human activity. It is concerned with all phases of the using up of goods and services in living. Consumption is influenced by various factors including income, wealth and government policies. Understanding the concept of consumption is crucial for analysing economic trends and making informed decisions for the managers.

### 3.4.1 Relationship between Consumption and Production

Human societies are characterized by consumption. Large amounts of things can occasionally be wasted in the economic system even after they have been produced. The inefficient consumption process is the cause of this waste. This type of consumption may lead to the abuse of productive resources in addition to the consumers' decreased level of satisfaction.

Consumption that leaves consumers unsatisfied results in people in society lacking energy and, consequently, motivation to work. On the other hand, a production method that produces little to no waste is probably going to result in happier customers. As a result, people will be comparatively healthier and better able to participate in society's productive processes. In this way, production and consumption are intimately related.

The following are the causes how consumption and production interact each other:

- Demand drives Production: Consumer demand for goods and services generates production needs. Businesses increase production to satisfy consumer demand when consumers desire more of a product.
- Production creates income: Businesses, employees, and other production variables all profit from production. This revenue then serves as the foundation for consumer expenditures.

• Income fuels Consumption: People buy goods and services using the money they make from production. Spending by consumers generates demand for new goods and services, which in turn spurs additional production.

## **3.4.2 Types of Consumption**

Consumption in economics can be classified into various types based on different criteria:

## • Based on Necessity:

Essential Consumption: This entails spending money on necessities for survival and fundamental health, like food, water, shelter, and medical care.

Non-Essential Consumption: This is the buying of products and services that are sought for comfort, enjoyment, or social standing but are not strictly required for survival. Travel, entertainment, and luxury products are a few examples.

## • Based on Ownership:

Public Consumption: This includes the government's expenditure on products and services like public infrastructure, healthcare, and education that benefit the entire community.

Private Consumption: This includes the money that people or households spend on things like food, clothing, and housing that they utilize for their own needs.

#### Based on Durability:

Durable Goods: These are products, including automobiles, appliances, and furniture, that can be used repeatedly over an extended period of time.

Non-Durable Goods: Products like food, clothing, and fuel are examples of items that are consumed rapidly or have a short lifespan.

Table 3.1 Summary table for clarity

Category	Definition	Examples for Students
Essential Consumption	Necessary for	Rent, food, bus pass
	survival/well-being	
Non-Essential	For comfort/luxury	Movie tickets, branded
Consumption		clothing
Public Consumption	Provided by government	Free Wi-Fi on campus,
	for all	public libraries
Private Consumption	Personal spending	Buying a laptop,
		paying for coffee
Durable Goods	Long-lasting, reusable	Laptops, bicycles,
		furniture
Non-Durable Goods	Quickly consumed,	Groceries, notebooks,
	short lifespan	toiletries

# **3.5 CONSUMPTION FUNCTION**

According to John Maynard Keynes, the consumption function is an economic formula that measures the relationship between income and total consumption of goods and services in the economy. It essentially shows how much people tend to spend as their income changes. It is a functional relationship between two aggregates- total consumption and gross national income.

The relationship between consumption and income is represented by

C=f(Y)

Where C stands for consumption

Y stands for income

f is the functional relationship

This relationship is based on the ceteris paribus assumption, as such only the consumption relationship is considered and all possible influences on consumption are held constant.

Table 3.2 shows that consumption behaviour with respect to change income level

Income (\$)	Consumption (\$)
0	80
100	110

150	140
200	180
250	220
300	280
320	330

It is evident from the preceding table that even in the case of zero income, consumption is positive. This is because, at its most fundamental level, consumption is subsistence-oriented. That is why consumers would continue to consume even if they have no money due to survival necessities. This kind of consumption is known as autonomous consumption. The table shows that as income increases, so does consumption. Induced consumption refers to the rise in consumption caused by an increase in income. Induced consumption is directly correlated with the income level of the society, but independent consumption is independent of the societal economic level. There comes a moment at which consumer expenditure equals income. Beyond this threshold, consumer expenditure is increasing, but not all money is spent on consuming. This income-consumption discrepancy goes beyond the point of income-consumption equality called savings by consumers.

## **3.5.1 Properties of Consumption Function**

The consumption function as proposed by J.M. Keynes has two main technical properties:

(A) Marginal Propensity to Consume (MPC): Marginal propensity to consume measures the proportion of an additional unit of income that is spent on consumption. In simple words it tells how much of a pay raise a person is likely to spend rather than saving. MPC describes the tendency to consume for given change in income.

MPC= Change in consumption Change in Income

The MPC is always between 0 and 1 ( $0 \le MPC \le 1$ ). MPC at 0 indicates that whole of income is saved and there is no consumption while at 1 indicates that whole of income is spent on consumption.

(B) Average Propensity to Consume (APC): Average propensity to consume measures the proportion of total income that is spent on consumption. It is calculated by dividing total consumption by total income.

 $APC = \frac{Total \ consumption}{Total \ Income}$ 

As income increases, APC typically decreases. This is because as income rises, people tend to save a larger proportion of their income.

Income (Y)	Consumption (C)	MPC	APC
120	120	-	120/120=1
160	140	20/40=0.5	140/160=0.875
200	160	40/40=0.5	160/200=0.80
240	180	20/40=0.5	180/240=0.75
280	200	30/40=0.5	200/280=0.71

Table 3.3 shows the relationship between MPC and APC

It is evident from the above table that MPC is constant and APC is declining with increase in income. The MPC often remains rather steady as income rises. As a result, regardless of their total income, people typically spend a fixed percentage of their extra money on consumption.

In the short run, APC is frequently higher than MPC. This is due to the fact that people tend to spend a greater amount of their total income than new income.

In the long run, as revenue grows, the APC may finally converge with the MPC. This is because individuals may decide to save a greater percentage of their increased income as they get wealthy, which would cause both APC and MPC to drop.

## 3.5.2 Keynes' Psychological Law of Consumption

Keynes' Psychological Law of Consumption is a fundamental concept in economics that states:

# "As income increases, consumption also increases, but not by as much as the increase in income."

Simply said, as people make more money, they spend more, but they also save a portion of it. This is predicated on the premise that people have a psychological predisposition to spend a specific proportion of their income, and when their income rises, they may opt to save a greater portion.

Keynes' law of Consumption is based on following assumptions:

• Laissez faire Economy: Laissez-faire is an economic doctrine that favours limited government intervention in the economy. The word is French for "let it be" or "leave it alone." This concept advocates the belief that markets should be allowed to operate freely, without

government regulation or subsidies. Laissez-faire economics presents an appealing vision of economic liberty and efficiency. However, its actual application needs careful consideration of its possible limitations, as well as the requirement for some level of government action to solve market failures and societal issues.

- Normal Condition in the Economy: The law presume that the economy is operating normally. There should be no concern about anomalous market behaviour caused by war, revolution, shocks, or other factors. This kind of fear has an impact on the MPC and MPS, and the law becomes invalid.
- Psychological and institutional complex should remain same or Ceteris paribus: The Latin phrase "ceteris paribus" means "all other things being equal." In the context of Keynes' Psychological Law of Consumption, this means that all other factors influencing consumption, aside from income, are considered to be constant. These include consumer preferences, attitudes, expectations, government policies, interest rate and social norms. Economists can isolate the relationship between income and consumption by assuming that the above components remain constant and examine how changes in income affect consumption patterns. It is crucial to highlight that in the real world, these variables do not always remain constant. However, the ceteris paribus assumption allows economists to simplify and focus on the crucial relationship between income and consumption.

## **3.5.3 Determinants of Consumption Function**

The determinants of the consumption function, which influence the relationship between income and consumption, can be broadly categorized into two types: (A) Objective Factors and (B) Subjective Factors

#### (A) Objective Factors:

The principal objective factors that undergo changes in consumption function are:

• A change in wage level: Real income, which can change depending on methods, tastes, and social circumstances, drives consumption more than nominal income. Additionally, when overall output fluctuates, real income tends to increase more slowly than wage income because of diminishing returns.

- Windfall gains or loss: Unexpected financial windfalls can significantly alter the consumption function by prompting increased spending at all income levels, though the lasting effects on the marginal propensity to consume may vary based on individual preferences and financial goals.
- Change in real income: Real income refers to the buying power of monetary earnings. Rising prices lead to lower real income, whereas falling prices lead to higher real income. Money income remains constant. Increased real income leads to higher consumption and vice versa.
- **Changes in Fiscal Policy:** Fiscal policy, encompassing government spending and taxation, significantly influences consumption, as tax cuts increase disposable income and spending, while tax hikes lead to a reduction in disposable income and decreased consumption.
- Change in Expectations: Future economic expectations significantly influence the consumption function by altering the entire consumption curve and the relationship between disposable incomes and spending. Consumer confidence can either rise, leading to increased spending and a shift upward in the consumption function, or fall, resulting in more cautious spending and a shift downward, depending on expectations about future economic conditions.
- Change in rate of interest: Significant fluctuations in market interest rates can indirectly impact consumption habits by leading to reduced bond prices, encouraging savings over investments, and causing consumers to delay purchases of durable goods due to increased installment costs.

# (B) Subjective Factors:

The subjective factors in the consumption function are the individual psychological and social influences that determine how willing a person is to spend money, varying greatly from one individual to another.

- Individual Motives: There are eight motives "which lead individuals to refrain from spending out of their incomes:
  - a. People who excel at planning for the future often tend to save more and spend less in the moment
  - b. Financially independent individuals tend to be more likely to spend.
  - c. Anticipation of future income increases can shape current spending habits

- d. The type of job a person has can influence their spending behaviour, as those in stable professions often tend to consume more.
- e. The ambition to create a lasting legacy may shape choices around spending and saving.
- f. Being frugal can lead to decreased consumption.
- g. Social status and the pursuit of a specific lifestyle can affect how individuals choose to consume
- h. The urge to save for unforeseen future events may lead to decreased current spending
- **Business Motives:** Following are the motives which lead to influences the consumption:
  - a. Business Expansion: To grow their business, entrepreneurs often save more and spend less, using the accumulated wealth to invest either through savings or loans.
  - b. Preferences for liquidity: Liquidity preference involves maintaining cash for daily transactions and unexpected needs, leading to reduced consumption by businessmen.
  - c. Exercising careful financial management: Capital equipment gradually loses value over time and can become out dated due to technological advancements, necessitating replacement, which leads businessmen to save funds, ultimately affecting their consumption patterns without significant short-term psychological shifts.

# **3.6: CONCEPT OF UTILITY**

Consumer demand is driven by the expectation of utility from a commodity. An economic system primarily aims to deliver goods and services that fulfill human desires, with the ability of these goods and services to meet wants being referred to as utility.

## 3.6.1 Meaning of Utility:

Utility is the measure of the satisfaction or benefit a consumer experiences from a good or service, reflecting the personal value they assign to different products and their associated "happiness" or "pleasure." Utility is subjective and varies by individual, but economists use ordinal and cardinal approaches to rank preferences and quantify satisfaction. Utility fluctuates not just between individuals but also over time, influenced by varying consumption levels and consumers' moods. For example a person's favourite food won't be useful to them at that moment if they are not hungry even after you provide it. Moreover, the unit of utility is utils.

## 3.6.2 Relationship between want, consumption, utility and satisfaction

The relationship between want, utility, consumption, and satisfaction can be understood as follows:

**Want:** A want is the initial urge for a specific good or service, marking the beginning of the process.

**Consumption:** Engaging in the use of a product or service to meet a desire is the action taken to satisfy a want.

**Utility:** Utility refers to the satisfaction or pleasure gained from consuming a good or service, reflecting the value individuals assign to various offerings.

**Satisfaction:** Satisfaction is the sense of happiness or achievement one experiences after enjoying a good or service that meets their needs.



Here's how these concepts are interconnected:

- Want leads to Consumption: A desire drives a person to acquire a good or service to satisfy that need.
- Consumption leads to Utility: Consuming goods or services offers value or fulfillment to a person.
- Utility influences Satisfaction: The satisfaction gained from consumption is directly influenced by the utility it provides.
- Satisfaction can influence Future Wants: The satisfaction or dissatisfaction from a particular consumption experience can shape future wants and desires.

## **3.7 TOTAL UTILITY AND MARGINAL UTILITY**

**Total Utility (TU)**: Total utility is the sum of utilities obtained by the consumer from different units of a commodity.

According to Mayer's, total utility is the sum of marginal utilities associated with the consumption of the successive units. A consumer's overall satisfaction from consuming a specific quantity of a good or service is the cumulative satisfaction derived from each unit consumed.

For example if a person 5 units of a product and drives the following marginal utilities from each unit

Unit 1= 40 utils Unit 2=35 utils Unit 3=30 utils Unit 4=25 utils Unit 5=20 utils

Then, the total utility from consuming all 5 units will be

= (40+35+30+25+20) utils =155 utils

**Marginal Utility** (MU): Marginal utility is the extra satisfaction a consumer receives from consuming one more unit of a good or service, reflecting the increase in total utility from that additional consumption.

According to Prof. Kenneth Boulding, marginal utility of any quantity of a commodity is the increase in total utility which results from a unit increase in its consumption. In simpler terms, it's the additional satisfaction or benefits a consumer gains from consuming one more unit of a good or service. Or in other words, marginal utility of a commodity is the loss in utility if one unit less is consumed.

Algebraically, the marginal utility of "N" units of a commodity is the total utility of (N) units minus the total utility of (N-1) units.

Thus,  $MU_N = TU_N - TU_{N-1}$ .

Table 3.4 the relation between Total Utility and Marginal Utility

Units	Total Utility (TU)	Marginal Utility (MU)= $TU_N - TU_{N-1}$ .
	10	10
2	18	8
3	24	6

4	28	4
5	30	2
6	30	0 (zero utility)
7	28	-2 (negative utility)
8	24	-4
9	18	-6

Figure 3.1 Relation between total utility and marginal utility



As total utility rises, marginal utility decreases until the 5th unit, reaching zero at the 6th unit—indicating consumer satiety—while the 7th and 8th units result in negative marginal utility, leading to disutility and dissatisfaction.

# 3.8 CARDINAL AND ORDINAL UTILITY APPROACH

## **Cardinal Utility Approach:**

The cardinal utility approach, an older economic theory, posits that satisfaction from consuming goods or services can be measured and represented numerically. The cardinal utility approach, advocated by neoclassical economists such as Jevons and Pigou views utility as a measurable concept, allowing individuals to assign numerical values, like 10 or 20 utils, to the satisfaction gained from consuming items, such as drinking a glass of water.

This method relies on certain assumptions:

- The utility of a commodity can be quantified using units known as 'utils'.
- Total utility is the sum of the utility obtained from each unit of a consumed commodity.
- Utility is considered independent, means it does not depend on the quantities of other goods bought by the consumer or the utilities experienced by others.
- The marginal utility of money is considered constant in this approach, as cardinalists regard it as a stable measure of utility, despite the potential for increased marginal utility when a person buys more of a good and has less money left.

# **Ordinal Utility Approach:**

The ordinal utility approach emphasizes ranking preferences over assigning specific numerical values to utility, indicating that consumers can order different bundles of goods based on their preferences without quantifying their satisfaction.

This method relies on certain assumptions:

- The fundamental idea is that consumers act rationally, aiming to maximize their satisfaction by preferring more over less
- Indifference curve analysis suggests that utility can only be ranked in terms of order—meaning that while we can compare the utility from two goods as more, less, or equal, we cannot quantify the exact difference in utility.
- Transitivity implies that if a consumer prefers A over B and B over C, they will also prefer A over C
- Consistency in choice implies that if a person favours A over B at one time, they will not later favour B over A
- The assumption of non-satiation indicates that a consumer always favours greater quantities of goods over lesser amounts
  - The Diminishing Marginal Rate of Substitution (MRS) refers to the rate at which a consumer is willing to replace

one good (X) with another (Y) while keeping their overall satisfaction constant.

## **3.9 LAW OF DIMINISHING MARGINAL UTILITY**

Human wants exhibit a limited intensity, as the desire for additional units decreases with each successive acquisition, a phenomenon referred to as the law of diminishing marginal utility. Herman Heinrich Gossen first formulated this law in 1854, later referred to as Gossen's first law, a name attributed to Marshall. Gossen expressed that the enjoyment of a continuous satisfaction diminishes over time until it is fully experienced.

The Law of Diminishing Marginal Utility, a key principle in utility analysis, describes how the satisfaction gained from consuming additional units of a commodity declines after a certain point, assuming other consumption remains unchanged; for illustration, let's consider an example. The first glass of juice a person drinks when they are thirsty will be quite beneficial to them since it will make them feel very satisfied. The value gained from each additional unit of juice will continue to decline as the person continues to drink more and more glasses. When someone is content, they will eventually be unable to drink any more. Here, the utility will go to zero. A person would have negative utility or disutility if they continued to consume juice.

Units	Marginal Utility (MU)
1	10
2	8
3	6
4	4
5	2
6	0 (zero utility)
7	-2 (negative utility)
8	-4
9	-6

Table 3.5: Diminishing Marginal Utility

Figure 3.2 Diminishing Marginal Utility



The table indicates that the first glass of juice provides 10 utils, with the utility decreasing to 8 for the second glass, 6 for the third, 4 for the fourth, and reaching zero by the sixth glass, which then results in negative utility with further consumption.

## 3.9.1 Limitations of Diminishing Marginal Utility

(i) There should be one type of commodity with uniform units desired by a single consumer, ensuring that each unit has the same weight and quality.

(ii) Any alteration in customer tastes, habits, customs, fashions, or income will enhance utility instead of reducing it.

(iii) The consumption of the commodity should be continuous, with units being consumed in a sequential manner at a specific time.

(iv) The commodity units should be appropriately sized, as providing a thirsty person with water by spoon enhances the value of the following sips.

(v) The prices for the various units and subsequent commodities should stay the same.

(vi) The commodity must be divisible, as it's impractical for consumers to use multiple units of durable goods like bikes or TVs personally over time.

(vii) This law applies to normal individuals but not to those deemed abnormal.

# 3.9.2 Importance of Law of Diminishing Marginal Utility

(i) The law of Diminishing Marginal Utility underpins consumption principles, including the laws of demand and equimarginal utility, as well as the concept of consumer surplus. (ii) Producers often change the design, pattern, and packaging of their goods to align with this law, as we tend to grow bored with the same products, prompting a desire for variety in items like soaps, toothpastes, and pens, thereby enhancing consumption and production diversity.

(iii) The law clarifies that as the supply of a commodity rises, its price tends to drop due to the decrease in marginal utility from the increased quantity available.

(iv) The diamond-water paradox can be understood through this law, as diamonds, being scarce, have high marginal utility and price, while water, despite its greater overall utility, is abundant and has low marginal utility and price.

(v) The principle of progression in taxation follows this law, where an individual's tax rate increases with their income growth due to the diminishing marginal utility of money.

## **3.10 CONSUMER SURPLUS**

Consumer surplus is the extra benefit a consumer gains when they pay less for a good or service than the maximum price they were prepared to pay. Consumer surplus arises from the principle of diminishing marginal utility, indicating that as we acquire more of a good, our additional willingness to pay for it decreases.

The idea of consumer surplus, initially introduced by Dupuit in 1844 to assess the social benefits of public goods like bridges and highways, was further developed into a theoretical framework by Marshall in his 1890 work 'Principles of Economics.' Consumer surplus, as defined by Marshall, is the difference between what people are willing to pay and what they actually pay for goods, plays a crucial role in economic theory, particularly in demand and welfare economics, and is instrumental in informing government policies like taxation.

Figure 3.3 Consumer Surplus



Fig. 3.3 shows how to measure consumer surplus from a commodity using the demand or marginal utility curve. The figure's X-axis represents the quantity of a good, the Y-axis represents its price, and the X-axis represents its marginal utility, or willingness to pay for the good.

The demand or marginal utility curve (AB) slopes downward, showing that the marginal utility obtained from the extra units of the commodity decreases as the customer purchases more of it.

The consumer will be in equilibrium when purchasing OQ units of the commodity if OR is the market price because, at OQ units, the marginal utility from a unit of the commodity is equal to the price OR.

The Q<sup>th</sup> unit of the commodity provides no consumer surplus because its price matches the consumer's marginal utility, while earlier units offer surplus as their marginal utility exceeds their price, and the total utility is determined by adding the marginal utilities of all purchased units.

The area under the demand or marginal utility curve up to point Q in Figure 3.3 represents the overall utility that the consumer derives from OQ units of the commodity. In other words, OAPQ equals the entire usefulness of OQ units.

In other words, the consumer is willing to pay Rs. OAPQ for OQ units of the good, but since the price is OR, they will only pay Rs. ORPQ, resulting in an additional utility of APR.

As the market price rises above OR, consumers will purchase fewer units than OQ, leading to a decrease in their consumer surplus, while a price drop below OR encourages purchases beyond OQ, resulting in an increased surplus, illustrating that higher prices reduce consumer surplus and lower prices enhance it according to the consumer's marginal utility curve.

# **3.11: UNIT SUMMARY**

The diverse nature of consumers worldwide complicates the understanding of buying behaviour, where both individuals and organizations face unique influences from market dynamics, buyer traits, and decision processes, with varying degrees of involvement affecting information search and interpretation, thereby guiding managers in analysing purchase behaviour across different product categories.

Moreover, utility is a subjective psychological experience that represents the satisfaction, pleasure, or well-being a consumer gains from a good or service, influenced by individual preferences, desires, and the principles of marginal and total utility.

## **3.12: CHECK YOUR PROGRESS**

## **Multiple-Choice Questions (1 Mark Each)**

#### 1. Who is considered a consumer in economics?

- a) A person who resells goods
- b) A person who uses goods or services
- c) A person who produces goods
- d) A person who transports goods

### 2. What does consumer behaviour primarily examine?

- a) How businesses develop products
- b) How individuals choose, use, and dispose of goods and services
- c) How governments regulate markets
- d) How supply chains are managed

# 3. Which factor is NOT one of the four major influences on consumer behaviour?

- a) Personal factors
- b) Environmental factors
- c) Social factors
- d) Cultural factors

# 4. What term refers to the satisfaction or benefit a consumer derives

- from a good or service?
- a) Utility
- b) Surplus
- c) Demand
- d) Supply

# 5. According to Keynes' Psychological Law of Consumption, what happens when income increases?

## appens when income increas

# a) Consumption decreases

# b) Consumption increases more than income

- c) Consumption increases less than income
- d) Consumption remains unchanged

# 6. What is the primary focus of cultural factors in consumer behaviour?

- a) Individual preferences
- b) Market competition
- c) Values, traditions, and social norms
- d) Product pricing

# 7. Which of the following is an example of public consumption?

- a) Purchasing a car for personal use
- b) Government spending on infrastructure
- c) Buying groceries for a household
- d) Spending on luxury items

## 8. What does the law of diminishing marginal utility state?

- a) Utility remains constant regardless of consumption
- b) Satisfaction from additional units of a good decreases after a point
- c) The price of goods decreases as consumption increases
- d) Total utility increases at an increasing rate

## 9. What is consumer surplus?

- a) The price consumers are willing to pay for a good
- b) The extra benefit when paying less than the maximum willingness to pay
- c) The total cost of producing goods and services
- d) The income consumers earn from production activities

# 10. Which factor affects consumer behaviour through family, social class, and peer groups?

- a) Cultural factors
- b) Psychological factors
- c) Social factors
- d) Economic factors

# Short Answer Questions (2 Marks Each)

- 1. Explain the difference between essential and non-essential consumption.
- 2. What are the two main types of factors that influence the consumption function?
- 3. How does psychological factors influence consumer behaviour?
- 4. Briefly explain the term "ceteris paribus."
- 5. How do social factors affect consumer behaviour?

- 6. Describe public consumption with one example.
- 7. What is the relationship between production and consumption?
- 8. How do income levels affect consumption, as per Keynes' law?
- 9. Explain the concept of consumer surplus in two sentences.
- 10. What is the significance of market segmentation for businesses?

## Medium-Length Questions (5 Marks Each)

- 1. Explain the differences between durable goods and non-durable goods with examples.
- 2. Discuss the importance of understanding cultural factors in consumer behaviour.
- 3. Outline the key components of Keynes' Psychological Law of Consumption.
- 4. How do personal factors shape consumer buying behaviour?
- 5. Illustrate the relationship between demand, production, and income with an example.
- 6. What role does consumer behaviour play in product development?
- 7. Explain how fiscal policy can impact the consumption function.
- 8. Discuss the significance of utility in economics and its measurement.
- 9. Analyze the role of consumer surplus in public policy-making.
- 10. Explain the law of diminishing marginal utility with an example.

# Long Answer Questions (10 Marks Each)

- 1. Discuss the four factors that influence consumer behaviour with relevant examples.
- 2. Elaborate on the types of consumption based on necessity, ownership, and durability.
- 3. Examine the psychological and institutional assumptions behind Keynes' law of consumption.
- 4. Explain how businesses can use consumer behaviour analysis to gain a competitive advantage.
- 5. Discuss the factors affecting the consumption function in detail, including objective and subjective factors.
- 6. Analyze the significance of understanding consumer surplus in economic welfare.
- 7. Compare and contrast public and private consumption with examples.
- 8. Explain the concept of diminishing marginal utility and its implications for consumption patterns.
- 9. How does the interaction between production and consumption shape economic activity?

10. Critically evaluate the impact of cultural and social factors on consumer behaviour.

## **3.13 REFERENCE/ FURTHER READING MATERIALS**

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2. Damodaran Suma, Managerial Economics, 2e, 2010, Oxford

2. Jhingan, M.L., Microeconomics 8th Edition, Vrinda Publications (P) Ltd.

3. Mote V, Paul S and Gupta G, 3e, Managerial Economics, 2004, Tata McGraw Hill

# **UNIT 4 ANALYSIS OF DEMAND**

## Objectives

After studying this unit, learners will be able to:

- Understand economic efficiency and the proper use of resources in the market
- Understand customer demand for a certain product
- Determine how much to change prices without affecting consumer demand
- Understand the concept of indifference curve and important assumptions on which the philosophy of indifference curves is based
- Familiarize with the important properties of indifference curves
- Understand how consumers spend their money and how they might substitute one product for another
- Understand the significance of forecasting of demand in the market Structure
- 4.0: Introduction
- 4.1: Meaning of Demand
- 4.2: Determinants of Demand
- 4.3: Law of Demand
- 4.4: Assumption of law of demand
- 4.5: Causes of Downward Sloping Demand Curve
- 4.6: Indifference Curve Analysis of Demand
- 4.7: Marginal Rate of Substitution
- 4.8: Demand Estimation and Forecasting
- 4.9: Applications of Demand Analysis in Managerial Decision Making
- 4.10: Unit Summary
- 4.11: Check Your Progress
- 4.12: Reference/ Further Reading Materials

# 4.0 INTRODUCTION

Heightened competition is urging management to actively listen to customer feedback and adopt forward-thinking strategies through market analysis to thrive in the marketplace. Every day, we make numerous decisions to optimize our limited resources and time, with the concept of 'demand' being crucial in this process.

# 4.1 MEANING OF DEMAND

Demand is defined as the quantities of goods that consumers are ready and able to buy at different price points over a specific time frame, requiring both the desire and financial capacity to make a purchase. For our demand to hold value in the market, we must have the financial means to make a purchase; without sufficient funds, our willingness to buy does not translate into effective demand.

Demand, unlike desire and want, reflects the ability to pay for a commodity, as human wants are essentially limitless. Moreover, demand is a function of price, income, prices of related goods and tastes. Price sensitivity indicates that as prices rise for goods or services; demand typically falls, resulting in a downward-sloping demand curve, assuming other factors stay constant.

Economists define demand as the quantity of goods or services that consumers are willing and able to buy at various prices, considering both needs and wants as fundamentally similar.

## **4.2 DETERMINANTS OF DEMAND**

The elements that influence how much of a good or service customers are willing and able to purchase at a specific price are known as demand determinants. Here are the key determinants:

(a) Price of the Good: As the price of a commodity increases, demand decreases, while a lower price leads to higher demand.

(b) Price of Related Goods: There are three types of commodities in this context

• Substitutes: Two commodities are considered substitutes if a change in the price of one leads to a corresponding change in the demand for the other. In other words, substitutes are those commodities which satisfy similar wants such as tea or coffee. Substitutes, like tea and coffee, affect each other's demand: a drop in coffee prices increases its demand while decreasing tea demand, whereas a rise in coffee prices leads to decreased coffee demand and increased tea demand.

- Complementary Goods: Where the demand for two commodities is linked to each other such as cars and petrol, bread and butter, tea and sugar, etc., they are said to be complementary goods. Goods that are complementary to one another are indispensable. The demand for bread and butter will decline if, for example, the price of bread increases and becomes prohibitively expensive. Conversely, if bread prices decline and become more affordable, there will be a greater demand for both bread and butter
- Unrelated Goods: If the two commodities are unrelated, say TV and car, a change in the price of one will have no effect on the quantity demanded of the other.

(c) Tastes and Preference: A shift in consumer preferences favouring a commodity, such as a trend change, will increase its demand without altering its price, the prices of other goods, or consumer income, while a decline in preference will decrease its demand, assuming other demand factors remain constant.

(d) Income of the consumer: The demand for a commodity varies with consumer income, particularly increasing for normal goods such as cars and TVs as income rises. However in case of inferior goods, demand falls with increase in income and vice-versa.

(e) Consumer Expectations: Future expectations of prices or income can affect present demand, as consumers often boost their current purchases if they anticipate rising prices.

(f) Size of Buyers: Market demand for a commodity is affected by size of buyers. With increase in number of potential buyers, demand for the commodity rises. However, if the buyers are decreasing, then the demand will fall. Composition of buyers affects the demand of a commodity.

The interaction between different determinants can lead to complex effects on demand; for instance, a drop in price might boost demand, but if consumer income simultaneously declines, the overall impact remains uncertain.

## 4.3 LAW OF DEMAND

The famous rule of demand, which emphasizes the inverse relationship between price and quantity purchased, is demonstrated by the fact that consumers tend to purchase more of a product when its price drops. The link between the quantity desired and its price is expressed by the law of demand. The law of demand states that consumers tend to purchase more when prices are lower, assuming other factors remain unchanged. According to Marshall, "the amount demanded increases with a fall in price and diminishes with a rise in price". The law refers to the direction in which quantity demanded changes with a change in price.

The law of demand indicates that, all else being equal, consumers tend to buy more of a product when its price decreases—have you ever considered why this principle applies to almost all goods and services? The two key factors that explain the downward slope of demand functions are the income effect, which shows how a price drop increases purchasing power and allows for more goods to be bought, and the substitution effect, where consumers tend to switch to cheaper items when their prices fall compared to others that become relatively more expensive.

The law of demand can be explained with the help of following table

Price (₹)	Quantity demanded (units)
40	5
30	10
20	15
10	20
5	25

Table 4.1 Demand Curve

Figure 4.1 Demand Curve



The demand curve visually represents how the quantity demanded of a good change in relation to its price, with price plotted on the vertical axis and quantity on the horizontal axis.
From the above figure, OX axis is the quantity demanded and OY axis is the price of a commodity. The graph shows that at a price of ₹40, the quantity demanded is 5 units, while at ₹30, demand rises to 10 units, demonstrating the connection between quantity demanded and pricing, and so on. The downward slope of the demand curve illustrates the law of demand.

## 4.4 ASSUMPTION OF LAW OF DEMAND

The law of demand, which states that there is an inverse trationship between price and quantity demanded, is based on several key assumptions:

- There is no change in the taste and preferences of the consumer
- The income of the consumer remains constant
- There is no change in customs
- The commodity to be used should not confer distinction on the consumer
- There should not be any substitutes of the commodity
- There should not be change in prices of other products
- There should not be any possibility of the change in the price of the product being used
- There should not be any change in the quality of the product
- The habits of the consumers should remain unchanged

## 4.5 CAUSES OF DOWNWARD SLOPING DEMAND CURVE

When demand curve slopes downward from left to right, the following are the main reasons for the downward sloping demand curve:

(a) The law of demand is influenced by the principle of Diminishing Marginal Utility, which states that as consumers purchase more of a good, the added satisfaction from each additional unit decreases; thus, consumers are willing to buy more only when prices drop, leading to a downward-sloping demand curve.

(b) The demand for a commodity increases when its price falls, attracting new consumers, while rising prices lead existing consumers to reduce or cease consumption, resulting in a downward-sloping demand curve.

(c) A decrease in a commodity's price boosts the consumer's real income, allowing them to buy more of it and other goods, while an increase in price reduces real income and demand for that commodity, illustrating the downward-sloping demand curve known as the income effect.

(d) The other effect of change in the price of the commodity is the substitution effect. When the price of a commodity drops while its

substitutes remain the same, consumers will prefer buying more of that commodity, leading to increased demand; conversely, if the price rises, demand will decrease, as seen with the relationship between tea and coffee prices.

(e) In every society, while there are individuals across various income levels, the majority belong to low-income groups whose purchasing behaviour, characterized by buying more when prices drop and less when they rise, greatly influences the downward-sloping demand curve; however, higher prices do not affect the demand of those who can afford to maintain their consumption levels regardless.

(f) The demand curve's negative slope can be attributed to the various applications of some goods and services. As the cost of these things rises, their demand will decline and they will only be utilized for more significant purposes. On the contrary, when prices fall, they will be used for a variety of purposes, and demand will increase. For example, with higher electricity rates, power will be predominantly used for residential illumination. People will still use electricity for things like cooking, fans etc.

## 4.6 INDIFFERENCE CURVE ANALYSIS OF DEMAND

The indifference curve is a geometrical device that has been used to replace the neoclassical cardinal utility concept. Prof. Hicks presented its comprehensive version in his "Value and Capital" in 1939.

The indifference curve analysis measures the utility ordinally. It explains consumer behaviour in terms of his preferences or ranking for different combinations of two goods. An indifference curve is drawn from the indifference schedule of the consumer.

According to Watson, "An indifference schedule is a list of combinations of two commodities the list being so arranged that a consumer is indifferent to the combinations, preferring none of any other".

An indifference curve is a graphical representation that illustrates alternative combinations of goods or services that, according to the consumer, provide the same level of total satisfaction. When these combinations are displayed in a table format, it is referred to as an indifference schedule; the graphical representation of this data is known as an indifference curve.

A mathematical formula known as a demand function illustrates the connection between the amount of an item or service that buyers are willing and able to purchase and the variables affecting that amount.

Let's consider an imaginary example involving two goods: mangoes and oranges. We'll create an indifference schedule that shows different combinations of mangoes and oranges that provide the same level of satisfaction to the consumer.

In Table 4.2 schedule, the consumer is indifferent whether he or she will buy first combination of units or 2<sup>nd</sup> combination or 4<sup>th</sup> combination or 6<sup>th</sup> combination or any other combination. But all the combinations will give him or her equal satisfaction from any of the combinations of apples and oranges listed.

 Table 4.2 Indifference Schedule

Combinations	Mangoes (X)	Oranges (Y)
1	1	14
2	2	9
3	3	6
4	4	4
5	5	3

Now, we can plot these combinations on a graph to create the indifference curve.

## Figure 4.2: Indifference Curve



- On the x-axis, we will represent the number of Mangoes.

- On the y-axis, we will represent the number of Oranges.

When we plot the points from our indifference schedule: (1, 14), (2, 9), (3,6), (4,4), (5,3)

We will see a downward-sloping curve that illustrates the trade-off between mangoes and oranges. As the consumer increases the number of mangoes, they must decrease the number of oranges to maintain the same level of total satisfaction.

The shape of the indifference curve demonstrates the concept of diminishing marginal rate of substitution: as the consumer substitutes one good for another, they are willing to give up fewer units of the good being reduced for each additional unit of the good being gained.

This imaginary example helps illustrate how consumers make choices based on their preferences, maintaining the same satisfaction level while varying the quantities of different goods. An indifference curve is a graphical representation that illustrates alternative combinations of goods or services that, according to the consumer, provide the same level of total satisfaction.

## 4.6.1 ASSUMPTIONS OF INDIFFERENCE CURVE ANALYSIS

The assumptions of indifference curves are fundamental to understanding consumer choice theory in economics. Here are the key assumptions:

- The consumer act rationally so as to maximize satisfaction
- There are two goods X and Y
- The consumer possesses complete information about the prices of goods in the market
- The prices of two goods are given
- The consumer's tastes, habits and income remain the same throughout the analysis
- Consumers always prefer to have more of a good rather than less, assuming the goods is desirable. This implies that more of either good will not decrease utility
- An indifference curve is negatively inclined sloping downward
- An indifference curve is always convex to the origin
- Each indifference curve represents a different level of satisfaction. If they were to intersect, it would imply inconsistent preferences, which violates the assumption of transitivity
- An indifference curve is smooth and continuous which means that the two goods are highly divisible and that levels of satisfaction also change in a continuous manner
- The consumer arranges the two goods in a scale of preferences which means that he or she has both preferences and indifference for the goods. The consumer is supposed to rank them in their order of preferences and can state if he or she prefers one combination to the others or is indifferent between them

- Both the preferences and indifference are transitive. If a consumer prefers combination A to combination B and combination B to combination C, then they will also prefer combination A to combination C. This ensures consistency in consumer preferences
- The consumer is in a position to order all possible combinations of the two goods

# 4.6.2 PROPERTIES OF INDIFFERENCE CURVE

The several key properties of indifference curve are:

• A higher indifference curve to the right of another represents a higher level of satisfaction



Figure 4.3 Indifference curve

- In between two indifference curves, there can be a number of other indifference curves
- The number IC<sub>1</sub>, IC<sub>2</sub>, IC<sub>3</sub> .....etc. given to indifference curves are absolutely arbitrary
- The slope of an indifference curve is negative
- Indifference curves can neither touch or intersect each other so that one indifference curve passes through only one point of an indifference curve



Figure 4.4 Indifference curve intersecting

- An indifference curve cannot touch either axis
- An indifference curve is convex to origin
- Indifference curve are not necessarily parallel to each other

## 4.7 MARGINAL RATE OF SUBSTITUTION (MRS)

The marginal rate of substitution is the rate of exchange between some units of goods which are equally preferred. Under this a consumer is willing to give up one good in exchange for another good, while keeping their overall satisfaction constant. Let us consider two goods; X and Y.

The MRS of X and Y is always equal to the ratio of marginal utility of X to that of Y. Since the two marginal utilities keep changing, therefore, MRS also keeps changing. Geometrically, MRS is represented by the slope of the tangent to the indifference curve at the relevant point of reference. As we move along indifference curve from left to right i.e. the amount of X keeps increasing, than the slope of the successive tangents drawn keeps falling.





The marginal rate of substitution is in fact the slope of the curve at a point on the indifference curve. Thus

$$MRS = \frac{\Delta Y}{\Delta X}$$

It means MRS is the ratio of change in good Y to a given change in good X. In the above figure, there are three triangles  $\triangle ABC$ ,  $\triangle CDE$  and  $\triangle EFG$  on indifference curve I. The vertical sides AB, CD and EF represent  $\triangle Y$  and the horizontal sides BC, DE and FG represent  $\triangle X$ .

Moreover, at point C, MRS= $\frac{AB}{BC}$ 

At point E, MRS= $\frac{CD}{DE}$ 

Hence, this shows that as the consumer moves downwards along the curve, he or she possesses additional units of X and gives up lesser and lesser units of Y which signifies marginal rate of substitution is diminishing. The following table explains the MRS with the help of example.

Combination	Mangoes	Oranges	ΔΧ	ΔΥ	ΔΥ/ ΔΧ
	(X)	(Y)			
1	1	14	1	5	5
2	2	9	1	3	3
3	3	6	1	2	2
4	4	4	1	1	1
5	5	3	N.A	N.A	N.A

Table 4.3 Calculation of Marginal rate of substitution

Let us take up the indifference schedule as presented in Table 4.2 and calculate MRS. Let us consider two goods : mangoes and oranges represented by X and Y respectively.

Here  $\Delta Y$  represents that quantity of Y which the consumer is ready to give up for a  $\Delta X$ . Once such an exchange takes place, the value of  $\Delta Y$  which the consumer is ready to give up for  $\Delta X$  undergoes a change.

Thus when the consumer is having  $1^{st}$  combination of 1 mango and 14 oranges, the consumer is ready to give up 5 oranges for 1 mango. Similarly, when the consumer is having  $2^{nd}$  combination, he or she is ready to give up 3 oranges for 1 mango and so on for other combinations.

## 4.8 DEMAND ESTIMATION AND FORECASTING

## 4.8.1 Demand Estimation

Demand estimation within a demand function involves identifying the numerical values of the parameters that characterize the relationship between the quantity demanded of a product and factors such as price, income, and the prices of related goods. This process is essential for companies and policymakers to make data-driven decisions regarding production, pricing strategies, and resource distribution.

There are three methods for estimating demand function:

(a) **Regression Analysis:** This is the most often utilized approach, which analyzes historical pricing, quantity, and other pertinent data using statistical approaches.

The method involves four steps:

(i) Identification of variables which influence the demand for the good whose function is under estimation

(ii) Collection of historical data (time series and/or cross section) on all the relevant variables

(iii) Choosing alternative functional forms (linear, reciprocal, double log, quadratic, etc.) for the function

(iv) Estimation of the function

(b) Market Experiments: Researchers use this strategy to adjust a product's pricing or other variables and examine the subsequent changes in demand. By examining the data generated from these tests, researchers may estimate the demand function.

(c) Consumer Surveys: This strategy entails polling people about their willingness to pay for a product at various price points. Researchers can estimate the demand function by examining the answers.

## 4.8.2 Demand Forecasting

Forecasting demand for its products is a crucial activity for all businesses, particularly those engaged in the manufacture of commodities and services that have a gestation time.

Demand forecast means estimation of the demand for the good in question in the forecast period. Demand forecast may be attempted not only for the total market but also for market segments like domestic demand and foreign demand. For example, there is a commodity X and the forecast period is the year 2025, then the forecasting problem is to estimate the demand for commodity X in 2025.

For genuine forecasts, the forecast period is a future period and they are referred to ex-ante forecasts. The forecasts for past and present periods, which are carried out to test the credibility of the forecasting model, are called ex-post forecasts. The ex-ante forecasts are often made for a number of periods in future.

#### **4.8.3 Significance of Demand Forecast**

Demand forecasting plays a crucial role in various aspects of business operations. Here are some of its key significances:

- Precise demand predictions enable companies to organize their production timelines efficiently, guaranteeing they manufacture the appropriate amounts at the correct times. This prevents overproduction, which may cause surplus inventory and storage expenses, or underproduction, which could lead to missed sales opportunities and customer discontent.
- By predicting future demand, companies can streamline their inventory management. This enables them to prevent stock shortages, which can result in missed sales opportunities, and excess inventory, which can consume capital and raise storage expenses.
- Forecasting demand allows companies to collaborate with their suppliers and logistics partners to maintain an effective and seamless supply chain. This aids in shortening lead times, lowering transportation expenses, and enhancing the overall performance of the supply chain
- Forecasting demand aids in recognizing new trends in consumer preferences and market needs. This insight is vital for companies to create new products and services that align with changing consumer requirements.

# 4.9 APPLICATIONS OF DEMAND ANALYSIS IN MANAGERIAL DECISION MAKING

Demand analysis is extremely important for any commercial activity. So, prior to launching a business, any reasonable manager should conduct demand analysis because the goal is to maximize profit while allocating limited resources efficiently. The demand analysis helps in finding the optimum quantity of goods to be produced, to be supplied in different markets etc. It is very essential for managers to know about the policies to be undertaken for the maximization of profits. The demand for different goods in the market and the situation of the substitute goods can be known from the demand analysis. The following are the applications of demand analysis for managers of an organisation:

(a) Forecasting of necessity: Demand analysis makes it easy for the manager to know about the kinds of goods necessary in the market or society. With this the organisation can easily find out the type of goods to be produced for the maximization of the profit before hand. For this, the income of consumers, tastes, desire etc. should be looked upon very carefully.

(b) Sale forecasting: Any organisation has to produce the goods in respect to the sales estimation. For sales forecasting also the demand analysis is of great importance. Organisation will be successful if goods are produced by estimating the prior to production with the help of demand analysis. So, with the help of demand analysis it will be easier for the entrepreneur to decide the quantity of goods to be produced.

(c) Price determination: Demand analysis plays an important role in price determination also because price is the main determinant for that effects the demand. So, it is necessary for a manager to study demand analysis prior to price determination. Goods consumed by the consumers are not of the same types, some are luxurious goods and some are necessities. So, demand analysis plays an important role in the price determination of different types of goods.

(d) Decision relating profit: Every company has to decide very carefully when determining the profit because the products are of various types. Government will interfere if the price level of the essential goods becomes very high. So with the help of demand analysis essential goods and luxurious goods should be categorised and price accordingly. For the categorization of different goods demand analysis is very essential for the entrepreneurs.

(e) Determination of size of the firm: Size of the firm is very important for the manager because it affects many things. Large firm size can produce more goods and earn more profits. So demand analysis is of great importance for the organisation for selecting the right size of the firms. Since the size of the firm is affected by the demand of the consumers, the demand analysis is of great importance to the entrepreneurs in decision making.

(f) Success and failure of business: Success and failure of the businesses are much dependent upon the demand analysis. The management should forecast the quantity and type of goods to be produced for the success of the business on the basis of demand analysis. Any business can be successful by producing the goods according to the desire and tastes of the consumers on the basis of demand analysis. Failure is more probable if the goods are produced without any demand analysis.

(g) Financial Provision: Every management will run the business with the financial provision. So to make a decision of the financial provision required to run a business there is a necessity of demand analysis. A business will be successful if financial provision is fulfilled according to demand analysis.

## 4.10 UNIT SUMMARY

In this unit we have studied that demand analysis is a crucial tool for businesses to understand consumer behaviour and make informed decisions. It involves studying the relationship between the quantity of a good or service demanded and various factors influencing that demand. Moreover, marginal rate of substitution helps economists comprehend how customers choose products and divide their resources among them. It's a fundamental concept in microeconomics that provides insights into consumer behaviour and market dynamics.

#### 4.11 CHECK YOUR PROGRESS

## **Multiple-Choice Questions (1 Mark Each)**

- 1. What is the primary requirement for demand to exist?
  - a) Desire
  - b) Financial capacity
  - c) Price stability
  - d) Market size
- 2. What is the relationship between price and demand, as per the law of demand?
  - a) Direct relationship
  - b) Inverse relationship
  - c) No relationship
  - d) Exponential relationship
- 3. Which of the following is NOT a determinant of demand?
  - a) Consumer income
  - b) Price of substitutes
  - c) Cost of production
  - d) Consumer preferences
- 4. What happens to demand when the price of complementary goods increases?
  - a) Increases

- b) Decreases
- c) Remains constant
- d) Unrelated to price change

## 5. What is an indifference curve?

a) A demand scheduleb) A graph showing equal satisfaction levels from different combinations of goodsc) A supply curved) A price elasticity graph

#### 6. What type of goods see demand fall as income rises?

- a) Normal goods
- b) Luxury goods
- c) Inferior goods
- d) Complementary goods

## 7. Which factor explains why demand curves slope downward?

- a) Income effect
- b) Substitution effect
- c) Both a and b
- d) None of the above

## 8. Who introduced the concept of the indifference curve?

- a) Alfred Marshall
- b) Prof. Hicks
- c) Adam Smith
- d) John Watson

## 9. What is demand forecasting used for?

- a) Determining production schedules
- b) Setting price controls
- c) Calculating GDP
- d) Analyzing market shares

## 10. What is the significance of demand analysis in pricing decisions?

- a) To maximize production
- b) To adjust demand
- c) To ensure correct pricing
- d) To create marketing strategies

## Short Answer Questions (2 Marks Each)

- 1. Explain the difference between demand and desire.
- 2. How does the income effect influence the law of demand?
- 3. Define complementary goods with an example.
- 4. Describe how consumer expectations influence demand.

- 5. What role does the price of substitutes play in demand determination?
- 6. Explain the concept of diminishing marginal utility.
- 7. How can consumer surveys help estimate demand?
- 8. What are unrelated goods? Give an example.
- 9. Why is demand analysis critical for price determination?
- 10. Discuss the significance of demand analysis in decision-making about firm size.

## Medium-Length Questions (5 Marks Each)

- 1. Define demand and list its key determinants.
- 2. Explain the law of demand with examples and its exceptions.
- 3. Discuss the income effect and substitution effect as reasons for the downward-sloping demand curve.
- 4. How do market experiments assist in estimating demand functions?
- 5. Explain the concept of an indifference curve and its role in understanding consumer behaviour.
- 6. Discuss the significance of demand forecasting for business operations.
- 7. Compare the three methods of estimating demand functions: regression analysis, market experiments, and consumer surveys.
- 8. How does the composition and size of buyers affect market demand?
- 9. Why is demand analysis important for inventory management?
- 10. Explain how demand analysis contributes to understanding the success or failure of a business.

## Long Answer Questions (10 Marks Each)

- 1. Elaborate on the law of demand, its assumptions, and the reasons behind a downward-sloping demand curve.
- 2. Discuss the types of related goods and their impact on demand with suitable examples.
- 3. Explain the process of demand estimation using regression analysis, including its steps and applications.
- 4. Analyze the applications of demand analysis in managerial decisionmaking.
- 5. How does demand forecasting help businesses optimize their operations and reduce costs? Provide examples.
- 6. Discuss the significance of indifference curve analysis in demand theory and consumer choice.
- 7. Elaborate on the concept of demand forecasting, its types, and the difference between ex-ante and ex-post forecasts.
- 8. Examine the role of demand analysis in price determination and profit decisions.
- 9. Discuss the relationship between consumer income and demand, highlighting the differences between normal and inferior goods.

10. Explore the significance of demand analysis in financial planning and decision-making for businesses.

# 4.12 REFERENCE/ FURTHER READING MATERIALS

1. Damodaran Suma, Managerial Economics, 2e, 2010, Oxford

2. Jhingan, M.L., Microeconomics 8th Edition, Vrinda Publications (P) Ltd

3. Ahuja.H. L, Principles of Microeconomics, 22e, , 2019, S. Chand Publishing

4. Mote V, Paul S and Gupta G, 3e, Managerial Economics, 2004, Tata McGraw Hill

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# **UNIT 5 THE ELASTICITY OF DEMAND**

Objectives

After studying this unit, learners will be able to:

- Understand the concepts of elasticity of demand
- Identify the price elasticity, income elasticity and cross elasticity of demand
- Understand the various method to measure the price elasticity of demand
- List the significance of price elasticity of demand
- Explain the factors affecting price elasticity of demand Structure

5.0: Introduction

- 5.1: Meaning of Price Elasticity of Demand
- 5.2: Income Elasticity of Demand
- 5.3: Price Cross Elasticity of Demand
- 5.4: Measurement of Price Elasticity of Demand
- 5.5: Factors of the Price Elasticity of Demand
- 5.6: Significance of Price Elasticity of Demand

5.7: Unit Summary

5:8: Check Your Progress

5.9: Reference/ Further Reading Materials

## **5.0 INTRODUCTION**

In unit 4 you have learnt about the analysis of demand and understood customer demand for a certain product and how consumers spend their money and how they might substitute one product for another. Generally elasticity of demand refers to the price elasticity of demand. This chapter studies in detail the concept of price elasticity of demand and application of analysis of demand. Moreover you will learn the factors on which the price elasticity of demand of a commodity depends.

# 5.1 MEANING OF PRICE ELASTICITY OF DEMAND

In a broader sense, elasticity describes the capacity of a material or object to return to its original shape after being stretched, compressed, or deformed.

In the context of economics, elasticity measures how the quantity demanded or supplied of a good changes in response to variations in price, income, or other factors. It reflects the sensitivity of consumers or producers to these changes. For instance, a product with high price elasticity will experience a significant change in demand when its price alters, while a product with low price elasticity will be less impacted by such price changes.

A high elasticity indicates that even a slight change in price can lead to a substantial change in demand or supply, whereas low elasticity suggests that quantity changes little more response to price fluctuations. Essentially, elasticity provides insight into how responsive consumers and producers are to shifting market conditions.

In short, the elasticity of demand is the degree of responsiveness of demand to change in price.

According to Prof. Richard Lipsey, "Elasticity of demand is the ratio of percentage change in demand to the percentage change in price". This means that how significantly the quantity demanded of a good or service reacts to changes in its price.

According to Mrs Joan Robinson, "The elasticity of demand at any price or at any output is the proportional change of amount purchased in response to a small change in price, divided by the proportional change in price". Thus price elasticity of demand is the ratio of percentage change in amount demanded to a percentage change in price. It can be illustrated as

 $E_{P} = \frac{Proportional \ change \ in \ quantity \ demanded}{Proportional \ change \ in \ price}$ 

Here  $E_P$  is the coefficient of price elasticity of demand and is always negative because when price changes, demand moves in the opposite direction.

This proportional change of a variable can be explained with the help of an example. Let us suppose the quantity demanded is 100 units and after some time frame the demand increased to 140 units, then the proportional change in quantity demanded is the new quantity demanded minus old quantity demanded i.e. (140 -100) units.

Mathematically, Proportional change in quantity demanded

$$=\frac{140-100}{100}=\frac{40}{100}=\frac{2}{5}$$

Let us take another example taking the price context. Let us assume the price of a commodity is  $\gtrless$  50 and after some time frame the price of same commodity increased to  $\gtrless$  55.

Thus, the proportional change in price of a commodity is

$$\frac{\{(55-50)}{\{50\}} = \frac{5}{50} = \frac{1}{10}$$

Algebraically, the equation of price elasticity can be represented as

$$E_{P} = \frac{\frac{\Delta D}{D}}{\frac{\Delta P}{P}}$$

=

Where  $\Delta D$  represents change in quantity demanded

D represents original quantity demanded

 $\Delta P$  represents change in price of a commodity

P represents original price of a commodity

 $\frac{\Delta D}{D}$  represents proportional change in quantity demanded

 $\frac{\Delta P}{P}$  represents proportional change in price of a commodity

$$E_{P} = \frac{\Delta D}{D} \times \frac{P}{\Delta P}$$
$$= \frac{\Delta D}{\Delta P} \times \frac{P}{D}$$

Since the quantity demanded and the price of a commodity is inversely related minus sign will appear either in numerator or denominator. This indicates the negative relationship between price and quantity demanded.

## **5.2 INCOME ELASTICITY OF DEMAND**

The income elasticity of demand expresses the responsiveness of a consumer's demand for any good to the change in income of the consumer. It is the ratio of percentage or proportional change in the quantity of demanded of a commodity to the percentage or proportional change in income of the consumer.

According to Prof. Richard Lipsey, "Income elasticity of demand is the ratio of the percentage change in quantity demanded to the percentage change in income".

Thus it can be illustrated as

Proportional change in quantity demanded Proportional change in price  $E_{Y} =$  $= \frac{\Delta D}{\frac{D}{\Delta Y}}$  $= \frac{\Delta D}{D} \, x \, \frac{Y}{\Delta Y}$  $= \frac{\Delta D}{\Delta Y} x \frac{Y}{D}$ 

Where  $\Delta D$  represents change in quantity demanded

D represents original quantity demanded

 $\Delta Y$  represents change in income of the consumer

Y represents original income of the consumer

 $\frac{\Delta D}{D}$  represents proportional change in quantity demanded

 $\frac{\Delta Y}{Y}$  represents proportional change in income of the consumer

Let us consumer the following example:

Example 1:

Table 5.1

Income (₹)	Quantity demanded ( in units)
250	50
300	80

If we solve mathematically, we get

 $E_{Y} = \frac{Proportional change in quantity demanded}{Proportional change in price}$  $=\frac{\Delta D}{\Delta Y} \times \frac{Y}{D}$ 

$$= \frac{(80-50)}{(300-250)} \times \frac{250}{50}$$
$$= \frac{30}{50} \times \frac{250}{50}$$
$$= \frac{3}{1}$$
$$= + 3$$

The positive sign indicates the direct relationship between the quantity demanded and the income of the consumer.

Example 2:

Table 5.2

Income (₹)	Quantity demanded ( in units)
250	80
300	50

 $E_{Y} = \frac{Proportional change in quantity demanded}{Proportional change in price}$  $= \frac{\Delta D}{\Delta Y} \times \frac{Y}{D}$  $= \frac{(50-80)}{(300-250)} \times \frac{250}{80}$  $= \frac{-30}{50} \times \frac{250}{80}$  $= \frac{-15}{8}$ = -1.875

The negative sign indicates the inverse relationship between the quantity demanded and the income of the consumer.

## **5.3 PRICE CROSS ELASTICITY OF DEMAND**

The relationship between the percentage or proportional change in the amount of a commodity that is demanded and the percentage or proportional change in the price of a related commodity is known as price cross elasticity of demand.

Stated differently, the relative responsiveness of the quantity demanded of a particular commodity is known as cross elasticity of demand.

The price cross elasticity of demand tells us how much the demand of one product changes when the price of a related product changes.

Let us consider two commodities A and B. The cross elasticity of demand between two commodities A and B is

 $E_{C} = \frac{Proportional change in quantity demanded of the commodity B}{Proportional change in price of the commodity A}$ 

 $=\frac{\frac{\Delta D_{B}}{D_{B}}}{\frac{\Delta P_{A}}{P_{A}}}$ 

Where  $\Delta D_B$  represents change in quantity demanded of commodity B.

D<sub>B</sub> represents original quantity demanded of commodity B

 $\Delta P_A$  represents change in price of commodity A

P<sub>A</sub> represents original price of commodity A

Let us consider two commodities prawn and fish in a restaurant. The price of prawn is  $\gtrless$  100 per plate which falls to  $\gtrless$  80. Considering the law of demand, quantity demanded of prawn may rise from 100 plates per day to 120 plates. Now fish substitute of prawn. If the price of fish remains unchanged, quantity demand of fish may fall from 60 plates to 50 plates per day. It is because quantity demand of prawn has increased. We can easily realise that the fall in price of prawn from  $\gtrless$  100 per plate to  $\gtrless$  80 has reduced the quantity demanded of fish from 60 plates to 50 plates.

If we illustrate taking an numerical example

Example 3

Table 5.3

Price of Prawn (₹)	Quantity demand of fish (no. of plates)
100	60
80	50

From the above table, the change in quantity demand of fish  $(\Delta D_B)$ 

=(50-60)=-10

And the change in price of prawn per plate  $(\Delta P_A) = \mathbb{E}(80-100) = \mathbb{E}-20$ 

Moreover, the original quantity demand of fish  $(D_B)$  is 60 plates per day and the original price of prawn  $(P_A)$  is  $\gtrless 100$  per plate.

Thus, price cross elasticity of demand is

$$E_{C} = \frac{\Delta D_{B}}{D_{B}} \times \frac{P_{A}}{\Delta P_{A}}$$
$$= \frac{\Delta D_{B}}{\Delta P_{A}} \times \frac{P_{A}}{D_{B}}$$
$$= \frac{-10}{-20} \times \frac{100}{60}$$
$$= \frac{25}{3}$$

The positive sign indicates that there is a positive relation between the price of prawn and the quantity of fish. When the coefficient of the price cross elasticity of demand is positive then we call it substitutes. Hence prawn and fish are substitute commodities.

Similarly if the coefficient of price cross elasticity of demand is negative, then there is an inverse relationship between the two commodities and hence are called complementary commodities.

## 5.4 MEASUREMENT OF PRICE ELASTICITY OF DEMAND

There are generally four methods of measuring elasticity of demand.

(a) Percentage method

(b) Point method or Geometric method

(c) Arc method

(d) Total outlay method

#### (a) Percentage method

Its coefficient  $(E_P)$  is used to quantify price elasticity of demand. This coefficient calculates the percentage change in a commodity's quantity required that happens when its price changes by a specific percentage.

 $E_{P} = \frac{Percentage change in quantity demanded}{Percentage change in price}$  $= \frac{\frac{\Delta D}{D}}{\frac{D}{P}}$ 

Where  $\Delta D$  represents change in quantity demanded

D represents original quantity demanded

 $\Delta P$  represents change in price of a commodity

P represents original price of a commodity

 $\frac{\Delta D}{D}$  represents percentage change in quantity demanded

 $\frac{\Delta P}{P} \text{ represents percentage change in price of a commodity}$  $E_{P} = \frac{\Delta D}{D} \times \frac{P}{\Delta P}$  $= \frac{\Delta D}{\Delta P} \times \frac{P}{D}$ 

If  $E_P > 1$ , then the demand is elastic

If  $E_P < 1$ , then the demand is inelastic

If  $E_P = 1$ , then the demand is unity elastic

#### (b) Point method or Geometric method





This can be explained with the help of figure 5.1. The quantity demand is measured on X axis and the price of a commodity is measured in Y-axis. CD is the demand curve. In order to find out the price elasticity of demand

at point P, a tangent at point P is drawn which intersect X axis at point B and Y-axis at point A.

The price elasticity of demand is given by BP/PA. If the BP=PA or point P is mid-point of AB, then the price elasticity of demand is unity. Similarly, if PB<PA, then price elasticity is less than unity and if PB>PA, then price elasticity is greater than unity. Hence moving up the demand curve from mid-point, elasticity becomes greater. When the demand curve touches the Y-axis, elasticity if infinity. Moreover, any point below the mid-point towards the X-axis show inelastic demand. Elasticity becomes zero when the demand curve touches the X-axis.

#### (c) Arc method

When elasticity is measured between two points on the same demand curve, it is known as arc elasticity. According to Prof. Baumol, "Arc elasticity is a measure of the average responsiveness to price change exhibited by a demand curve over some finite stretch of the curve".

Figure 5.2



In the above figure 5.2, CD is the demand curve. The quantity demand is measured on X axis and the price of a commodity is measured in Y-axis. The area between P and Q in the demand curve CD is an arc which measures the elasticity over a certain range of price and quantities.

The elasticity of for the arc PQ is calculated by taking the average of the two prices and the average of the two quantities. From the figure 5.2,  $P_1$  and  $P_2$  are two prices and  $Q_1$  and  $Q_2$  are two quantities. The formula for price elasticity of demand on any point on between PQ is given by

$$E_{P} = \frac{\frac{\Delta Q}{(Q1+Q2)/2}}{\frac{\Delta P}{(P1+P2)/2}}$$
$$= \frac{\Delta Q}{\Delta P} \times \frac{P1+P2}{Q1+Q2}$$

 $\Delta Q$  and  $\Delta P$  are change in quantity and prices.

Thus, the closer the two points P and Q are, the more accurate is the measure of elasticity. If the two points which form the arc on the demand curve  $\frac{108}{108}$  so close that they almost merge into each other, the numerical value of arc elasticity equals the numerical value of point elasticity.

#### (d) Total outlay method

The outlay method is a straightforward and intuitive approach to determining demand price elasticity. It focuses on the relationship between price changes and total spending on a product. When variations in price and demand are not minimal, the outlay approach for measuring price elasticity of demand is utilized. Total outlay is price multiplied by the quantity of a good purchased. i.e., Total outlay = Price x Quantity demanded. The outlay changes with the increase and decrease of price of a commodity.

**Demand** is elastic ( $E_P > 1$ ), when the total outlay varies in the opposite direction as the price change. Thus, when prices decline, total spending rises, and when prices rise, total spending falls. For example, when the price falls from ₹20 to ₹16, the total expenditure increases from ₹150 to ₹180 and when price rises from ₹22 to ₹25, the total expenditure falls from ₹200 to ₹170.

Demand is inelastic ( $E_P < 1$ ), if the total outlay moves in the same direction as the price change, demand is inelastic. That means with the fall in price, the total expenditure falls and with the rise in price, the total expenditure increases. For example, when the price falls from  $\gtrless20$  to  $\gtrless16$ , the total expenditure decreases from  $\gtrless180$  to  $\gtrless150$  and when price rises from  $\gtrless22$  to  $\gtrless25$ , the total expenditure rise from  $\gtrless170$  to  $\gtrless200$ .

Demand is unitary ( $E_P = 1$ ), if the total outlay remains constant regardless of price changes. That means with the fall or rise in price, the total expenditure remains unchanged. For example, when the price falls from ₹20 to ₹16, the total expenditure is ₹170 and when price rises from ₹22 to ₹25, the total expenditure remains ₹170.

Figure 5.3



#### 5.5 FACTORS OF THE PRICE ELASTICITY OF DEMAND

There are several factors that affect the price elasticity of demand

• Nature of the commodity.<sup>2</sup> The elasticity of demand for a commodity varies by its type—necessities exhibit low elasticity, efficiency necessaries and comforts show moderate elasticity, while luxuries demonstrate high elasticity in response to price changes. The demand for necessities like food or salt does not change much with the rise or fall in their prices.

The demand for essential goods like eggs and butter is somewhat elastic, as price changes lead to moderate shifts in demand, while luxury items exhibit greater elasticity, with small price changes causing significant variations in demand.

- Number of the substitutes: Commodities with substitutes exhibit more elastic demand, as changes in the price of one directly influence the demand for its substitute, such as when a rise in coffee prices leads to decreased coffee demand and increased tea demand, whereas commodities without good substitutes tend to have inelastic demand.
- Number of Uses of a commodity: Commodities with multiple uses, like coal, milk, and steel, tend to have more elastic demand; a small decrease in price can significantly boost demand across various applications, while a price increase typically results in a notable drop in demand for less critical uses and efforts to conserve in essential applications.
- Joint Demand: Certain commodities, like cars and petrol or pens and ink, are jointly demanded, meaning that the elasticity of demand

for the secondary commodity hinges on the elasticity of demand for the primary one—for instance, if car demand is inelastic, then so is petrol demand, while elastic demand for pens will similarly result in elastic demand for ink.

• Level of price of a commodity: Price levels also have an impact on the elasticity of commodity demand. When prices are high, demand for commodities is elastic; when prices are low, demand is less elastic. Marshall claims that "demand elasticity is high at high prices and great, or at least significant, at medium prices, but it decreases as the price drops and eventually disappears if the drop is so rapid that satiety is reached".

#### **5.6 SIGNIFICANCE OF PRICE ELASTICITY OF DEMAND**

The price elasticity of demand is particularly significant in a lot of policy decisions, and it is especially beneficial for government policies concerning individual commodity markets.

- Assessing the monopoly price: A monopolist sets product prices based on demand elasticity, opting for lower prices to maximize profit when demand is elastic, while higher prices can be charged when demand is inelastic; similarly, producers in monopolistic competition adjust prices to attract customers based on the elasticity of their product's demand.
- Assessing price under discriminating monopoly: Under monopoly discrimination, pricing varies by market due to demand elasticity, with lower prices set in elastic demand markets and higher prices in those with less elastic demand.
- Assessing the prices of public utilities: The elasticity of demand influences public utilities' pricing strategies, with inelastic services like domestic electricity being priced higher due to fewer substitutes, while industries benefit from lower rates given the availability of alternatives like coal or diesel power.
- Assessing the prices of joint products: The elasticity of demand plays a crucial role in determining the prices of interconnected products like wool and mutton or wheat and straw, as the prices are based on demand elasticity rather than separate production costs, resulting in higher prices for inelastic items like wool and wheat compared to their elastic by-products.
- Assessing of Wages: Elasticity of demand is an important notion in determining pay for a specific type of labour. If an industry's labour account is elastic, strikes and other trade union measures will be ineffective in raising wages. If, on the other hand, labour demand is

inelastic, even the prospect of a union strike will compel employers to raise worker wages in the industry.

• Government Policies: For goods with inelastic demand, governments can impose higher taxes without significantly reducing consumption. This is because consumers are less sensitive to price changes for these goods. Conversely, for goods with elastic demand, higher taxes can lead to a significant decrease in consumption, potentially reducing government revenue.

Subsidizing goods with inelastic demand may not significantly increase consumption, as consumers are already willing to buy them regardless of price. Subsidizing goods with elastic demand can be more effective in stimulating consumption, as consumers are more responsive to price changes.

Imposing price ceilings on goods with elastic demand can lead to shortages, as suppliers may reduce production due to lower profits. Setting price floors for goods with inelastic demand can lead to surpluses, as suppliers may produce more than consumers are willing to buy at the higher price.

Governments can use tariffs to protect domestic industries. However, the effectiveness of tariffs depends on the price elasticity of demand for the imported goods. If demand is elastic, tariffs may lead to a significant decrease in consumption and harm domestic consumers.

#### 5.7 UNIT SUMMARY

This section delves into a crucial aspect of elasticity of demand for a product. This refers to how demand fluctuates in response to changes in its underlying variables. Demand elasticity measures the responsiveness of the quantity demanded of a good or service to a change in its price. It helps businesses to understand how price changes impact their sales and revenue. By knowing demand elasticity, organizations can make informed decisions regarding price, manufacturing, and marketing tactics to meet their goals.

## **5.8 CHECK YOUR PROGRESS**

#### **Multiple-Choice Questions (1 Mark Each)**

Elasticity in economics measures the:

 A) Flexibility of materials
 B) Responsiveness of quantity demanded or supplied to changes in price, income, or other factors
 C) Change in government policies
 D) Market equilibrium

- 2. The elasticity of demand is always:
  - A) Positive
  - B) Zero
  - C) Negative
  - D) Undefined
- If E<sub>P</sub>>1, the demand is said to be:
   A) Inelastic
   B) Elastic

C) Unitary

- D) Perfectly elastic
- 4. The percentage method measures price elasticity as:
  - A) Total quantity divided by total price

B) Percentage change in quantity demanded divided by percentage change in price

C) Price divided by quantity demanded

D) Percentage change in price divided by percentage change in quantity demanded

- 5. If the price of a substitute good rises, the demand for the related good will:
  - A) Decrease
  - B) Increase
  - C) Remain unchanged
  - D) Become inelastic
- 6. What is represented by  $\frac{\Delta D}{D}$ ?
  - A) Change in price
  - B) Proportional change in quantity demanded
  - C) Proportional change in income
  - D) Proportional change in price
- 7. The term "unitary elastic demand" means:
  - A)  $E_P > 1$
  - B)  $E_{P} < 1$
  - C)  $E_P = 1$
  - D)  $E_P = 0$
- 8. A necessity good typically exhibits:
  - A) High elasticity
  - B) Low elasticity
  - C) Perfect elasticity
  - D) Unitary elasticity
- 9. Cross elasticity of demand relates to:

A) Price changes of a commodity

B) Proportional changes in demand and income

- C) Changes in the price of a related commodity
- D) Government policies
- 10. The total outlay method helps measure:
  - A) Cross elasticity of demand
  - B) Elasticity of supply
  - C) Price elasticity of demand
  - D) Income elasticity of demand

#### Short Answer Questions (2 Marks Each)

- 1. Define elasticity of demand.
- 2. Write the formula for price elasticity of demand using the percentage method.
- 3. What does  $E_P < 1$  signify?
- 4. Give an example of a good with high price elasticity.
- 5. Explain the significance of income elasticity of demand.
- 6. What is the cross elasticity of demand between substitutes?
- 7. Differentiate between elastic and inelastic demand.
- 8. State the relationship between total outlay and elastic demand.
- 9. Why do necessities have inelastic demand?
- 10. How is price elasticity useful in taxation policy?

#### Medium-Length Questions (5 Marks Each)

- 1. Describe the percentage method for measuring price elasticity of demand with a formula and example.
- 2. Explain the total outlay method and how it is used to determine elasticity of demand.
- 3. Discuss the factors affecting price elasticity of demand with examples.
- Calculate price elasticity of demand if price decreases from ₹100 to ₹80 and demand increases from 200 to 300 units.
- 5. How does the availability of substitutes affect price elasticity of demand?
- 6. Illustrate the concept of cross elasticity of demand with a practical example.
- 7. Why is price elasticity of demand important for monopolistic pricing strategies?
- 8. Compare price elasticity of demand for luxury goods and necessities.
- 9. Explain the relationship between price elasticity and governmentimposed price ceilings.

10. Discuss the significance of price elasticity of demand in determining wages in an industry.

#### Long Answer Questions (10 Marks Each)

- 1. Define and explain price elasticity of demand, income elasticity, and cross elasticity with relevant examples.
- 2. Discuss the methods of measuring elasticity of demand: percentage method, point method, arc method, and total outlay method.
- 3. Analyze the significance of price elasticity of demand in policymaking and market strategies.
- 4. Elaborate on the relationship between price elasticity of demand and taxation policies with examples.
- 5. Explain the concept of cross elasticity of demand and its implications for substitute and complementary goods.
- 6. Discuss the outlay method with examples to explain elastic, inelastic, and unitary elastic demand.
- 7. How does elasticity of demand influence pricing strategies under a discriminating monopoly?
- 8. Provide a detailed explanation of factors affecting the price elasticity of demand, supported by examples.
- Calculate the price elasticity of demand using the percentage method for the following: Price decreases from ₹50 to ₹40, and demand increases from 500 to 600 units.
- 10. How can the concept of elasticity help businesses make decisions about pricing and output levels?

## 5.9 REFERENCE/ FURTHER READING MATERIALS

1. Jhingan, M.L., Microeconomics 8th Edition, Vrinda Publications (P) Ltd

2. Introductory Microeconomics, IGNOU

3. Kautsoyiannis, A. (1979), Modern Micro Economics, London: Macmillan

4. Mote V, Paul S and Gupta G, 3e, Managerial Economics, 2004, Tata McGraw Hill

# **UNIT 6 THEORY OF PRODUCTION**

#### Objectives

After studying this unit, learners will be able to:

- Understand the concept of production function and its significance
- Understand the law of diminishing returns.
- Understand how much a firm should employ input in-order to produce a targeted product
- Understand how to produce output efficiently and to demonstrate the rate
- Understand which inputs can be changed without affecting the output level

Structure

6.0: Introduction

6.1: Production Function

6.2 Factors of Production

6.3: Significance of production function

6.4: Short run production function

- 6.5: Law of Variable Proportions
- 6.6: Law of Diminishing Returns
- 6.7: Long run production function
- 6.8: Law of Returns to scale
- 6.9: Isoquant
- 6.10: Production Possibility Curve
- 6.11: Unit Summary
- 6.12: Check Your Progress
- 6.13: Reference/ Further Reading Materials

## **6.0 INTRODUCTION**

Production involves the creation of utility and is the final outcome of the manufacturing process. Through production, various goods and

commodities are generated. Therefore, the production function plays a crucial role in fulfilling human needs by generating goods. In economics, production encompasses a wide range of meanings. It refers to offering an item for sale, which can include both tangible and intangible goods. Tangible goods can be marketed through either their manufacturing or simply through trading activities. The latter includes functions like transportation, storage, and packaging of goods.

The production level should match the market demand, and the product quality must fulfill consumer preferences. To generate output, it is necessary to assemble the required materials. These materials belong to a different category and are referred to as 'inputs'. Therefore, we combine the inputs in a specific manner to create a defined amount of output. A production theory examines how a producer mixes different inputs to generate a particular quantity of output when the production technology for the commodity is established. The correlation between the amounts of inputs used and the output generated is known as the production function.

## **6.1 PRODUCTION FUNCTION**

The production function represents the relationship between a firm's physical inputs and outputs during a specific time frame. A factor of production may be defined as that good or service which is required for production. A factor of production is indispensible for production because without it no production is possible. The four factors of production are namely land, labour, capital and organisation. Traditionally, production functions are expressed in terms of the quantities of outputs and inputs. The quality of inputs is considered by incorporating a variable known as technology. This technology variable acts as a distinct input in the production function.

The production function can be written as

Q = f(L, N, K, O)

Where L = Land

N= Labour

K= Capital

O= Organisation

This is a functional relationship between the quantities of inputs and outputs. The output (Q) depends on the quantities of input resources. For

understanding the nature of production the following points may be emphasized:

(a) The production function describes a strictly technical relationship in terms of physical quantities between the input factors and the resulting output of products. It does not take into account any monetary values. Consequently, the price aspect is omitted entirely.

(b) The combined utilization of the factors of production results in the output. It goes without saying that one factor's physical production can only be assessed when it is combined with another factor.

(c) The level of technical knowledge will determine the type or amount of the different components and how they are integrated. For example, the amount of labour, as defined by their education and training will influence labour productivity. In a similar vein, the technological advancements that machines incorporate will affect their productivity.

(d) The variety of the factors of production and their divisible or indivisible nature must be considered when defining a firm's production function.

## **6.2 FACTORS OF PRODUCTION**

A factor of production implies those elements or resources which are used for carrying out production function. As mentioned above, the four factors of production are land, labour, capital and organisation.

Land: Land as a component of production in economics encompasses all of nature's offerings, including rivers, oceans, climate, mountains, fisheries, mining, forests, and more. According to Marshall, "by land is meant materials and forces which nature gives freely for man's aid, in land, water, in air, light and heat".

Labour: All mental and physical labour done for financial gain is referred to as labour. It covers the work of an engineer, doctor, teacher, lawyer, and manufacturing worker, among others. However, work done for pleasure or without compensation is not considered labour.

Capital: Capital refers to all resources created by humans. It includes all wealth except land, which is utilized to produce more riches. Tools, implements, machinery, seeds, raw materials, and transportation infrastructure including roads, railroads, and canals are all included. In contemporary usage, "capital" refers to both human capital—the process of enhancing the knowledge, abilities, and skills of every citizen of the nation—and physical capital.

Organisation: The natural, human, and material means of production are land, labour, and capital, respectively. Without combining these production variables and using them in the proper ratios, no production is conceivable. Therefore, someone has to employ them from their owners, pay them rent, wages, and interest, and determine how much of each is required for production. We call this organization. The term "organization" describes the services of an entrepreneur who innovates, takes on all risks, and controls, plans, and oversees a company's policies.

6.2.1 Characteristics of Land:

- Free gift of nature: To obtain additional factors of production, man must exert effort. However, no human labor is required to obtain land. Human labor does not produce land. Instead, it predated the evolution of man by a considerable amount.
- Fixed Quantity: No changes can be made to the surface area of land; the total amount of land remains constant; it is finite and cannot be expanded or contracted by human endeavor.
- Land is permanent: Everything created by humans is ephemeral and could eventually disappear. However, land cannot be destroyed. It cannot, therefore, cease to exist. It cannot be destroyed.
- One of the main factors of production is land: Land is the first step in every production process.
- Land is immovable: It is not able to be moved from one location to another. For example, no part of a nation's land cannot be transferred to another nation.

## 6.2.2 Characteristics of Labour:

- Labour is perishable: Compared to other production variables, labor is more ephemeral. It implies that work cannot be kept in storage. An jobless worker's labor is forever lost for the day that he is not employed. Work cannot be put off or saved for the following day. It will die. Time is lost forever once it's gone.
- Labour cannot be separated from the labourer: It is impossible to separate labor from laborers: While capital and land can be separated from their owners, labor cannot be divorced from its workers. Both labor and laborers are essential to one another. For instance, it is not feasible to transfer a teacher's skills to the classroom when they are at home. A teacher's efforts are only effective when they are present in the classroom.
- Less mobility of labour Labor is less mobile than capital and other products. Capital is easily carried from one location to another, while labor is difficult to move from one location to another. A worker isn't prepared to leave their hometown to travel far. As a result, labor is less mobile.

- Labour supply is inelastic: At a given moment, a nation's labor supply is inelastic. It implies that their supply cannot be raised or lowered in response to demand. For instance, a nation's supply of a certain kind of worker cannot be expanded in a day, month, or year if that worker type is scarce.
- Weak bargaining power of labour: The ability of the seller to sell their goods at the greatest price and the buyer's ability to buy them at the lowest price is known as bargaining power.
- Labour are both the beginning and the end of production: Production is not possible with just land and money. The only way to begin production is with labor. It implies that labor is where production starts. Human wants are met via the production of goods. The producing process ends when we eat them.Therefore, labour is both the beginning and the end of production.
- Labour creates capital: In actuality, the reward for labour is what creates capital, which is regarded as a distinct factor of production. Wealth is earned by labour through production. We are aware that capital is the part of wealth that is utilized to generate revenue. As a result, labour creates and accumulates capital. Given that capital is the outcome of labour's labour, it is clear that labour plays a more significant role in the production process than capital.
- Labour is an active factor of production: Since they are unable to initiate the production process on their own, land and capital are regarded as the passive components of production. It is only through human effort that production from land and capital begins. Man's active participation marks the beginning of production. Labor is therefore an active factor of production.

#### 6.2.3 Characteristics of Capital

- Man produces capital: The wealth utilized to produce commodities is known as capital. The product of human labor is capital. As a result, man creates all forms of capital, including industries, buildings, roads, and machinery. It is a factor of production that is produced.
- Capital is a passive factor of production: Without the active services of labor, capital cannot generate. It takes labor to manufacture with machines. Therefore, although capital is a passive factor of production, labor is an active one. Nothing can be produced by capital alone until labor is applied.
- Capital is variable: In contrast to the capital supply, which can be expanded or contracted, the overall amount of land cannot be altered. A nation's capital supply rises when its citizens produce more or save more of their income, which they then invest in industries or capital products.
- Capital depreciates: The value of capital continues to decline as we continue to use it. Machines can occasionally deteriorate and lose value when they are utilized continually.

- Capital is stored up labour: Marx and other academics acknowledge that capital is labor that has been stored up. Through their labor, they get wealthy. A portion of this wealth is kept, while the remainder is spent on consumer goods. Savings turn into capital when they are invested. Stated differently, capital is the accumulation of a man's savings. Thus, capital is labor that has been stored up.
- Capital is destructible: All capital goods are not permanent and can be destroyed. Over time, machinery and tools lose their usefulness due to constant use.

## 6.2.4 Characteristics of Organisation

- Division of Work: In organisation the total work of the enterprise is divided into activities and function. For efficient accomplishment various activities are assigned to different persons. This brings in division of labours. Specialization helps in division of work into related activities so that they are assigned to different individuals.
- Co-ordination: Co-ordination of various activities helps in integrating and harmonizing them. Co-ordination avoids duplications and delays. As various functions in an organisation depend upon one another and the performance of one influences the others, all of them should be properly co-ordinate.
- Common Objectives: An organisation is a means towards the achievement of enterprise goals. The goals of various segments lead to the achievement of major business goals. The organization structure is built around common and clear cut objectives. This helps in their proper accomplishment.
- Formalized Processes and Procedures: To regulate their operations, organizations have set up rules, regulations, and procedures. Through these process and procedure consistency of the performance and control are guaranteed by the organisation. Moreover, these formalizations help in making decision easier and less certain.
- Co-operative Operations: Any organisation creates co-operative relationship among various member of the group. It cannot be constituted by one person.

It requires at least two or more persons. Organisations are a system which helps in creating meaningful relationship among persons both vertical and horizontal. The structure should be so designed that it motivates people to perform their part of work together.

• Structure and Hierarchy: Organizations have hierarchical structure with different levels of authority. This structure facilitates decision
making, co-ordination and accountability. It ensures that tasks are assigned and responsibilities are delegated.

# **6.3 SIGNIFICANCE OF PRODUCTION FUNCTION**

The link between the inputs utilized in production and the final output of goods or services is described by the production function, a key idea in economics. In essence, it indicates the amount of output that may be generated from a specific set of inputs.

(a) Understanding the production process: It facilitates the visualization of how inputs—such as labour, capital, and raw materials—are converted into outputs. It allows us to analyse how changes in input quantities affect output levels.

(b) Optimizing resource allocation: Businesses can choose the most effective input combination to save expenses and increase output by comprehending the production function. It helps to identify the optimal level of production to achieve desired profit margins.

(c) Analysing productivity: Productivity, a major factor in economic growth, can be measured using the production function. By analysing how changes in technology or management practices affect output, we can assess improvements in productivity.

(d) Forecasting production: It assists companies in forecasting future production levels based on projected shifts in technology or input availability which helps in crucial planning and decision making.

(e) Policy implications: Production function analysis is a tool that governments can use to create policies that support economic development and growth. For instance, laws that promote spending on technology and education can increase worker productivity and move the production function upward.

(f) Economic modelling: In many economic models, production functions are essential building blocks. They are employed in the analysis of macroeconomic problems such as unemployment, inflation, and economic growth.

# **6.4 SHORT RUN PRODUCTION FUNCTION**

A technical relationship between the elements of production and the maximum output produced, when at least one factor of production remains constant among all the variable factors, is known as a short run production function. It can increase only the level of output by increasing the quantity

of a variable factor and making intensive use of the existing fixed factors. In simple words, in short run, it is possible to increase the quantities of one input while keeping the quantities of other inputs constant in order to have more output. This aspect of production function is known as the Law of Variable Proportions.

A two factor short run production function can be expressed as

 $Q=f(N, \overline{K})$ 

Where Q represents total output

N represents labour

K represents capital

A bar in K represents that the use of capital is kept constant. The supply of capital in short run is assumed to be inelastic.

**Total Product (TP):** The maximum quantity of output (Q) produced at various levels of employment of a factor while holding all other production variables constant is known as the factor's total product.

Total product of Labour  $(TP_L)$  is given by

 $TP_{L}=Q=f(L)$ 

Similarly, the total product of capital is given by

 $TP_K = Q = f(K)$ 

Average Product (AP): Average product is the Sutput produced per unit of factor of production.

Average Product of Labour (AP<sub>L</sub>) is given by

 $AP_L = \frac{Output}{Labour Input} = \frac{Q}{L}$ 

Similarly Average Product of Capital  $(AP_K) = \frac{Q}{K}$ 

Marginal Product (MP): The marginal product of a factor of production the change in total output resulting from a unit change in that component of production while keeping all other factors of production constant.

Marginal Product of Labour (MP<sub>L</sub>) is given by

 $MP_{L} = \frac{Change \text{ in Output}}{Change \text{ in Labour Input}} = \frac{\Delta Q}{\Delta L} = \frac{\partial Q}{\partial L}$ 

Similarly Marginal Product of Capital (MP<sub>K</sub>) =  $\frac{\partial Q}{\partial K}$ 

Where  $\Delta$  denotes "change in" and  $\partial$  denotes "partial change".

# 6.5 AW OF VARIABLE PROPORTIONS

A firm's production function serves as an example of the law of variable proportions when one input changes while all other inputs stay the same. This law focuses on how increasing a variable factor's amount while holding other components constant affects the result.

According to Prof. Leftwitch, "The law of variable proportions states that if a variable quantity of one resource is applied to a fixed amount of other input, output per unit of variable input will increase but beyond some point the resulting increases will be less and less, with total output reaching a maximum before it finally begins to decline".

Figure 6.1: Paw of Variable Proportions



The law of variable proportions is illustrated in the above figure 6.1. The labour is represented on X-axis and the output is represented on Y-axis.

The law of variable proportions can be explained with the help of three stages accordingly:

**Stage I - Stage of Increasing Returns:** In this stage, total product rises at an increasing rate up to a certain point. This happens because the efficiency of fixed factors improves with the addition of more variable factors. In figure 6.1, from the

origin to point F, the slope of the total product curve (TP) is increasing, indicating that the curve is concave upwards until it reaches point F. At this point, in marginal product (MP) of labour begins to rise. The point F is significant because it marks where the total product stops increasing at an increasing rate and transitions to increasing at a diminishing rate; this is known as the point of inflection. At this point, the marginal product of labour is at its peak, after which it starts to decline. This phase is referred to as the stage of increasing returns, as the average product of the variable factor consistently increases throughout this stage. It concludes when the average product curve reaches its highest level.

Stage II- Stage of Diminishing returns: In this stage, total product keeps increasing, but the rate of that increase starts to slow down until it hits its peak at point H, signaling the end of the second stage. During this phase, both the marginal product and average product of labour are decreasing, although they remain positive. This occurs because the fixed factor is becoming less sufficient compared to the quantity of the variable factor being used. By the end of the second stage, identified at point M, the marginal product of labour reaches zero, aligning with the maximum point H on the total product curve TP. This stage is crucial since the firm aims to operate within this range.

**Stage III- Stage of Negative returns:** In third stage, total product decreases, leading to a downward slope of the TP curve. Consequently, the marginal product of labour becomes negative, resulting in the MP curve falling below the X-axis. At this point, the amount of variable factor (labour) exceeds what is optimal in relation to the fixed factor.

Causes of increasing returns to scale:

- In the early stages, the fixed factor is not fully utilized. As its usage increases, it leads to a greater application of the variable factor. Therefore, in the beginning, adding more units of the variable factor significantly boosts total output.
- The efficiency of the variable factor improves with increased application, leading to a process-oriented division of labour that enhances overall effectiveness. As a result, the marginal productivity of this factor tends to increase.

Causes of diminishing returns to scale:

- As more units of the variable factor are combined with the fixed factor, the latter becomes increasingly over-utilized, leading to diminishing returns.
- Imperfect factor substitutability refers to the idea that the factors of production—like labour and capital—are not perfect substitutes for

one another. This means that, as we increase the amount of labour, we can't always rely on it to smoothly replace additional capital.

# 6.6 LAW OF DIMINISHING RETURNS

According to a basic economic theory known as the law of diminishing returns, a gain in output will eventually decline if one input in a manufacturing process is increased while other inputs remain constant. Put more simply, production will eventually increase at a slower rate if a fixed number of other resources are combined with increasing amounts of one resource.

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

Marshall applied the concept of law of diminishing returns to agriculture. According to Marshall, the law of diminishing returns states that, unless it coincides with advancements in agricultural techniques, an increase in the capital and labour used in land cultivation generally results in a smaller than commensurate rise in the amount of produce raised.

Consider a farmer who owns a certain quantity of land. First, increasing the number of employees (a variable element) will raise the overall output of the crops. Nevertheless, the extra output from each additional employee will soon begin to decrease as the workforce grows. This is due to the fact that a specific number of workers can only be effectively supported by the limited amount of land.





Law Of Diminishing Marginal Returns

Let us consider an agricultural field. Because of the dominance of nature in agriculture, the law of diminishing returns applies rapidly. In agriculture, the fixed factor (i.e., land) can be used with increasing amounts of labour and capital to produce more. The amount of fixed land cannot be altered to suit

the agriculturist's preferences. Therefore, the law of diminishing returns applies as the marginal product decreases as more and more variable components are used in conjunction with the fixed factors.

**Stage I: Increasing Returns**: In this stage, each extra unit of the variable input causes the total output to increase at an accelerating rate. Because the constant components are initially more plentiful than the variable factors, we see growing returns in the first stage. The efficient use of the fixed factors results from the addition of more units of the variable factor. Consequently, output rises at a rising rate.

**Stage II: Diminishing returns**: The whole product grows at a decreasing rate throughout this phase. This occurs as a result of the marginal product declining and falling short of the average product, which likewise experiences a negative slope. As a result, this phase is referred to as the declining returns stage. When the result, this stage is over. The output begins to decrease once a specific number of variable inputs are added, which results in the most effective and efficient use of fixed input.

**Stage III: Negative returns**: At this stage, adding too many variable inputs results in negative returns. The crowding of the variable components is the source of this. We conclude from this that a logical producer would work at the second stage of production, where marginal and average products have a tendency to drop.

# 6.7 LONG RUN PRODUCTION FUNCTION

In a scenario where every input, including capital, can be adjusted, the relationship between output and these inputs is referred to as the long-run production function. This function examines how output is affected when all production factors can be modified at the same time and in equal proportions. Over the long term, a firm has the flexibility to increase or decrease all inputs in line with its scale, a concept known as fetures to scale.

A two factor long run production function can be expressed as

Q=f(N, K)

Where Q represents total output

N represents labour

K represents capital

The basic assumption we make about the production function is monotonicity, which means as the factor labour (N) increases, given the factor capital (K), the production Q also increases. Similarly as the factor capital (K) increases, given the factor labour (N), the production Q increases.

Thus, the first derivative of the production function is positive w.r.t. N and K. i.e., f'(N) > 0, f'(K) > 0.

# 6.8 OF RETURNS TO SCALE

The law of returns to scale describes the relationship between outputs and the scale of inputs in the long run when all the inputs are increased in the same proportion.

According to Roger Mill, the link between changes in output and proportionate changes in all production parameters is known as the law of returns to scale.

then all inputs are increased in unchanged proportions and the scale of production is expanded, the effect on output shows three stages.

Firstly, returns to scale increase because the increase in total output is more than proportional to the increase in all inputs.

Secondly, returns to scale become constant as the increase in total product is in exact proportion to the increase in inputs.

Lastly, returns to scale diminish because the increase in output is less than proportionate to the increase in inputs.

Figure 6.3: Law of returns to scale



In figure 6.3 AH is the returns to scale curve where A to K are increasing, from K to C, they are constant and from C onwards they are diminishing.

Stage I: Increasing returns to scale: The indivisibility of the factors of production leads to an increase in returns to scale. Indivisibility is the inability to have very small quantities of labour, finance, management, machinery, etc. Only specific minimum sizes are available. Because the indivisible elements are used to their fullest potential when a business unit grows, the returns to scale also increase. Divided labour and specialization also lead to increased returns to scale.

There is a lot of room for specialization and labour division as the firm grows in size. Workers can be focused on a smaller range of procedures and work can be broken up into smaller jobs. Additionally, the company benefits from internal economies of production as it grows. In addition, a company benefits from growing returns to scale as a result of external economies. External economies emerge when the industry itself grows to satisfy the higher long-term demand for its goods, and all of the companies in the industry share these economies.

**Stage II: Constant returns to scale:** The potential for increasing returns to scale is not limitless. As a firm expands, it faces both internal and external economies that are balanced out by internal and external diseconomies. To achieve steady returns to scale across large output levels, the returns must increase in a consistent manner. In the illustration above, figure 6.3, the returns to scale curve is depicted as horizontal (KC), indicating that the increase in each input remains constant regardless of the output level.

**Stage III: Diminishing returns to scale**: Continuous **Eu**rns to scale are just a temporary situation because they eventually begin to decline. Indivisible elements could become less productive and inefficient. Business can become disorganized and lead to issues with coordination and management. Large management leads to rigidities and control issues. Cost increases and business growth result in diminishing returns to scale, meaning that increasing scale won't double output.

#### **6.9 ISOQUANT**

An isoquant is a curve on which the various combinations of labour and capital show the same output.

According to Cohen and Cyret, "An isoquant curve is a curve along which the maximum achievable rate of production is constant". Isoquant is also known as a production indifference curve or a constant product curve.

An isoquant Can be explained with the help of an arithmetical example.

Table 6.1: Isoquant schedule

Combinations	Units of Capital	Units of Labour	Total Output
Α	20	4	150
В	15	8	150
С	10	12	150
D	5	16	150

From the above table 6.1, the first, second, third and fourth combinations are shown as A, B, C and D respectively. The firm can produce 150 units of output for combination A by having a combination of 20 units of capital and 4 units of labour. Moreover, by having a combination of 15 units of capital and 8 units of labour, the output produced is 150 units for combination B. Similarly, for combinations C and D, the output produced is 150 units.

Figure 6.4 Isoquant



Labour

#### 6.9.1 **Properties of Isoquants**

Isoquant possess certain properties which are similar to those of indifference curve:

(a) Isoquants are negatively inclined: An isoquant stopes downward from left to right. It implies that both capital and labour increase but they produce the same output. This is because inputs are substitutes to some extent i.e. we can replace one with another to achieve the same result.

(b) Higher isoquants represent higher output level: The isoquant which lies above and right to one other represents higher output. That means isoquants further from the origin represents higher level of output. This is because as you move away from the origin, you are using more of both inputs, leading to a higher production level.

(c) No two isoquants can intersect each other: This is because each isoquant represents a specific level of output. If two isoquants intersected, it would imply that the same combination of inputs could produce two different levels of output, which is not possible.

(d) Isoquants need not be parallel: The rate of substitution between two factors is not necessarily the same in all the isoquants schedules. This is because the production function, which determines the relationship between inputs and output, can have different shapes, leading to different isoquant curves.

(e) In between two isoquants there can be a number of isoquants showing various levels of output which the combinations of the two factors can yield.

(f) Each isoquant is convex to the origin

(g) No isoquant can touch either axis: This is because if it touches any axis, it means that the product is being produced with the help of only one factor leaving other factor unutilised which is not possible.

# 6.10 PRODUCTION POSSIBILITY CURVE (PPC)

The different combinations of commodities and services that an economy can generate given its finite resources and technology within a particular time period are represented graphically by a production possibility curve, also known as a production possibility frontier (PPF).

An economy's graphical alternate production options are represented by the production possibility curve. A variety of alternative goods can be produced using the community's production resources. However, due to their scarcity, one must choose among the other products that can be manufactured.

Let us consider two goods butter and guns are produced by an organisation. This can be represented in following table

Point	Butter (units)	Guns (units)
Α	30	10
В	25	15
С	20	25
D	15	35
X	10	50

Table 6.2: Production Possibility Curve

Plotting all the points we get a non-linear curve called production possibility curve. The shape of the curve is concave from the point of origin. As long as the organisation is producing along the curve, we consider each production combination to be efficient. It means it is maximising all the resources available in the organisation. The point B, D and C is considered efficient. But the point inside the PPC is considered to be inefficient. From the figure 6.5, the point A is considered to be inefficient. This means using the given resources, the organisation is under employing. Moreover, the point outside PPC is considered to be unattainable. It means that there are no enough resources to produce butter and guns with the given amount of resources.

Figure 6.5: Production Possibility Curve



#### 6.10.1 Applications of Production Possibility Curve

(a) **Understanding economic trade-offs:** By analysing the PPC, decisionmakers can visualize the trade-offs involved in allocating resources between different goods and services

(b) **Evaluating economic growth:** A shift outward of the PPC indicates economic growth, allowing for increased production of both goods

(c) Analysing the impact of technological advancements: Technological advancements can shift the PPC outward, expanding the production possibilities.

# 6.11 UNIT SUMMARY

Production function represents the relationship between a firm's physical inputs and outputs during a specific time frame. The four main factors of

production are land, labour, capital and organisation. The impact of increasing the amount of a variable factor while holding other factors constant is the main focus of the law of variable proportion. By applying these concepts, businesses can make informed decisions about resource allocation, production processes, and pricing strategies. Moreover, people and governments can make well-informed decisions regarding resource allocation and economic growth by comprehending the ideas presented by the PPC.

# 6.12: CHECK YOUR PROGRESS

# **Multiple-Choice Questions (1 Mark Each)**

- 1. What does the production function express?
- A) Monetary values of production
- B) Relationship between physical inputs and outputs
- C) Profitability of production
- D) Costs of production
- 2. Which is NOT a factor of production?
- A) Land
- B) Labour
- C) Capital
- D) Revenue
- 3. What does "K" represent in the production function Q = f(L, N, K, O)?
- A) Labour
- B) Land
- C) Capital

D) Organisation

4. Which stage of the law of variable proportions is characterized by increasing marginal returns?

A) Stage I

B) Stage II

C) Stage III

D) None

5. What is the production function in the short run?

A)  $Q = f(N, \overline{K})$ 

B) Q = f(N, K)

C) Q = f(K, O)

D) Q = f(L, K)

6. What does "isoquant" represent?

A) Equal profit combinations

B) Equal output combinations

C) Equal cost combinations

D) None of the above

7. Who described "land" as materials and forces provided by nature for production?

A) Alfred Marshall

B) Roger Mill

C) Prof. Leftwitch

D) Benham

8. What happens to total product during Stage III of the law of variable proportions?

A) It increases at an increasing rate

B) It remains constant

C) It declines

- D) It increases at a diminishing rate
- 9. Marginal product is calculated by:
- A) Total Output / Total Input
- B) Change in Output / Change in Input
- C) Total Output Total Input
- D) None of the above
- 10. Which concept applies only in the short run?
- A) Returns to scale
- B) Law of variable proportions
- C) Isoquant analysis
- D) Long-run production function

#### Short Answer Questions (2 Marks Each)

- 1. Define a production function in economic terms.
- 2 Differentiate between "average product" and "marginal product." What is the significance of the technology variable in the production function?
- 4. Explain the law of diminishing returns with an example.
- 5. Describe the importance of organization as a factor of production.
- 6. What happens to marginal product at the end of Stage II of the law of variable proportions?
- 7. Write the expression for average product of labour (APL) and marginal product of labour (MPL).
- 8. Explain the role of fixed and variable factors in the short-run production function.
- 9. Why is the law of returns to scale relevant for long-run production analysis?
- 10. What are the causes of diminishing returns to scale?

### Medium-Length Questions (5 Marks Each)

- 1. Explain the law of variable proportions with the help of a diagram.
- 2. Discuss the three stages of the law of variable proportions and their implications for production.
- 3. Describe the factors of production with examples for each.

- 4. How does technological advancement affect the production function?
- 5. Explain the concept of isoquants and their significance in production analysis.
- 6. What is the role of capital as a factor of production? Discuss its types.
- 7. Discuss the relationship between total product, average product, and marginal product with a diagram.
- 8. Explain how a business can optimize resource allocation using production function.
- 9. Discuss the implications of the law of diminishing returns in agriculture.
- 10. How does the production function assist in economic modeling and policy formulation?

# Long Answer Questions (10 Marks Each)

- 1. Define the production function. Explain its importance and applications in economic analysis.
- 2. Explain in detail the law of returns to scale and its stages with examples.
- 3. Discuss the interrelationship between land, labour, capital, and organization in the production process.
- 4. Compare and contrast short-run and long-run production functions.
- 5. Explain the law of diminishing returns and its practical applications in various industries.
- 6. Describe the causes and effects of increasing and diminishing returns to scale with examples.
- 7. Analyze the role of the production function in optimizing resource allocation and forecasting production.
- 8. Explain the law of variable proportions and its relevance in modern production practices.
- 9. How does the concept of isoquants help in understanding production efficiency?
- 10. Discuss the factors influencing labour productivity and their impact on the production function.

#### 6.13: Reference/ Further Reading Materials

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2. Mote V, Paul S and Gupta G, 3e, Managerial Economics, 2004, Tata McGraw Hill

3. Koutsoyiannis. A, 2e, Modern Microeconomics, 1979, St. Martin's Press, Inc.

4. Introductory Microeconomics, IGNOU

# **UNIT 7 THEORY OF COST**

## Objectives

After studying this unit, learners will be able to:

- Understand the cost concepts that are frequently used in the managerial decisionmaking process
- Understand how production decisions affect their costs and profits.
- Understand the basic cost concepts and the cost output relationship in the short runs and long runs
- Differentiate between private costs and social cost Structure

7.0: Introduction

- 7.1: Determinants of Cost
- 7.2: Accounting Cost and Economic Cost
- 7.3: Production Cost
- 7.4: Opportunity Cost
- 7.5: Private Cost and Social Cost
- 7.6: Average Cost and Marginal Cost
- 7.7: Total Revenue, Average Revenue and Marginal Revenue
- 7.8: Cost Function
- 7.9: Short run Cost
- 7.10: Long run Cost
- 7.11: Unit Summary
- 7.12: Check Your Progress
- 7.13: Reference/ Further Reading Materials

## 7.0 INTRODUCTION

Cost is the amount spent in order to create a specific good or service. Every expense entails making some sort of sacrifice in order to obtain a benefit. Costs can be measured objectively or subjectively, monetary or non-monetary, and tangible or non-physical. The cost of labor, raw materials,

and other expenses are typically included in the cost of manufacturing. The production function indicates the amount of output that a company can generate with its current machinery and plants. Prices and costs determine the output level. The output rate that maximizes total profit—that is, the difference between total revenue and total cost—is the most desired.

#### 7.1 DETERMINANTS OF COST

The cost of producing goods and services varies from company to company and is dependent on a number of input parameters used by the organization. The primary factors that determine costs are:

(a) Input Cost: The overall production costs are significantly influenced by raw material prices. Fluctuations in commodity prices can greatly affect a company's profitability. Additionally, employee wages and salaries contribute substantially to production expenses. Factors like minimum wage laws, union agreements, and employee benefits can all affect labour costs. Moreover, the cost structure is influenced by capital expenses, which encompass loan interest rates, machinery depreciation, and facility rental costs.

#### (b) Production Process and Efficiency:

- Technology plays a crucial role in modern production by enhancing efficiency and productivity, which can lead to reduced costs. That said, it's important to keep in mind that the initial investment in technology can be quite considerable.
- When production scales up, businesses often experience economies of scale, where the average costs decline because of benefits like bulk purchasing discounts and increased operational efficiency.
- The selection of the production process also has significant implications for costs. Whether a business opts for labour-intensive methods or invests in capital-intensive processes can greatly affect overall expenses.
- Lastly, maintaining operational efficiency is key. Focusing on practices such as effective inventory management, supply chain optimization, and minimizing waste can contribute significantly to driving down costs.

(c) Government Regulations: Taxes, tariffs, and environmental regulations can drive up the costs of production.

(d) Inflation: Increases in general prices have the potential to reduce purchasing power and increase input costs.

(e) Sudden Disruption: Natural disasters, economic downturns, and geopolitical conflicts can interrupt supply chains and drive costs up.

# 7.2 ACCOUNTING COST AND ECONOMIC COST

The overall financial outlays incurred by a business in the production of a good are known as accounting costs or money costs. These consist of labour earnings and salaries, raw material costs, equipment and machine purchases, depreciation and obsolescence charges on machinery, buildings and other capital items, taxes of all kinds, etc. When an entrepreneur is paying the several components of production, they take accounting costs into account. Explicit costs are another name for the money costs that an accountant enters into the company's books.

Payments made to external input suppliers are known as explicit costs. Implicit costs are another category of economic costs. The estimated worth of the business owner's own assets and services is known as implicit costs. According to Salvatore, "Implicit costs are the value of owned inputs used by the firm in its own production process". The anticipated rent for the building, if it is owned by the entrepreneur, interest on capital invested by the entrepreneur at the market interest rate, and the pay of the owner management who is happy with regular earnings but does not receive any compensation. Therefore, accounting costs and implicit costs.

Using an example, let's look at the ideas of accounting cost and economic cost: X owns a modest business. X has made an equity investment of  $\overline{\xi}75,000$  in the store and inventory. He must subtract the cost of items sold, employee wages, and building and equipment depreciation from his  $\overline{\xi}2$  lakhs yearly turnover to determine the store's annual profit. To produce the annual income statement, X sought the assistance of a buddy who works as an accountant. According to the accountant, the profit was  $\overline{\xi}1$  lakh. Unbelieving, X sought the assistance of another acquaintance who works as an economist. He was informed by the economist that the true profit was  $\overline{\xi}50,000$  rather than  $\overline{\xi}1$  lakh. By excluding the implicit costs of X's time as manager of the company and interest on owner's stock, the accountant understated the costs, according to the economist. The two income statements are shown in table 7.1

Table 7.1: Income Statement of X

Income statem	ent pre	epared b	у	Income	statemer	nt prep	pared	by
Accountant			Economists					
	D	D				D	D	
Sales		200000		Sales			20000	0

Explicit costs			Explicit costs		
Cost of goods	50000		Cost of goods	50000	
sold			sold		
Salaries	40000		Salaries	40000	
Depreciation	10000	100000	Depreciation	10000	100000
			Implicit costs		
			Salary to owner	45000	
			Manager		
			Interest on	5000	50000
			owners' equity		
Accounting		100000	Economic profit		50000
profit					

# 7.3 PRODUCTION COST

Numerous fixed and variable parameters are used in the production process. They are paid at different rates. The expenses spent on them represent a company's overall manufacturing costs. Total fixed costs and total variable costs are the two categories into which these expenses are divided.

Total variable costs (TVC) are production expenses that vary according to the firm's output. Higher outputs necessitate higher inputs of labour, fuel, electricity, raw materials, etc., raising manufacturing costs. Variable expenses decrease as production decreases. When production completely ends, they come to an end. Marshall referred to these variable expenses as the production's prime costs.

According to Marshall, total fixed costs (TFC), also known as supplementary costs, are production expenses that remain constant regardless of changes in output. These include depreciation charges, rent and interest payments, permanent staff wages and salaries, and more. Even if the company temporarily halts manufacturing, it still has to suffer fixed expenditures. In business jargon, these expenses are referred to as overhead costs because they exceed the typical costs of production.

Mathematically  $\bigtriangledown$  can represent total cost (TC) as: TC = TFC + TVC

Figure 7.1: Graphical representation of TC, TFC and TVC



Only in the short term is the distinction between fixed and variable expenses valid. Even if a company is selling its goods at a loss in the short term, it will keep making as long as its variable costs are met. If it doesn't, it will shut off. However, over an extended period, all costs are variable because the company can alter its fixed plant, equipment, labour force, etc. As a result, all expenses eventually become variable, and the company must pay them at the going rate or else it will go out of business.

# 7.4 OPPORTUNITY COST

Due to limited resources, it is not possible to produce everything at once. They must therefore be removed from other uses if they are being utilized to make one thing. Therefore, the sacrificed alternative is the price of the one. It is the chance lost or the choice given up when one thing is used instead of the other, or when a factor is put to use for one purpose rather than another. According to Benham, "The opportunity cost of anything is the next best alternative that could be produced instead by the same factors or by an equivalent group of factors, costing the same amount of money".

Opportunity cost includes both explicit and implicit costs. Explicit costs are those expenses which are incurred by the firm in buying the goods and services directly. They include wages and salaries, payments for raw materials, power, taxes etc. Implicit costs are the imputed value of the entrepreneur's own resources and services.

Figure 7.2: Graphical representation of Opportunity Cost



The concept of opportunity cost is illustrated in figure 7.2 with the help of the production possibility curve. Let us consider CD is the production possibility curve. X –axis represents the quantity of labour force and Y-axis represents the capital incurred. At combination A on PPC, the producer uses  $OL_1$  of labours and  $OK_1$  of capital. From the figure, if the producer wants to use  $L_1L_2$  more labour, he or she have to forgo  $K_1K_2$  of capital. Thus the opportunity cost of  $L_1L_2$  labour is  $K_1K_2$  of capital.

# 7.4.1 Significance of Opportunity Cost

The concept of opportunity cost has wide application to economic problems:

- It is applicable to the determination of factor prices and in international trade
- It can also be applied to consumption and public expenditure.
- The phenomenon of price is explained by the opportunity cost. Goods and services are scarce, thus they are used for other purposes and fetch a higher price. There wouldn't be any price, opportunity cost, or lost alternatives if they were abundant. Because of the opportunity cost, they are priced.

# 7.4.2 Limitations of Opportunity Cost

The concept of opportunity cost is not free from certain limitations:

- It does not apply to fixed factor services; as a fixed or specific factor has no other options, its opportunity cost is zero.
- Their prices do not represent opportunity cost if factors are either barred from migrating or are themselves hesitant to switch to different vocations

- The costs incurred by individuals and society may differ. A smoky factory in the middle of the town might need a significant sacrifice of other options in the form of health risks that are incalculable.
- It is frequently difficult to determine the alternatives that are sacrificed. There is absolutely no issue if the alternatives are readily discernible. However, once established, the factor has no other option if it is lumpy, as in the contemporary complicated producing system. The opportunity cost of durable capital equipment is zero. However, the price of the product that it aids in producing does include its cost.
- It is predicated on the idea of ideal competition, which does not exist in practice.

# 7.5 PRIVATE COST AND SOCIAL COST

The terms private and social costs were first used by Pigou in 1932 in his book "The Economics of Welfare".

**Private costs**: The expenses that a person or business directly incurs when participating in an economic activity are referred to as private costs. When making decisions, the decision-maker takes these internal costs into account. These expenses are incurred by a business when it produces a good or service. Explicit and implicit expenses are among them. However, a company's production operations could either benefit or hurt other people financially. E.g. environmental pollution from the production of goods like steel, rubber, chemicals, etc., has a negative societal impact.

They are directly borne by the person or organization making the choice. These include labour, raw material, rent, and utility costs, which are easily quantified. Economic decisions are heavily influenced by private costs since people and businesses want to cut expenses and increase revenues.

**Social Costs:** The overall expense that society bears as a result of an economic activity is referred to as social costs. This covers both internal and external expenses. E.g. production of such services as education, sanitation services, park facilities etc. leads to social benefits. Consider education, which not only increases beneficiaries' wages and other forms of satisfaction but also produces more intelligent members of society.

Understanding social costs is essential for policymakers to create effective policies to address market failures and promote sustainable development. When there are significant external costs, markets frequently fail to allocate resources efficiently because individuals and firms only consider their private costs and benefits, not the broader social costs and benefits. Social costs are the sum of the private expenses of production and the financial harm done to others, like contamination of the environment, etc.

# 7.6 TOTAL COST, AVERAGE COST AND MARGINAL COST

**Total Cost (TC):** Total cost (TC) is the sum of all the expenses, explicit and implicit, incurred to produce a specific level of production. It stands for the overall monetary value of the resources needed to produce goods and services.

Average Cost (AC): Average cost (AC) also known as average total cost (ATC), is a crucial economic concept that represents the cost per unit of output. It is determined by dividing the entire amount produced by the total cost of production. Thus

 $AC = \frac{TC}{N}$  where TC- Total cost, N- total quantity produced.

**Marginal Cost (MC):** The change in total cost that results from a one-unit change in output is known as the marginal cost (MC). The additional expense of manufacturing one more unit is known as MC. One looks at the extra expenses involved in making one more unit at a specific output level, and this yield.

# 7.7 TOTAL REVENUE, AVERAGE REVENUE AND MARGINAL REVENUE

**Total Revenue (TR):** Total revenue is the amount of money a producer or seller makes after selling their product. Actually, the multiple of price and output equals total revenue. The market in which the company manufactures or sells determines how overall revenue behaves. The price per unit multiplied by the number sold is the total revenue at any given output.

Thus, TR= AR x Q, where AR- Average Revenue, Q- Total Output

Average Revenue (AR): Average revenue (AR) refers to the revenue obtained by the seller by selling the per unit commodity. It is obtained by dividing the total revenue by total output.

According to Stonier and Hague, "The average revenue curve shows that the price of the firm's product is the same at each level of output."

According to McDonnell, "Average revenue is the per unit revenue received from the sale of one unit of a commodity".

Thus,  $AC = \frac{TR}{Q}$  where TR- Total Revenue, Q- Total output

**Marginal Revenue (MR):** Marginal revenue (MR) is the net revenue obtained by selling an additional unit of the commodity.

According to Ferguson, "Marginal revenue is the change in total revenue which results from the sale of one more or one less unit of output".

According to Koutsoyiannis, "The marginal revenue is the change in total revenue resulting from selling an additional unit of the commodity."

Thus, marginal revenue is the addition made to the total revenue by selling one more unit of the good.

# 7.8 COST FUNCTION

The cost function expresses a functional relationship between total cost and factors that determine it. Usually, the factors that determine total cost of production (C) of a firm are the output (Q), the level of technology (T), the prices of factors ( $P_f$ ) and the fixed factors (F).

Symbolically, the cost function becomes

 $C=f(Q, T, P_f, F)$ 

The cost function is observed both in short run and the long run. The production costs that a business incurs during a specific time period when one or more production components are fixed in quantity are known as short-run costs. As a result, the company has both variable and fixed costs.

One the other hand long-term costs are also known as planning costs or ex ante costs since they show the best opportunities for output growth and assist the entrepreneur in organizing their future endeavours. Over time, there are no fixed costs because there are no fixed factors of production. Since every variable is subject to change over time, so are all costs. Because of its fixed capital equipment, the company makes plans for the future. However, it is based on each plant's short-term cost curves.

In order to simplify the cost analysis, certain assumptions are made:

- It is assumed that a company uses specific production elements to create a single homogenous good
- It is assumed that some of the factors above mentioned are employed in fixed quantities, whatever the level of output of the firm in the short run.

- The remaining factors are variable whose supply is assumed to be known and available at fixed market prices
- The technology which is used for the production of the good is assumed to be known and fixed
- It is assumed that the company modifies the use of variable factors so that a specific good output is achieved at the lowest possible overall cost

# 7.9 SHORT RUN COST

The short run is a period in which the firm cannot change its plant, equipment and the scale of organisation. To meet the increased demand, it can raise output by hiring more labour and raw materials or asking the existing labour force to work overtime.

The scale of organisation being fixed, the short run total costs (TC) are divided into total fixed costs (TFC) and total variable costs (TVC)

TC = TFC + TVC

Total costs are the total expenses incurred by a firm in producing a given quantity or a commodity. They include payments for rent, interest, wages, taxes, expenses on raw materials etc.

Total fixed costs are manufacturing expenses that remain constant regardless of output. They are independent of the level of output. In fact, they have to be incurred even when the firm stops production temporarily.

Total variable costs are those costs of production that change directly with output. They rise when output increases and fall when output declines.

Figure 7.3: Short run cost curve



The curves relating these three costs are shown in figure 7.3. The TC curve is a continuous curve which shows that with increasing output total costs also increases. This curve cuts the vertical axis at a point above the origin and rise continuously from left to right. This is because even when no output is produced, the firm has to incur fixed costs. The TFC curve is shown parallel to X –axis or output axis because total fixed costs are the same whatever the level of output.

Since the TVCs are zero when the output is zero, the TVC curve has an inverted S shape and begins at the origin (O). As output rises, so do they. The total variable costs increase at a declining pace as long as the company uses fewer variable components relative to the fixed factors. However, the rule of variable proportions causes them to climb sharply at a certain point when more variable components are used in proportion to the fixed factors. The TC curve follows the TVC curve at the same vertical distance because the TFC curve is a horizontal straight line.

Short Run Average Costs: Average expenses are more significant than total costs in the firm's short-term analysis. A company's costs vary depending on how many units of output it produces. However, they have to be offered at the same cost. Thus, the company has to know the average cost or the cost per unit. The average fixed costs, average variable costs, and average total costs are a company's short-term average costs.

Average Fixed Costs (AFC) equal total fixed costs at each level of output divided by the number of units produced.

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

As output rises, average fixed costs steadily decline. This makes sense because average fixed costs continuously decrease when a constant total fixed cost is split by an output unit that keeps rising. Thus the AFC curve is a downward sloping curve which approaches the quantity axis without touching it, as shown in figure 7.4. It is a rectangular hyperbola.

Short Run Average Variable Costs (SAVC) equal total variable costs at each level of output divided by the number of units produced

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

The average variable costs decline with the rise in output as larger quantities of variable factors are applied to fixed plant and equipment. But eventually they begin to rise due to the law of diminishing returns. Thus SAVC curve is U-shaped as shown figure 7.4

Short Run Average Total Costs (SATC) or (SAC) is the average costs of producing any given output. They are arrived at by dividing the total costs at each level of output by the number of units produced.

$$SATC = \frac{TC}{Q} = \frac{TFC}{Q} + \frac{TVC}{Q} = AFC + AVC$$

Short Run Marginal Costs (SMC): The marginal cost is a key idea for figuring out the precise amount of production that the company produces. Adding a unit of production to the total cost is known as the marginal cost.

$$SMC = \frac{\Delta TC}{\Delta Q}$$

Figure 7.4: Short run cost schedule



Both average fixed costs and average variable costs have an impact on average total costs. Because both average fixed costs and average variable

costs are high, average total costs are initially high at low output levels. However, the average total costs decrease significantly as output rises due to the average fixed and variable costs steadily declining until they approach the minimum. This derives from the internal economies, from greater utilisation of existing plant, labour etc. In figure 7.4, ideal capacity is represented by the minimal point B. After this, the average total costs climb rapidly as output increases since the average fixed costs barely decrease in comparison to the average variable costs, which are increasing. Producing above capacity and the emergence of internal labour, management, and other diseconomies are the causes of the rising component of the SATC curve. Thus the SAC curve is U- shaped as shown in figure 7.4.

#### 7.9.1 Relationship of Short Run Cost Curves

The relationships of short run cost curve are explained in figure 7.4

- The AFC curve declines continuously and is asymptotic to both axes. It means that the AFC curve approaches both axes but never touches either axis. Thus, the AFC curve is a rectangular hyperbola
- The SAVC curve first declines, reaches a minimum at point A and rises thereafter. When the SAVC curve reaches its minimum point A, the SMC curve equals the SAVC curve.
- The SATC curve first declines, reaches a minimum at point B and rises thereafter. When the SATC curve reaches its minimum point B, the SMC curve equals the SATC curve. Since SATC= AFC+ AVC, the vertical distance between SATC and the SAVC curves gives the AFC curve. As output expands, the vertical distance between the SATC curve and SAVC curve declines because of the falling AFC curve.

## 7.9.2 Relationship between Average Cost and Marginal Cost

There is a direct relationship between average cost (AC) and marginal cost (MC) curves as shown in figure 7.5. Both AC and MC curve are U shaped.

Figure 7.5: Graphical relation between AC and MC



- When AC falls, MC is less than AC. This is because the fall in MC is related to one unit of output while in the case of AC the same decline is spread over all units of output. That is why the fall in AC is less and that in MC is more. This also explains the fact that MC reaches its minimum point C before the minimum point B of AC is reached. So when MC starts rising, AC is still declining.
- When AC is minimum, MC equals AC. The MC curve cuts the AC curve from below at its minimum point B
- When AC rises, MC is greater than AC. MC is above AC, when AC is rising but the rise in MC is greater than AC. This is because the rise in MC is the result of the increase in one unit of output while in the case of AC the same increase is spread over all units of output.
- Nothing can be said about the direction of MC, when AC rises or falls. When AC is falling, it is not essential but MC must fall. MC can increase or fall but it is definite that MC will be less than AC. Similarly, when AC is increasing, it is not essential that MC must rise. MC can fall or rise but it is definite that MC will be larger than AC. But if AC is constant, MC must be constant.
- Relation between AC and MC is the same in the short run and the long run. But their shapes differ; both AC and MC are U-shaped in the short run and flat in the long run.

#### 7.9.3 Relationship between SMC and SAVC

The SMC curve bears a close relationship to the SAVC curve along with SATC curve. So long as the SMC curve lies below the SAVC and SATC curves, it continues to fall and its rate of fall is greater than that of SATC and SAVC curve. But the SAVC and SATC curves start rising from the points M and L respectively where the SMC curve touches them. The SMC curve passes through the minimum point M of the SAVC curve to the left of the minimum point L of the SATC curve. Since AC is total sum of SAVC and AFC, therefore when SAVC is at its minimum point, AFC is falling and

it takes time for SATC to reach its minimum point. M and L are thus the respective minimum points of the SAVC and SATC curves. After these points, the SMC curve rises sharply and is above the SAVC and SATC curves.

Figure 7.6: Graphical representation of SMC and SAVC



Hence, the short run cost curves of a firm are the SAVC curve, the AFC curve, the SATC curve and the SMC curve. Among all these curves, the AFC curve is insignificant for the determination of the firm's exact output and is therefore generally neglected.

#### 7.10 LONG RUN COST

Since there are no longer any fixed factors of production, there are eventually no fixed expenses. The company can alter the plant's size or scale and use more or fewer inputs. As a result, all costs are variable over the long term, just as all factors are.

The long run average total cost (LRAC) curve of the firm shows the minimum average cost of producing various levels of output from all possible short run average cost curves (SRAC). Thus the LRAC curve is derived from the SRAC curves. The LRAC curve can be viewed as a series of alternative short run situations into any one of which the firm can move. Each SRAC curve represents a plant of a particular size which is suitable for a particular range of output. The firm will therefore make use of the various plants up to that level where short run average costs fall with increase in output. It will not produce beyond the minimum short run average cost of producing various output from all the plants used together.





Figure 7.7 shows  $SRAC_1$  and  $SRAC_2$  as a small factory,  $SRAC_3$  and  $SRAC_4$  as a medium factory,  $SRAC_5$  as a large factory, and  $SRAC_6$  and  $SRAC_7$  etc. as very large and ultra-large. Even though there are just seven SRAC curves displayed in this image, there are most likely an endless number of additional SRAC curves in between. Understanding that different decisions regarding capital investment in the present will result in different short-run average cost curves in the future, this family of short-run average cost curves can be viewed as representing various options for a company planning its level of investment in fixed cost physical capital.

The cost of manufacturing each quantity over the long term, when the company can select the level of fixed costs and, consequently, the desired short-run average costs, is displayed by the long-run average cost curve. The firm should make the set of expenditures that will lead it to locate between SRAC3 and SRAC4, which permits producing Q1 at the lowest cost, if it intends to produce in the long run at an output of Q1. It would be ridiculous for a company that plans to produce Q1 to set its fixed cost level at SRAC1, SRAC2, or SRAC4. The amount of fixed costs at SRAC2 is insufficient to produce Q1 at the lowest feasible cost; instead, a large degree of variable costs would need to be added, raising the average cost significantly. The level of fixed expenses at SRAC4 is too high to produce Q1 at the lowest possible cost, and as a result, average costs would be extremely high. For many industries, the long-run cost curve's shape, as depicted in Figure 7.7, is somewhat typical. The case of economies of scale is demonstrated by the left-hand section of the long-run average cost curve, which slopes downward from output levels to Q1. Larger scale results in reduced average costs in this section of the long-run average cost curve.

Economies of scale have run out in the flat area of the long-term average cost curve, which is located between Q1 and Q2. This phenomenon, known as constant returns to scale, occurs when permitting all inputs to grow does not significantly alter the average cost of output. The average cost of manufacturing does not significantly alter as scale increases or decreases within this area of the LRAC curve.

Lastly, the long-run average cost curve's right-hand section, which starts at output level Q2, illustrates a scenario in which average costs increase in tandem with output level and scale. We refer to this circumstance as diseconomies of scale. Large factories or businesses can become extremely challenging to run, leading to excessively high expenses as multiple levels of management attempt to communicate with employees and with one another. When this fails, the flow of materials and work is disrupted. There aren't many extremely huge factories in the actual world since they can't compete with plants with lower average production costs for very long due to their extremely high production costs.

# 7.11 UNIT SUMMARY

Although cost notions pray a significant role in decision-making, neither the accounting nor the economic approaches are entirely appropriate in this context. Depending on the choice being made, costs need to be taken into account in different ways. Managerial economists, however, favour a flexible strategy. Every cost notion must be taken into account in order to support wise decision-making.

In the near term, both variable and fixed costs contribute to the total cost. Marginal cost is the additional variable cost that a corporation incurs with each new unit of output. The average variable cost is calculated by dividing the total variable cost by the number of output units. In particular, there is an inverse relationship between the variable input's marginal product and its marginal cost of production. The average variable cost and average total cost are shown by the U-shaped curves. The short-run marginal cost curve increases over a specific threshold, cutting off the average total cost curve and the average variable cost curve at their minimum points.

# 7.12: CHECK YOUR PROGRESS

## **Multiple-Choice Questions (1 Mark Each)**

Which factor primarily determines the fluctuation in raw material costs?

 A. Taxes

- B. InflationC. Commodity PricesD. Employee Benefits
- 1 2
- 2. What is the relationship between economies of scale and production cost?
  - A. Costs increase
  - B. Costs remain constant
  - C. Costs decrease
  - D. Costs are unaffected
- 3. Depreciation of machinery is categorized as:
  - A. Variable Cost
  - B. Fixed Cost
  - C. Opportunity Cost
  - D. Marginal Cost
- 4. What type of cost is incurred when a firm sacrifices an alternative production?
  - A. Accounting Cost
  - B. Opportunity Cost
  - C. Social Cost
  - D. Explicit Cost
- 5. Average Revenue (AR) is calculated as:
  - A. TR  $\times$  Q
  - B. TR  $\div$  Q
  - C. TC  $\div$  Q
  - D. AR  $\times$  Q
- 6. Marginal Cost (MC) is derived from:
  - A. Change in total cost with one unit increase in output
  - B. Change in fixed cost
  - C. Total revenue divided by quantity
  - D. Total cost divided by output

# 7. Social costs include:

- A. Only private costs
- B. Both internal and external costs
- C. Implicit costs only
- D. Explicit costs only
- What happens to Average Fixed Costs (AFC) as output increases?
   A. AFC increases
   B. AFC decreases
  - C. AFC remains constant
  - D. AFC fluctuates

- 9. The Short Run Average Variable Cost (SAVC) curve is:
  - A. U-shaped
  - B. Downward sloping
  - C. Upward sloping
  - D. Asymptotic
- 10. Who introduced the concept of private and social costs?
  - A. Marshall
  - B. Pigou
  - C. Benham
  - D. Stonier

# Short Answer Questions (2 Marks Each)

- 1. Define implicit costs and provide one example.
- 2. Explain the significance of operational efficiency in cost management.
- 3. What is the mathematical relationship between total cost (TC), total fixed cost (TFC), and total variable cost (TVC)?
- 4. Describe the difference between accounting cost and economic cost.
- 5. Why does the AFC curve decline as output increases?
- 6. What is the opportunity cost in economic terms?
- 7. Differentiate between private costs and social costs with examples.
- 8. Explain how inflation impacts production costs.
- 9. How is the LRAC curve derived from SRAC curves?
- 10. Describe the effect of natural disasters on production costs.

# Medium-Length Questions (5 Marks Each)

- 1. Explain the impact of economies of scale on production costs with examples.
- 2. Discuss the role of government regulations in influencing production costs.
- 3. Differentiate between short-run and long-run costs with examples.
- 4. Describe the relationship between marginal cost (MC) and average cost (AC) curves.
- 5. Analyze the impact of technological advancements on production efficiency and costs.
- 6. Define and compare explicit and implicit costs with examples.
- 7. How does opportunity cost play a role in resource allocation decisions?
- 8. Discuss the components of total fixed costs (TFC) and their implications.
- 9. Explain the U-shaped SAVC curve and the law of diminishing returns.

10. Analyze the role of social costs in policy-making and sustainable development.

### Long Answer Questions (10 Marks Each)

- 1. Discuss the factors influencing production costs and their implications on business profitability.
- 2. Elaborate on the differences between private costs and social costs and their relevance in economic decision-making.
- 3. Analyze the concept of opportunity cost with detailed examples from production scenarios.
- 4. Explain the mathematical relationships and interactions among TC, AC, AFC, AVC, and MC in cost analysis.
- 5. Discuss the significance of accounting costs and economic costs in evaluating a firm's performance.
- 6. Describe the derivation of the LRAC curve and its importance in cost planning and decision-making.
- 7. Evaluate the impact of government interventions, such as taxes and tariffs, on production costs.
- 8. Discuss the effects of sudden disruptions (e.g., natural disasters, geopolitical conflicts) on input costs and supply chains.
- 9. How does the concept of marginal revenue (MR) influence pricing and output decisions in businesses?
- 10. Critically analyze the relationship between short-run and long-run cost curves in production planning.

# 7.13: REFERENCE/ FURTHER READING MATERIALS

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2. Mote V, Paul S and Gupta G, 3e, Managerial Economics, 2004, Tata McGraw Hill

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# **UNIT-8: MARKET STRUCTURE**

Objectives

After studying this unit, learners will be able to:

- Understand the characteristics of market
- Understand the concept of market structure and the impact it has on the competitive behaviour of the firms
- Classify different types of market structures

Structure

8.0: Introduction

8.1: Meaning of Market

8.2: Characteristics of Market

8.3: Market Structure and Determinants

8.4: Forms of Market Structure

8.5: Unit Summary

8.6: Check Your Progress

8.7: Reference/ Further Reading Materials

# **8.0 INTRODUCTION**

Give of the most important decisions to be made by managers is selling their goods or services. There should be specific platform to sell their products. That platform is the market where both suppliers and consumers meet to fulfil their requirements. The knowledge of market structure is very important for the managers to study the behaviour of firms in an economy. The informed decision of the managers makes the firm to earn profits in the short run and long run depends on the type of market structure in which the firm operates.

# 8.1 MEANING OF MARKET

Although "market" refers to a specific location where goods and services are bought and sold, the term is used broadly in economics. The phrase "market" in economics refers to the entire region where buyers and sellers of a product are dispersed, not just a specific location. This is due to the fact that agents and samples are used to assist sell and buy things in the modern day. As a result, a given commodity's customers and sellers are dispersed
throughout a wide region. Commodity trades can also take place via the internet, telegrams, mail, etc. Therefore, the term "market" in economics refers to the entire territory where things are bought and sold rather than just a specific market location. A commodity's pricing in these transactions is the same across the market. Stated differently, the market for a commodity encompasses the entire territory where consumers and sellers are dispersed and there is so much unrestricted competition that a single price for the product dominates the entire area.

According to Prof. R. Chapman, "The term market refers not necessarily to a place but always to a commodity and the buyers and sellers who are in direct competition with one another".

A.A. Cournot states that economists define a "market" as the entire area where buyers and sellers engage in such unrestricted interaction that the prices of similar goods tend to equalize quickly and easily, rather than just a specific location where goods are bought and sold. But this definition, which encompasses all market characteristics, is more comprehensive and suitable.

# **8.2 CHARACTERISTICS OF MARKET**

The key characteristics of a market are:

- 1. **Interaction between Buyers and Sellers:** A market facilitates the interaction between the two main participants. The nature of this interaction can vary—for example, in a stock market, buyers and sellers interact indirectly via brokers or platforms.
- 2. **Price as a Determining Factor:** Markets rely on price as a key signal. Prices reflect the scarcity or abundance of goods and help allocate resources efficiently.
- 3. Voluntary Exchange: Participation in the market is typically voluntary. Buyers and sellers transact based on mutual benefit.
- 4. **Competition:** Most markets exhibit some level of competition, which can influence pricing, quality, and innovation.
- 5. **Regulation:** Many markets operate within a framework of rules set by governments or regulatory bodies to ensure fairness and efficiency. For instance, anti-monopoly laws prevent a single firm from dominating the market.

#### 8.3 MARKET STRUCTURE AND DETERMINANTS

Market structure describes the kind and degree of competition in the market for goods and services. The type of competition that exists in a given market determines the market structures for both products and services.

The market structure of a given commodity is determined by several factors. They are:

(a) Number and nature of sellers: Market structures are influenced by the number and kind of vendors in the market. They consist of a large number of vendors in perfect competition, a few sellers in oligopoly, a single seller in total monopoly, multiple suppliers in differentiated products, and many sellers in oligopoly.

(b) Number and nature of buyers: The quantity and type of purchasers in the market have an impact on the market structures as well. The term "monopsony market" refers to a market where there is just one buyer. For local workers hired by a single large employer, such markets exist. In the market, two purchasers may operate in concert. We refer to this as the duopsony market. They can also be a few well-organized goods purchasers. We call this oligopsony.

(c) Nature of Product: The type of commodity determines the market structure. If there is product differentiation, the market is characterized by monopolistic competition and products are nearly equal. On the other hand, where there is no product differentiation, the market is characterized by perfect competition. Furthermore, if a product is completely different from other things, it has a full monopoly in the market with no close substitutes.

(d) Conditions of Entry and Exit: Profitability or loss in a given market determines the requirements for enterprises to enter and quit that market. When a market is profitable, new businesses will enter it, and when it is losing money, weaker businesses will leave. Businesses are free to enter or leave a market with perfect competition. In oligopoly and monopoly markets, however, new firms face obstacles to entry.

(e) Economies of scale: Significant production economies of scale allow businesses to grow proportionately to other businesses in the same industry. They have a propensity to sift out the other enterprises, leaving a select few to compete with each other. This leads to an emergency oligopoly. When one business attains economies of scale to the extent that it can meet all of the demands of the market, a monopoly is in place.

## 8.4 FORMS OF MARKET STRUCTURE

Based on the above characteristics and competition, market can be classified into the following ways:

(i) Perfect Competition

(ii) Monopoly

(iii) Duopoly

(iv) Oligopoly

(v) Monopolistic competition

(i) Perfect Competition: A perfectly competitive market is characterized by a substantial number of buyers and sellers, all involved in the transaction of a uniform product. In this market structure, there are no artificial limitations, and participants have complete knowledge of the market conditions at any given moment.

According to Koutsoyiannis, "Perfect competition is a market structure characterised by a complete absence of rivalry among the individual firms".

In the words of Lipsey, "Perfect competition is a market structure in which all firms in an industry are price takers and in which there is freedom of entry into and exit from industry".

According to Mrs Robinson "Perfect competition prevails when the demand for output of each producer is perfectly elastic".

To Marshall "the price in perfect competition is determined by the interaction of demand and supply".

#### **Characteristics of Perfect Competition:**

(a) A significant number of buyers and sellers: The first requirement is that there needs to be a substantial number of both buyers and sellers in the market. This ensures that no single participant can sway the price or overall output of the industry. Each buyer's demand is so minimal compared to the total that individual actions have no impact on the product's price. Likewise, an individual seller's supply represents such a small portion of the overall output that their actions alone cannot affect the product's pricing.

(b) Freedom of entry or exit of firms: Businesses should have the liberty to join or exit an industry as they choose. When the industry is enjoying higher-than-normal profits, new companies are likely to be drawn in. Conversely, if the industry experiences losses, it's expected that some companies will exit the scene.

(c) Homogeneous product: A homogeneous product means that every firm is producing and selling the same type of product, with no buyer favouring one seller over another. This situation arises when identical product units from various vendors are ideal replacements for one another. Essentially, this leads to an infinite cross elasticity of demand among the sellers' products. Because of this, individual sellers cannot set their own prices independently.

(d) Absence of artificial restrictions: The absence of artificial limitations means there is full transparency in the buying and selling process. Sellers have the freedom to offer their products to any potential buyers, while buyers can choose to purchase from any seller they prefer. In essence, there is no bias from either party in these transactions.

(e) Profit maximisation goal: Every firm has only one goal of maximising its profits.

(f) Perfect mobility of elements and goods: Perfect mobility of factors and commodities between industries is another prerequisite for perfect competition. Goods are allowed to go to locations where they can sell for the most money. Additionally, factors may go from a low-paying to a high-paying industry.

(g) Complete awareness of market conditions: This trait implies that buyers and sellers communicate frequently. The prices at which goods are being bought and sold, as well as the prices at which other people are willing to buy and sell, are completely known to both buyers and sellers.

(h) Lack of transportation expenses: This is an additional requirement for moving goods from one location to another. This requirement, which states that an item must always have the same price everywhere, is necessary for perfect competition to exist. Even a uniform commodity will have varying pricing based on transportation expenses from the point of supply if they are included in the product's price.

(i) Lack of selling costs: Since every company produces a uniform product, there are no expenses associated with advertising, sales promotion, etc. in a perfect market.

(ii) Monopoly market: A monopoly occurs when there is just one product vendor and obstacles preventing other sellers from entering the market. There are no close substitutes for the product. Demand for each other product has relatively little cross-elasticity. This indicates that no other companies manufacture a comparable product.

According to Salvatore, "Monopoly is the form of market organisation in which there is a single firm selling a commodity for which there are no close substitutes". As a result, the monopolist faces the industry demand curve, and the monopolistic firm is an industry in and of itself. Additionally, a lower price can be used to sell more of the goods than a higher price. But since this company sets prices, it can do it in a way that maximizes benefits. It does not imply that the company can control both output and price. Either of the two options is available to the company. After they choose their output level, demand determines the price. Otherwise, the company determines the output based on what customers are willing to pay for the product. The monopolist's ultimate objective is to maximize profits under whatever circumstance.

# **Characteristics of Monopoly:**

Be main characteristics of monopoly are as follows:

(a) There is only one manufacturer or supplier of a certain good in a monopoly, and there is no distinction between a firm and an industry. An industry is a firm under monopoly.

(b) A monopoly can be a government corporation, a cooperative society, a joint stock company, a partnership, or an individual proprietorship

(c) A monopolist has complete control over a product's supply. As a result, a monopolist's product has zero demand elasticity.

(d) A monopolist's product has no close substitute on the market. Therefore, in a monopoly, there is relatively little cross-elasticity of demand between a monopoly product and another one.

(e) Other businesses are not allowed to enter the monopolistic product market.

(f) A monopolist has the power to affect a product's price. Instead of being a price taker, he or she sets prices.

(g) Pure monopoly is not found in real world.

(h) Monopolists are unable to decide on a product's price and quantity at the same time.

(i) The demand curve for Monopolist slopes to the right and downward. Because of this, monopolists can only boost sales by lowering the price of their goods, which maximizes their profit. (iii) **Duopoly:** A specific instance of the oligopoly theory when there are just two sellers is called duopoly. There is no contract between the two sellers, and they are totally independent of one another. Despite their independence, a shift in one's output and price will have an impact on the other and could start a cascade of events. However, a seller may believe that their competitor is unaffected by their actions; in this scenario, they only directly effect the price.

(iv) Oligopoly: An oligopoly is a market structure where a small number of companies sell similar or unique goods. Among the few, it is hard to determine how many businesses are in competition. Since there aren't many companies in the market, the actions of one are likely to have an impact on the others. Either homogeneous or heterogeneous products are produced by an oligopoly industry. The latter is referred to as imperfect or differentiated oligopoly, whereas the former is known as pure or perfect oligopoly. Producers of industrial goods like copper, zinc, steel, and aluminium are the main examples of pure oligopoly. There is imperfect oligopoly among manufacturers of consumer items like TVs, cars, cigarettes, and soaps, among others.

#### **Characteristics of Oligopoly:**

(a) Interdependence: In an oligopolistic market, there is acknowledged interdependence between the sellers. Every oligopolistic company is aware that adjustments to its pricing, advertising, and other strategies could result in retaliation from competitors. When there are few sellers, each one contributes significantly to the industry's total output and can clearly impact market circumstances. He or she can affect other sellers' profits and change the price for the entire oligopoly market by selling more or less. It suggests that each seller is conscious of how other sellers' price movements affect their own profit as well as how their own price swings affect competitors' behaviour.

(b) Advertisement: The fact that the success of one producer depends on the policies and success of the other producers in the industry is the primary cause of this reciprocal interdependence in decision-making. Because of this, oligopolistic businesses invest much in marketing and customer support.

(c) Competition: This results in the existence of competition, which is another characteristic of an oligopolistic market. Because there are only a few vendors in an oligopoly, a move made by one seller instantly impacts the competitors. In order to have a countermove, each seller is constantly attentive and closely monitors the actions of its competitors. This is a real competition.

(d) Obstacles to firm entry: In an oligopolistic industry, there are no obstacles to entering or leaving because of the intense competition. Nevertheless, over time, certain kinds of entry barriers often prevent new businesses from joining the market. These could include high capital needs because of plant costs, control over specialized and necessary inputs, economies of scale enjoyed by a small number of major enterprises, and others. The oligopolistic industry can generate long-term supernormal profits when entry is prevented or blocked by such natural and manmade barriers

(e) Lack of uniformity: The disparity in business sizes is another characteristic of an oligopoly market. Businesses vary widely in size. Some might be tiny, while others are enormous.

(f) Demand Curve: Tracing the demand curve for an oligopolist's product is difficult. Since it is impossible to determine a producer's precise behaviour pattern in an oligopoly, it is impossible to sketch their demand curve precisely and definitively. A seller's price or output changes cause his or her competitors' pricing-output policies to react in unforeseen ways, which could further affect the seller's price and output.

(v) Monopolistic Competition: When multiple companies are offering a unique product in a market, this is referred to as monopolistic competition. There is fierce, although imperfect, rivalry among numerous companies producing remarkably identical goods. No firm can be significantly impacted by the conduct of other sellers or have any discernible effect over their price output strategies. Therefore, competition between numerous vendors who produce near but not exact alternatives for one another is referred to as monopolistic competition.

#### **Characteristics of Monopolistic competition:**

(a) Lots of sellers: There are a lot of sellers in monopolistic competition. Although they are numerous and sufficiently tiny, none of them dominates the overall production. No seller can influence others' sales or have any discernible impact on others' sales by altering its price output policy. Therefore, each seller takes an independent course of action, and there is no acknowledged dependency between the price output plans of the sellers.

(b) Product differentiation: This is one of the key characteristics of monopolistic competition. It is implied by product differentiation that products differ from one another in some manner. Because they are diverse rather than uniform, each company has a complete monopoly on the creation and marketing of a unique product.

(c) Freedom from entry and exit of firms: The ability of enterprises to enter and exit markets is another characteristic of monopolistic competition. Businesses can eventually leave or join the industry or group because they are small and can produce near equivalents.

(d) Demand curve nature: In monopolistic competition, no single company owns more than a small percentage of a product's total production. Although there is undoubtedly some differentiation, the items are nearly identical. Therefore, lowering its pricing will boost the company's sales but have minimal impact on other companies' price output conditions; each will only lose a small number of clients.

(e) Independent behaviour: Each corporation has its own policy in monopolistic competition. Since there are several vendors, none of them has a significant amount of control over the entire output. By altering its price and output policies, no seller can significantly impact other people's sales and be impacted by them.

(f) Product groups: Product groupings are a collection of businesses that produce comparable goods rather than an industry with monopolistic rivalry. Every company creates a unique product and is an industry in and of itself.

(g) Selling groups: When a product is differentiated in a monopolistic market, selling charges are crucial to increasing sales. In addition to advertising, it covers costs for salespeople, window display allowances for vendors, free services, presents, etc.

(h) Non price competition: A company that engages in monopolistic competition raises sales and profits of its goods without lowering the price. The monopolistic rival may alter his product by altering its packaging, quality, and other aspects, or by altering his marketing strategies.

Type of market structure	No. o firms	f Nature of product	Entry of firm	Number of buyers	Degree of monopoly power	Price policy of firm	Examples
Perfect competition	Large	Homogeneous	Free	Very large	Zero	Price taker	Agricultural commodities

 Table 8.1: Features of market structures

Monopoly	One	One type	No entry	Large	Full	Price maker	Microsoft, Intel Processor
Duopoly	Two	Differentiated	Very difficult or impossible	Large	Limited	Price maker	Pepsi and coke
Oligopoly	A few	Homogeneous or differentiated	Restricted	Large	Limited	Price maker	Cars, telecom services
Monopolistic competition	Varied but not too many	Product differentiation	Free	Large	Limited due to product differentiation		Retail stores

#### **8.5 UNIT SUMMARY**

Market structure is way to classify industries based on the degree and nature of competition for product and services. Differentiation is a key factor in determining the type of market competition. This unit gave use the idea of market structure and how it affects businesses' ability to compete. A wide range of competitive market scenarios were described and extensively examined. Moreover, the quantity of sellers and buyers, the actions of customers, and the features of the product and manufacturing all have an impact on the degree of competition.

# **8.6 CHECK YOUR PROGRESS**

#### **Multiple-Choice Questions (1 Mark Each)**

- 1. What does the term "market" refer to in economics?
  - a) A specific place where goods are sold
  - b) The entire region where buyers and sellers interact
  - c) The local marketplace only
  - d) A physical shop

# 2. According to Prof. R. Chapman, a market refers to:

- a) A physical location only
- b) Buyers and sellers of a product in competition
- c) A monopolistic competition
- d) A single seller dominating the market

# 3. Which of the following is NOT a characteristic of perfect competition?

- a) Homogeneous products
- b) Lack of transportation costs
- c) Barriers to entry
- d) Complete market knowledge

### 4. In monopoly, the demand curve slopes:

a) Upward

- b) Downward
- c) Horizontal
- d) Vertical

#### 5. Oligopoly refers to a market with:

- a) A single seller
- b) Two sellers
- c) A small number of sellers
- d) Unlimited sellers

#### 6. Which is a key characteristic of monopolistic competition?

- a) Homogeneous products
- b) Single producer
- c) Product differentiation
- d) No competition

#### 7. What is a duopoly?

- a) A market with one seller
- b) A market with two sellers
- c) A market with multiple buyers
- d) A market with perfect competition

#### 8. The concept of "voluntary exchange" in a market means:

- a) Forced transactions
- b) Transactions based on mutual benefit
- c) Government-regulated transactions
- d) Compulsory price fixing

#### 9. What happens when there are economies of scale in a market?

- a) Large firms dominate
- b) More firms enter the market
- c) Firms reduce production
- d) Perfect competition arises

#### 10. Which market structure allows free entry and exit of firms?

- a) Monopoly
- b) Perfect competition
- c) Oligopoly

#### d) Monopolistic competition

#### Short Answer Questions (2 Marks Each)

- 1. Define the term "market" in economics.
- 2. What role does price play in a market?
- 3. State two key characteristics of perfect competition.
- 4. What is the significance of product differentiation in monopolistic competition?
- 5. Explain "voluntary exchange" in a market.
- 6. How does advertising influence oligopolistic markets?
- 7. Differentiate between monopoly and perfect competition.
- 8. What does "freedom of entry and exit" mean in market structures?
- 9. What is meant by "non-price competition"?.
- 10. Why is a monopolist considered a price maker?

#### **Medium-Length Questions (5 Marks Each)**

- 1. Discuss the characteristics of a perfectly competitive market.
- 2. Compare and contrast monopoly and oligopoly.
- 3. Explain the concept of economies of scale and its impact on market structure.
- 4. What is meant by "product differentiation," and how does it influence monopolistic competition?
- 5. Describe the key features of monopolistic competition.
- 6. How does advertising affect the decision-making process in oligopolistic markets?
- 7. Define and discuss the significance of "voluntary exchange" in market functioning.
- 8. Explain the conditions under which firms can freely enter or exit a market.
- 9. Discuss the role of price as a signal in resource allocation within markets.
- 10. Illustrate the concept of a duopoly with examples.

# Long Answer Questions (10 Marks Each)

- 1. Define a market and discuss its key characteristics with suitable examples.
- 2. Analyze the structure of perfect competition and explain how price and output are determined in such markets.
- 3. Examine the concept of monopoly, its characteristics, and the pricing strategies of a monopolist.
- 4. Compare monopolistic competition and oligopoly with respect to their characteristics and market dynamics.

- 5. Discuss the determinants of market structure and their influence on competition.
- 6. Explain the characteristics and behavior of firms in an oligopolistic market with examples.
- 7. Evaluate the role of advertising and non-price competition in monopolistic competition.
- 8. Discuss the role of government regulation in ensuring fairness and efficiency in markets.
- 9. Describe the concept of economies of scale and its implications for market dominance.
- 10. Elaborate on the impact of barriers to entry on different market structures.

# 8.7 REFERENCE/ FURTHER READING MATERIALS

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2. Mote V, Paul S and Gupta G, 3e, Managerial Economics, 2004, Tata McGraw Hill

3. Adhikary, M. (1987). Managerial Economics (3rd ed.).Khosla Publishers, Delhi

4. Managerial Economics, IGNOU

# **UNIT 9 CONCEPT OF PRICING**

**Objectives:** 

After studying this unit, learners will be able to:

- Encompass a range of strategic goals that businesses aim to achieve through their pricing decisions
- Understand how managers set prices as an addition to what cost have incurred in developing and marketing the product.
- Under how products are positioned in the market and compete with competitors

Structure

9.0: Introduction

9.1: Concept of Price

9.2: Price Determinants

9.3: Types of Pricing

9.4: Price Discrimination

9.5: Transfer Pricing

9.6: Peak Load Pricing

9.7: Unit Summary

9.8: Check your Progress

9.9: Reference/ Further Reading Materials

#### 9.0 INTRODUCTION

Every business produces certain items or services, incurs expenses to sell its produce in the market, and must choose a price for its product; therefore, pricing is a crucial function for all businesses. Producers and sellers try to achieve two goals through pricing: return of profit and return of production cost. One factor that directly affects both the supply and demand for the commodity is its pricing. Therefore, it is claimed that a company would succeed in the market if it sets its product pricing well. However, it's not a simple task. Because producers must pay more for high-quality materials, sophisticated machinery, skilled labour, etc. in order to maintain quality. Therefore, it is the responsibility of every management to determine the price that best fits its goal. Setting the pricing correctly is essential because if it is too expensive, the seller may not attract enough clients; conversely, if it is too low, the seller may not be able to recoup their production costs. So it is important to state that price is very much significant and sensitive problem for the sellers and producers.

# 9.1 CONCEPT OF PRICE

The amount of money a buyer offers a seller in return for a good or service is referred to as the price. The distribution of resources and the operation of markets depend heavily on this basic economic idea. It represents the buyer's opinion of a product or service's value. According to Adam Smith, a good can have two different types of values: value in exchange and value in usage. The advantages that the buyer receives from using it are known as value in use, and they may differ for each customer. Exchange value, on the other hand, is the price at which a buyer purchases an item from a seller in the marketplace.

There is nothing like a unique price for any good instead there are multiple prices. For example if we say an IPhone, its price is \$ 1000, one is not quite precise. Is it the price of an IPhone with memory space of 56GB or 256 GB? Does it all apps are free; if yes, for how long? Does it include, insurance; if yes, comprehensive or liability one? Does the price include free services; if yes, how many and when? Does it include a guarantee; if yes, for which parts and for how long? Depending on the answers to these and such questions, there are multiple prices of IPhone.

A well-defined product's price fluctuates depending on the buyer's type. As a result, wholesalers, commission agents, retailers, and consumers all have prices. Due to transportation and insurance expenses, the location of delivery also affects the cost of a commodity or service. Hence businesses utilize price as a potent instrument to influence market dynamics and accomplish their strategic objectives.

#### 9.2 PRICE DETERMINANTS

The elements that affect the setting or determination of a product's pricing are known as price determinants. Therefore, when setting a product's pricing, a corporation should keep an eye on those elements, assess their impact, and take them into account. The company should be fully aware of all the variables that can affect the pricing of their products, either directly or indirectly. Here are some key determinants of price:

(a) **Production Cost**: The cost of production must be covered by the price of each item. What will a product that is always dependent on production

costs cost? For this reason, a high manufacturing cost raises the price, while a low production cost lowers it. It is true that the primary factor influencing the price of items is production cost, which directly affects price.

(b) **Demand and Utility**: From the perspective of the client, utility and demand as a factor of pricing evolved. Products with a high level of utility and consumer demand may see price increases. This is because customers are willing to pay a premium for items when they are very useful and in high demand.

(c) The degree of market competition: Every manufacturer in a contemporary competitive market must take into account the degree of competition that their products will experience in the marketplace. In this context, it should be noted that there is intense competition, which forces the manufacturer to set the price of their items as low as feasible. However, if there is no competition, producers can set any price for their products.

(d) Government regulations: In the majority of nations, the government has a significant influence on product prices. The government influences product prices both directly and indirectly. If a good is produced either solely or in conjunction with the public sector and/or is a basic good, the government sets or controls the price of the entire output. If prices were not set by governments, they would either be too expensive for the most vulnerable members of society to consume or too cheap to manufacture in sufficient quantities. For instance, many people would not be able to purchase life-saving medications if price regulations were not in place. Similar to this, many farmers would not have used fertilizer in at least the optimal amount if prices had not been set, which would have had a significant negative impact on our agricultural output.

(e) Pricing Objectives: Different business adopts different objectives of pricing. So, depending upon the objective of pricing different producers set prices to maximize profits, set prices to gain market shares, set prices to cover costs and maintain operations.

(f) Product life cycle stage: The price of the product is also influenced by its life cycle stage. For example, in order to draw clients, a business may cut its pricing during the launch phase and raise it during the expansion phase. Alternatively, the business might raise prices to cover development expenses, and then during the expansion phase, pricing might level off or even drop a little to draw in more clients. Additionally, as a result of heightened rivalry, prices may drop considerably during the mature period in order to sell off leftover inventory.

#### 9.3 TYPES OF PRICING

As we previously discussed, a product's price is the sum of its cost. Price is the only element of the marketing mix that brings in money. The price is the amount of money that the buyer must spend to purchase the item. The worth of the product as established by the manufacturers is known as the price mix. There are various types of pricing strategies:

(a) **Penetration pricing**: Penetration pricing is the practice of setting a low starting price for a good or service in an effort to attract a lot of customers and grow market share. This strategy is frequently employed when launching a new product to promote quick acceptance or in markets with fierce competition.

There are few key features for penetration pricing:

- Low Starting Price: To appeal to budget-conscious clients, the price is set lower than rivals.
- Market Entry Strategy: It aids companies in breaking into and establishing a presence in new markets.
- Economies of Scale: Businesses can raise production volumes and possibly lower expenses per unit by drawing in a sizable consumer base.
- Temporary Nature: After a product acquires a sizable market share or wins over customers, prices are frequently raised gradually.

Let us consider an example for penetration pricing. A new streaming service might offer a monthly subscription at half the price of established competitors to attract subscribers. Once it has a sizable user base, it can gradually increase its prices while retaining customers who value its content.

In economics, penetration pricing illustrates the concept of **elasticity of demand**, as the low price is designed to maximize quantity demanded, especially in price-sensitive markets.

(b) Skimming pricing: The practice of skimming pricing involves a business setting a high initial price for a novel or distinctive product in order to maximize earnings from early adopters, and then progressively reducing the price over time. This strategy is frequently applied to items that are novel or in great demand, particularly when the business has a short-term competitive advantage like a technology advantage or strong brand loyalty.

There are few key features for skimming pricing:

- High Initial Price: To attract buyers who are willing to spend more, the product is first offered at a premium price.
- Gradual budget Reduction: To increase market reach and draw in more budget-conscious clients, the price is gradually lowered
- Profit maximization: It focuses on early adopters who place a high value on the product and are less price-sensitive
- Perceived Value: The product's perceived exclusivity or quality is frequently strengthened by its high price

Let us consider an example for skimming pricing. When a new smartphone with advanced features is launched, the manufacturer may set a high price initially to target tech enthusiasts. After a few months, as demand from early adopters decreases, the price is gradually lowered to appeal to the broader market.

In economics, skimming pricing demonstrates the principle of price discrimination, where different price points are used over time to extract maximum willingness to pay from various segments of the market.

(c) Product bundle pricing: Product bundle pricing is a strategy where a business combines several related products or services into a single package and sells them at a combined price, which is typically lower than the sum of their individual prices. This strategy is frequently employed to boost the perceived value of the deal and persuade buyers to buy more things. Two varieties of bundling exist:

(i) Pure Bundling: Products are only available as part of a bundle. e.g., subscription services with specific plan

(ii) Mixed Bundling: Customers can buy products individually or as part of a bundle. e.g., a meal combo at a fast-food restaurant

There are few key features for product bundle pricing:

- Bundling of product: Product bundling is the practice of selling several goods or services as a single unit.
- Reduced pricing: The total cost of purchasing the goods separately is more than the bundle pricing
- Enhanced Perceived Value: By buying the package, customers believe they are receiving a better deal
- Target Market Segmentation: This tactic works well for clients who appreciate convenience or have a variety of interests.

Let us consider an example for product bundle pricing. A software company may sell a productivity suite that includes a word processor, spread sheet application, and presentation software at a price lower than the cost of purchasing each program separately.

In economics, product bundle pricing relates to the concept of consumer surplus, as it aims to capture more value by appealing to customers who might not buy each product individually. It also leverages economies of scope, where combining products can reduce costs and enhance value.

(d) Psychological pricing: Psychological pricing is a strategy that leverages consumer psychology to make prices appear more attractive, encouraging purchases. It involves setting prices in a way that influences customer perception, often focusing on how people interpret numerical values or perceive value.

There are few key features for psychological pricing:

Price ending: To make prices appear much lower, they are set slightly below a round figure. For example, pricing \$9.99 rather than \$10

Perceived Value: The tactic highlights how pricing affects people's perceptions, making a product appear more affordable

Anchoring Effect: Higher initial prices (anchor prices) may be displayed to make discounts or current prices seem more appealing

Let us consider an example for psychological pricing. A retailer might price a T-shirt at \$19.99 instead of \$20.00. Customers psychologically perceive \$19.99 as closer to \$19 than \$20, making the product seem more affordable.

In economics, psychological pricing illustrates the interplay between behavioural economics and traditional pricing theories, highlighting how consumer decision-making is influenced not only by actual prices but also by their presentation and perception.

(e) Cost based pricing: Cost-based pricing is a simple pricing approach in which a defined percentage or amount or mark-up is added to the overall cost of production to determine the price of a good or service. This strategy guarantees that all production expenses are met while attaining the targeted profit margin.

there are three types of cost based pricing:

(i) Cost Plus pricing: Adds a fixed mark-up percentage to the cost of production. Example: If a product costs \$50 to produce and the mark-up is 20%, the price is set at  $$50 + ($50 \times 0.20) = $60$ .

(ii) Break even pricing: Tries to gain market share by setting a price to cover costs without making a profit right now.

(iii) Target pricing: determines a pricing based on anticipated sales volume in order to reach a particular profit target

There are few key features of cost based pricing:

- Cost as a Base: The primary focus is on covering costs, including fixed and variable costs, as well as overheads.
- Mark-up Addition: The selling price is established by adding a predefined profit margin to the overall cost
- Simplicity: The method is easy to calculate and widely used, especially in industries with stable costs.

Let us consider an example for cost based pricing. A bakery calculates that the cost of making a loaf of bread including ingredients, labour, and overhead is \$2. If they add a 50% mark-up, the selling price would be \$3.

In economics, cost-based pricing aligns with the concept of cost recovery and helps businesses achieve financial sustainability. However, it often requires adjustments to account for price elasticity of demand and competitive factors to remain effective in diverse market conditions.

(f) Value based pricing: Value-based pricing is a tactic in which a product or service's price is established by the perceived value it offers the consumer, not by the cost of manufacturing or competition in the market. This method is customer-centered and focuses on matching the product's pricing to the advantages or utility it offers.

There are some key features of value based pricing:

- Customer Perception: Based on the value that customers attach to the goods, pricing is determined by how much they are willing to pay.
- Focus on Benefits: The product's performance, quality, or emotional impact are prioritized over its price
- Customization: Customization is frequently utilized for high-end or distinctive goods when distinction warrants a greater price

Let us consider an example for value based pricing. Luxury brands like Rolex use value-based pricing by charging premium prices for watches based on their craftsmanship, brand prestige, and exclusivity, rather than the actual cost of materials and production.

In economics, value-based pricing illustrates the importance of consumer surplus, as it aims to capture the additional value customers derive beyond the cost of production. It aligns with the concept of differentiation in competitive strategy, emphasizing unique benefits that justify higher prices.

(g) Competition based pricing: Competitive pricing, referred to as competition-based pricing, is a tactic where a company bases its rates on what rivals are charging for comparable goods or services. This approach focuses on the external market environment rather than internal costs or perceived value.

There are few features of competition based pricing:

- Market-oriented: The main method of setting prices is to examine the pricing tactics of rivals.
- Relative Positioning: Depending on its market positioning and objectives, the company decides whether to price its goods lower, equal, or higher than rivals.
- Dynamic Nature: In response to changes in the market or competition, prices may be often adjusted.

Let us consider an example of competition based pricing. A local grocery store might set the price of milk slightly below or equal to a nearby competitor to retain customers and discourage them from switching stores.

In economics, competition-based pricing highlights the role of market structure and price elasticity of demand, emphasizing how businesses in competitive markets must consider external pricing pressures to remain viable. It is particularly relevant in oligopolistic and perfect competition markets where price competition is intense.

# 9.4 PRICE DISCRIMINATION

A pricing technique known as price discrimination occurs when a business charges certain clients different prices for the same or comparable good or service. This approach is widespread in a variety of businesses, including as retail, entertainment, education, and aviation. By capturing consumer surplus—the discrepancy between what customers are willing to pay and what they actually pay—businesses utilize price discrimination to increase their profits.

#### 9.4.1 Types of Price discrimination

Price discrimination can be classified into three main types:

(a) First degree price discrimination: In this form, the seller charges each consumer the maximum price they are willing to pay. This requires detailed knowledge of each consumer's willingness to pay. For example: Auctions, personalized pricing in online retail. The implication of first degree price discrimination is that it eliminates consumer surplus entirely and maximizes producer surplus.

(b) Second degree price discrimination: In second degree price discrimination the price varies according to the quantity purchased or the version of the product. Consumers self-select based on their preferences and willingness to pay. For example: Bulk discounts, tiered service levels like basic, premium, and deluxe packages. The implication of second degree price discrimination is that it encourages higher consumption by offering discounts for larger quantities or more expensive versions.

(c) Third degree price discrimination: This involves segmenting consumers into groups based on certain attributes like age, location, or income and charging each group a different price. For example: student discounts, senior citizen discounts, different prices in different countries. The implication of third degree price discrimination is that it increases demand among groups with lower price sensitivity while extracting more from high-price-sensitive groups.

# 9.4.2: Conditions for Price discrimination

For price discrimination to be effective certain conditions should meet:

(i) Market Power: Market power means power to set price. The firm must have some control over pricing. E.g. monopoly or oligopoly.

(ii) Market Segmentation: The firm must be able to segment the market based on Willingness to pay or other characteristics.

(iii) No Arbitrage: There should be no easy resale of goods or services between groups at different price levels.

#### 9.4.3 Advantages of Price Discrimination

The following are the advantages of price discrimination

(i) High revenue and profit: Firms can extract more consumer surplus and convert it into additional profits.

(ii) Increased access: Some consumers who may not afford a higher price like students or low-income groups, can benefit from lower prices

(iii) Better resource allocation: By filling up unused capacity like airline seats or hotel rooms, firms operate more efficiently

# 9.4.4 Disadvantages Price Discrimination

The following are the few disadvantages of price discrimination

(i) Ethical Concerns: Charging different prices to different groups can be perceived as unfair

(ii) Complex Implementation: Segmentation and monitoring require resources and detailed consumer data

(iii) Potential for Arbitrage: Consumers may resell products, undermining the strategy.

Let us consider <sup>48</sup>/<sub>48</sub> example of price discrimination for different sectors

- Airlines: Airlines use dynamic pricing based on booking times, travel classes, and routes. Early bookings often receive discounts, while last-minute travellers pay premium rates.
- Education: Universities or colleges or institutes offer financial aid, scholarships, and in-state tuition discounts to students based on their circumstances.
- Retail: Loyalty programs and coupons target specific groups to encourage repeat purchases.
- Health care: Pharmaceutical companies charge different prices for the same drugs in different countries based on income levels

#### 9.5 TRANFER PRICING

The prices at which a company's affiliates, subsidiaries, or divisions deal with one another for products, services, or intellectual property are referred to as transfer pricing. Despite taking place within a same company, these transactions are recorded as though they were between separate businesses. Transfer pricing is an important subject for research in finance, economics, and business management since it affects international corporate operations and taxation.

In short we can say transfer pricing is the pricing of goods, services, or intangibles transferred between related entities within a multinational company. For example, a parent company selling raw materials to its subsidiary or a subsidiary licensing intellectual property to another division.

The arm's length principle, which is the foundation of transfer pricing, states that transfer prices between connected businesses, must be equivalent to prices paid between independent, unrelated firms under comparable conditions. Transfer pricing also directly impacts the allocation of taxable income among countries, affecting corporate tax liabilities. Beyond tax compliance, it can affect decision-making, performance evaluation, and resource allocation within a multinational enterprise.

# 9.5.1 Factors Influencing Transfer Pricing

Transfer pricing is shaped by a variety of factors, including economic, regulatory, operational, and strategic considerations. Understanding these factors helps firms design effective transfer pricing strategies that comply with regulations while optimizing their financial performance. Below is a detailed exploration of the factors that influence transfer pricing:

#### (i) Economic Environment:

- Tax rates and Jurisdictional difference: Transfer pricing techniques are greatly impacted by differences in corporate tax rates between nations. In order to lower their overall tax obligations, businesses may set transfer prices to move earnings to low-tax jurisdictions.
- Currency Exchanges rate: Transfer pricing may be impacted by fluctuating exchange rates, particularly for multinational corporations (MNEs) that operate in volatile currency markets. It can be changed by businesses to stabilize profits or guard against exchange rate fluctuations.
- Economic Conditions: Transfer prices may be impacted by inflation, recession, or prosperous economies in particular areas. Businesses may lower transfer prices in areas with weaker economies in order to help local enterprises

#### (ii) Regulatory Frameworks:

• Arm's length principle: Transfer pricing must follow the arm's length principle, according to the Organization for Economic Cooperation and Development (OECD) and other international tax authorities. Businesses need to make sure that their pricing are in line with what separate businesses would charge in the same circumstances

- Low tax laws and regulations: Every nation has its own regulations on transfer pricing, which may include permissible pricing strategies, profit thresholds, or paperwork requirements. Tax authorities may impose fines, audits, and modifications for noncompliance
- Anti-avoidance rules: Anti-avoidance policies are frequently put in place by governments to stop abuses like base erosion and profit shifting.

Examples include national transfer pricing laws and the OECD's Base Erosion and Profit Shifting (BEPS) effort.

# (iii) Functional and Risk Analysis:

Functions performed: Transfer price is influenced by the roles and responsibilities of each party involved in the transaction. For example: A manufacturing subsidiary engaged in simple assembly, for instance, will have a lower transfer price than one engaged in intricate R&D and production.

Assets Utilized: Entities that contribute significant assets, e.g., intellectual property and specialized machinery are likely to command higher transfer prices

Risks assumed: The transfer price is influenced by the degree of risk assumed by each party, including operational, market, and currency concerns. For example: higher returns are usually obtained by organizations taking on more risk such as a marketing subsidiary functioning in unstable markets.

#### (iv) Market and Industry Conditions:

- Demand and Supply dynamics: Pricing is influenced by supply and demand in the market for the transferred commodities or services. For example, a higher transfer price may be justified by a high demand for a proprietary technology.
- Competition: Transfer price is influenced by the industry's degree of competition. Transfer pricing may be set by businesses in fiercely competitive sectors to preserve market share or help faltering subsidiaries
- Industry Norms: Transfer pricing decisions are guided by industryspecific standard practices and margins. For instance, because of their high R&D expenses and regulatory restrictions, pharmaceutical businesses frequently employ cost-plus procedure.

#### (v) Strategic Objectives:

- Profit Maximization: Transfer pricing is used to optimize the overall profitability of a multinational enterprise by allocating profits to favourable jurisdictions
- Market penetration: Firms might use lower transfer prices to help new subsidiaries or markets establish themselves by reducing costs
- Performance Evaluation: Transfer prices can affect the performance metrics of subsidiaries, influencing bonuses, resource allocation, and strategic decisions.

The intricate interactions between economics, legislation, market dynamics, and corporate strategy are reflected in the variables affecting transfer pricing. Businesses must carefully manage these elements to sustain profitability, assure compliance, and preserve moral principles. To effectively address the possibilities and problems in international trade and taxes, practitioners, politicians, and students must have a thorough understanding of these factors.

#### 9.6 PEAK LOAD PRICING

Businesses and utilities use peak load pricing as a pricing method to control supply and demand at certain times. It entails charging higher fees during peak demand times and cheaper prices during off-peak times when demand is low. This method aids in more effective resource allocation, congestion reduction, and capacity utilization optimization.

Peak load pricing is frequently seen in sectors like energy, transportation, telecommunications, and hospitality where demand varies significantly.

Peak load pricing is a pricing strategy in which prices change based on the volume of demand at particular times. Lower rates are offered during offpeak hours to draw customers, while higher prices are charged during peak hours to control demand.

#### 9.6.1 Advantages of Peak Load Pricing

There are few advantages for pricing strategy during peak period

(i) Efficient resource allocation: Reduces the burden on capacity during peak hours by encouraging customers to move their consumption to off-peak times.

(ii) Cost Recovery: Represents the actual cost of providing services, particularly when more capacity is needed.

(iii) Reduced need for overcapacity: Reduces the need for investments in infrastructure that are only necessary at busy times.

(iv) Demand Management: Smoothens demand fluctuations, improving service reliability and reducing congestion

(v) Environmental Benefits: Lessens energy consumption during peak hours, which lowers emissions and promotes more sustainable resource use.

#### 9.6.2 Challenges of Peak Load Pricing

(i) Consumer resistance: Peak load pricing may be viewed by customers as unjust or exploitative, particularly when it comes to necessities like water or electricity

(ii) Implementation Complexity: Requires detailed demand analysis, timebased monitoring, and dynamic pricing systems

(iii) Equity Concerns: May disproportionately affect those with low incomes who find it difficult to modify their spending habits.

(iv) Technological Requirements: For peak load pricing to be implemented and managed efficiently, sophisticated metering equipment and billing systems are needed

(v) Behavioural Inertia: Consumers may not respond to price signals as expected due to habit, lack of awareness, or limited flexibility.

# 9.7 UNIT SUMMARY

Pricing requires striking a balance between market conditions, customer expectations, and business goals. It is both an art and a science. Taking into consideration both short-term and long-term goals, effective pricing strategies are customized for certain sectors and circumstances. Businesses can create competitive, sustainable, and equitable pricing models by comprehending real-world applications and difficulties. Price discrimination is a potent tactic that allows businesses to optimize profits while maybe helping particular customer segments. However, businesses and authorities must carefully assess its ethical implications and implementation issues. Businesses and legislators must comprehend the economics of price discrimination to guarantee that it is applied fairly and effectively.

#### 9.8 CHECK YOUR PROGRESS

#### **Multiple-Choice Questions (1 Mark Each)**

What is the primary economic concept behind price?
 a) Competition
 b) Market dynamics

- c) Value perception
- d) Profit maximization

# 2. Which type of value represents the benefits derived from using a product?

- a) Exchange value
- b) Value in use
- c) Price discrimination
- d) Market segmentation

#### 3. What is the foundation of transfer pricing?

- a) Market demand
- b) Arm's length principle
- c) Cost-based pricing
- d) Peak load pricing

# 4. Which pricing strategy involves setting low prices initially to attract customers?

- a) Skimming pricing
- b) Penetration pricing
- c) Value-based pricing
- d) Psychological pricing

# 5. What factor primarily influences cost-based pricing?

- a) Competition
- b) Consumer perception
- c) Production costs
- d) Demand elasticity

#### 6. What does second-degree price discrimination focus on?

- a) Individual consumer willingness to pay
- b) Bulk discounts and tiered pricing
- c) Geographic segmentation
- d) Cost-plus pricing

# 7. What pricing strategy uses psychological tactics to influence consumer perception?

- a) Value-based pricing
- b) Competition-based pricing
- c) Psychological pricing
- d) Break-even pricing

### 8. What is the primary objective of skimming pricing?

- a) Maximize early profits
- b) Gain market share
- c) Stabilize demand
- d) Reduce production costs

- 9. What condition is necessary for price discrimination to work effectively?
  - a) Uniform pricing
  - b) Arbitrage
  - c) Market segmentation
  - d) Fixed costs

# **10.** Which pricing method adapts to varying demand during different time periods?

- a) Skimming pricing
- b) Peak load pricing
- c) Transfer pricing
- d) Penetration pricing

#### Short Answer Questions (2 Marks Each)

- 1. Explain the concept of exchange value and value in use with an example.
- 2. List two advantages of using cost-based pricing for businesses.
- 3. Define the term "arm's length principle" in the context of transfer pricing.
- 4. What role does government regulation play in determining the price of essential goods?
- 5. Differentiate between pure bundling and mixed bundling with an example.
- 6. What is the significance of market segmentation in price discrimination?
- 7. Explain how production cost influences the pricing of a product.
- 8. What is psychological pricing, and why is it effective?
- 9. Identify two economic factors that influence transfer pricing.
- 10. Briefly explain skimming pricing and provide an example.

#### Medium-Length Questions (5 Marks Each)

- 1. Discuss how demand and utility affect the price of a product. Provide suitable examples.
- 2. Explain the key differences between penetration pricing and skimming pricing with examples.
- 3. How does the stage of the product life cycle influence pricing strategies?
- 4. Analyze the conditions required for effective price discrimination with real-world examples.
- 5. Discuss the role of competition in determining product pricing.
- 6. Describe the concept of value-based pricing and its advantages for businesses.
- 7. Explain the factors influencing transfer pricing and their impact on multinational companies.

- 8. Compare and contrast cost-plus pricing and target pricing.
- 9. How do government regulations ensure fair pricing for essential goods and services?
- 10. Describe peak load pricing and its application in different industries

#### Long Answer Questions (10 Marks Each)

- 1. Critically evaluate the impact of production costs, market demand, and competition on pricing decisions.
- 2. Discuss the various strategies of cost-based pricing and their advantages and limitations.
- 3. Explain the types of price discrimination, the conditions required for its implementation, and its implications.
- 4. Analyze the importance of transfer pricing in multinational corporations and its regulatory challenges.
- 5. Evaluate the effectiveness of penetration pricing and skimming pricing in gaining market share for new products.
- 6. Discuss the relationship between pricing objectives and the strategic goals of a business.
- 7. Describe the impact of economic, regulatory, and market conditions on transfer pricing.
- 8. Explain the arm's length principle in detail and its implications for global taxation policies.
- 9. Analyze the role of peak load pricing in resource allocation and its challenges in implementation.
- 10. Discuss the significance of psychological pricing and its effect on consumer behaviour with examples.

#### 9.9: REFERENCE/ FURTHER READING MATERIALS

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2. Adhikary, M. (1987). Managerial Economics (3rd ed.).Khosla Publishers, Delhi

3. Koutsoyiannis. A, 2e, Modern Microeconomics, 1979, St. Martin's Press, Inc

# **UNIT 10 NATIONAL INCOME**

#### Objectives

After studying this unit, learners will be able to:

- Evaluate the overall health and growth of an economy by analyzing key indicators like GDP, GNP, and per capita income
- Formulate data-driven foundation for designing fiscal, monetary, and development policies that address economic challenges and ensure stability
- Understand how resources are distributed among various sectors and identify areas needing investment or reallocation to optimize growth
- Forecast economic trends, manage economic cycles, and formulate long-term plans for sustainable development and inclusive growth

# Structure

10.0: Introduction

10.1: Meaning of National Income

10.2: Components of National Income

10.3: Methods of Measuring National Income

10.4: Concepts related to National Income

10.5: Significance of National Income

10.6: Challenges in Measuring National Income

10.7: Circular Flow of Income

10.8: Unit Summary

10.9: Check Your Progress

10.10: Reference/ Further Reading Materials

# **10.0 INTRODUCTION**

A key idea in economics, national income quantifies the total monetary worth of all finished goods and services produced by a nation during a given time period. It is a crucial sign of economic health and aids in the analysis and comparison of national economic performance by stakeholders, economists, and policymakers. With the help of real-world examples to improve comprehension, this chapter examines the idea of national income, including its measurement, components, significance, difficulties, and applications.

#### **10.1 MEANING OF NATIONAL INCOME**

The total amount of money that a nation's citizens make from economic activity over a given time period—typically a year—is referred to as national income. Wages, rentals, interest, and profits from domestically owned factors of production are all included.

The concept of national income was developed in the 17th century but became prominent in the 20th century, especially during the Great Depression. Economists like Simon Kuznets and John Maynard Keynes significantly contributed to its theoretical foundation.

#### **10.2 COMPONENTS OF NATIONAL INCOME**

National income consists of various components that reflect income generation from diverse economic activities.

(i) Wages and Salaries: Income earned by labour in the form of wages and salaries constitutes a major portion of national income. It reflects the rewards for human capital and labour input. For example in countries with large manufacturing sectors like China, wages form a significant part of national income.

(ii) Rent: Rent represents income derived from land and property. It includes rental payments and royalties from natural resources. For example: Oil-producing nations like Saudi Arabia generate substantial rental income from natural resources.

(iii) Interest: Interest income arises from investments in capital, such as loans and bonds. It reflects the rewards for financial capital. For example: Banking sectors in developed countries, such as the US, contribute significantly to national income through interest earnings.

(iv) Profits: Corporate profits from businesses add to national income. They represent the return on entrepreneurship and risk-taking. For example: Tech giants like Apple and Microsoft contribute to the US's national income through their profits.

(v) Mixed Income: Mixed income refers to earnings from self-employment or activities combining labour and capital. For example: Small-scale farmers in India or entrepreneurs in Brazil contribute mixed income to their respective economies.

#### **10.3 METHODS OF MEASURING NATIONAL INCOME**

There are three primary methods of measuring national income:

(i) Product method (Output method): This method calculates the market value of all final goods and services produced in an economy. It involves adding the value-added at each production stage. For example in the automotive industry, the value of cars is included, but the cost of steel and parts used is subtracted to avoid double counting.

(ii) Income Method: This approach sums up all incomes earned by factors of production, including wages, rent, interest, and profits. For example: In the US, data from labour markets, rental agreements, and financial institutions is aggregated to calculate national income using this method

(iii) Expenditure method: This method focuses on total spending on final goods and services within an economy. For example: The GDP of Germany, calculated using this method, includes household consumption, industrial investments, government expenditure, and net exports.

#### **10.4 CONCEPTS RELATED TO NATIONAL INCOME**

(i) Gross Domestic Product (GDP): Gross Domestic Product (GDP) measures the total market value of all final goods and services produced within a country's borders in a specific time period. It includes production by domestic and foreign entities operating within the country. GDP is often used as a primary indicator of economic health. It can be measured in nominal terms (current prices) or real terms (adjusted for inflation).

The most common way to calculate GDP is using the expenditure approach. The formula is:

GDP = C + I + G + (X - M)

Where:

- **C** = Consumer spending (Consumption): This includes purchases of goods and services by individuals and households.
- I = Business investment (Investment): This includes spending by businesses on capital goods like machinery, equipment, and buildings.

- **G** = Government spending (Government spending): This includes government purchases of goods and services, but not transfer payments like social security or welfare.
- (X M) = Net exports (Net exports): This is the difference between a country's total exports (X) and total imports (M).

(ii) Net Domestic Product (NDP): Net Domestic Product measure that represents the total value of all finished goods and services produced within a country's borders during a specific period, minus the depreciation of capital goods.

NDP= GDP – Depreciation.

Where:

- GDP= Gross Domestic Product
- Depreciation: Depreciation refers to the wear and tear or obsolescence of capital assets over time.

(iii) Gross National Product (GNP): A country's gross national product (GNP) is the sum of its GDP and the net income that its citizens get from outside sources (such as dividends and remittances); it does not include the income that foreign nationals receive domestically.

The formula to measure the gross national product is

GNP = GDP + Net Factor Income from Abroad

Where:

- GDP: Gross Domestic Product
- Net Factor Income from Abroad: The difference between income earned by domestic residents from foreign sources and income earned by foreign residents from domestic sources.

(iv) Net National Product: A country's economic output that accounts for depreciation is measured by its Net National Product (NNP). It is calculated by subtracting the depreciation of capital assets from the total value of goods and services produced by a nation's inhabitants both domestically and abroad.

The formula to calculate net national product is

NNP = GNP - Depreciation

Where:

- NNP: Net National Product
- GNP: Gross National Product
- Depreciation: The decrease in the value of assets over time due to wear and tear or obsolescence.

(v) **Disposable Income:** The amount of money left over after taxes that a person or household can spend or save is known as disposable income. Taxes are deducted from total income to compute it.

The formula to calculate disposable income is

Disposable Income = Total Income - Taxes

Let us consider an example: Assume you receive a salary of \$3,000 each month. Your net income is \$2,500 after federal, state, and municipal taxes are subtracted. Your disposable income is \$2,500.

Essential costs including rent, utilities, groceries, and transportation must now be covered. Your monthly discretionary income will be \$700 if these expenses come to \$1,800. You can save this money or utilize it for nonessential purchases.

Breakdown:

Total Income: \$3,000

Taxes: \$500

Disposable Income: \$2,500

Essential Expenses: \$1,800

Discretionary Income: \$700

#### **10.5 SIGNIFICANCE OF NATIONAL INCOME**

(i) Economic Planning: A government or other central authority sets economic goals and allots resources to meet them through a process known as economic planning. It entails creating plans and policies to direct economic growth. Conversely, a nation's economic output is gauged by its national income. Since increasing national revenue is frequently the goal of economic planning, the two are intimately related.

Economic planning can significantly impact national income by:

• **Resource Allocation:** Economic planning involves allocating resources efficiently across sectors such as agriculture, industry, and

services. National income statistics indicate which sectors contribute significantly to GDP and which require investment. For example: In China, the government used national income data to shift resources from agriculture to manufacturing and technology during its economic transformation

#### • Industrial Development:

- ✓ By implementing measures like tax incentives, protective tariffs, and subsidies, governments can promote the expansion of key industries.
- ✓ Promoting diversification can stabilize the economy and lessen reliance on a small number of industries.

#### • Infrastructure Development:

- ✓ Infrastructure improvements in communication and transportation can boost economic activity, lower prices, and ease commerce.
- ✓ Numerous industries can benefit from increased productivity and efficiency thanks to modern infrastructure.

#### • Human Capital Development:

- ✓ Putting money into education and training can improve the productivity and skill set of the work force.
- ✓ A healthier workforce and higher about productivity can result from improved healthcare.

#### • Technological Advancement:

- ✓ Innovation and technical advancement can be stimulated by government financing for research and development.
- ✓ Efficiency and competitiveness can be increased by promoting the adoption of innovative technology

#### (ii) Measuring Economic Growth

Economic growth is a critical indicator of a country's progress and prosperity. It refers to the increase in a nation's output of goods and services over time, typically measured through changes in national income metrics. National income statistics, particularly Gross Domestic Product (GDP), Gross National Product (GNP), and per capita income, are central to evaluating economic growth.

Measuring economic growth is vital for understanding the health of an economy. It helps to:

- Assess the effectiveness of economic policies.
- Guide investment decisions by governments and private sectors.
- Compare economic performance over time or between countries.
- Evaluate changes in living standards.

• Identify structural changes in the economy, such as shifts from agriculture to industry or services.

#### (iii) Standard of Living

Per capita income, derived from national income, is a key measure of living standards. It helps planners focus on improving social infrastructure, such as health and education, to raise overall welfare. For example: Scandinavian countries, with high per capita incomes, prioritize equitable access to public services in their economic plans.

A number of indicators are frequently used to evaluate standard of life, while there isn't a single ideal way to do so:

- GDP per capita: This indicates how much money a nation's residents make on average.
- The Human Development Index (HDI) takes into account variables including income, education, and life expectancy.
- Purchasing Power Parity (PPP): This modifies GDP to account for variations in living expenses among nations.
- Social Indicators: Measures of poverty, inequality, and social welfare are examples of social indicators.

# **10.6 CHALLENGES IN MEASURING NATIONAL INCOME**

#### (i) Informal Economy

The informal economy has a significant impact on national income calculations. Since these activities are not officially recorded, they are usually excluded from GDP and other measures of national income. This leads to an underestimation of a country's true economic production.

The "shadow economy," often known as the informal economy, is made up of commercial endeavours that the government does not formally acknowledge or document. This covers a broad range of occupations, from domestic work and street vending to illegal trading and underground industry.

Calculations of national income are greatly impacted by the informal economy. These activities are frequently left out of GDP and other metrics of national income as they are not formally documented. As a result, the actual economic output of a nation is underestimated.

#### (ii) Non-Market Activities
Economic activities that take place outside of the official market system are referred to as non-market activities. These activities are usually not included in conventional metrics of economic output, such as GDP. Although these actions don't have a clear monetary worth or price tag, they nevertheless improve people's lives and society

The different types of non-market activities are household production, volunteer work, and informal economy.

While non-market activities are not directly included in GDP calculations, they contribute significantly to overall economic well-being. These activities produce goods and services that contribute to individuals' and families' well-being. Moreover, they contribute to the development of skills and knowledge and strengthen social bonds and community cohesion.

# (iii) Valuation Issues

The difficulties in determining the proper monetary values for commodities and services give rise to valuation problems. These issues might take many different shapes.

- Valuation of Public Goods and Services: The cost of production is frequently used to determine the worth of public goods and services including healthcare, education, and national defence. This strategy, however, ignores their potentially far greater actual contribution to society. For example, it is challenging to precisely measure the advantages of public parks or clean air.
- Depreciation and Capital Consumption: Another difficulty in valuation is taking capital consumption and depreciation into account. Accurately estimating the wear and tear of capital assets is difficult and prone to mistakes. National income figures may be overestimated if depreciation is underestimated, and vice versa
- Valuation of Environmental Resources: Traditional metrics of national income do not sufficiently account for resource depletion and environmental degradation. Environmentally damaging practices like deforestation and the mining of fossil fuels may boost GDP temporarily but undermine long-term economic viability. Similarly, national accounts hardly ever incorporate the value of environmental services like water purification or carbon sequestration.

#### (iv) Statistical Errors

Inaccuracies in data collection, processing, and interpretation lead to statistical errors. The accuracy of national income estimates may be severely

impacted by these mistakes. Censuses and surveys are key components of national income calculations. The data may be distorted by incomplete responses, non-responses, or sampling errors.

Individuals and businesses may over report their income in order to be eligible for loans or subsidies, or they may underreport their income in order to avoid paying taxes. Moreover, significant time gaps are frequently present in the collection of economic data, making the information dated by the time it is examined.

# **10.7 APPLICATIONS OF NATIONAL INCOME DATA**

National income data play a pivotal role in shaping economic policies. The following are some key applications:

#### (i) Macroeconomic Planning

Governments use national income data to formulate long-term economic plans. GDP and other national income measures help set growth targets, allocate resources, and identify sectors requiring intervention. For instance, if data reveal stagnation in industrial output, policies might focus on incentivizing industrial growth.

#### (ii) Fiscal Policy Design

National income figures are critical for designing fiscal policies, including taxation and government spending. By analyzing income distribution patterns, governments can implement progressive tax systems and social welfare programs to reduce inequality.

#### (iii) Monetary Policy Formulation

Central banks rely on national income data to set monetary policies. GDP growth rates, inflation data, and consumption patterns inform decisions about interest rates, money supply, and credit controls to stabilize the economy.

#### (iv) Poverty and Inequality Reduction

National income data provide insights into income distribution, enabling policymakers to design targeted interventions. For example, if data indicate high poverty levels in rural areas, policies may focus on rural development and employment generation programs.

# (v) Sectoral Policies

Detailed national income data allow for sector-specific policy formulation. For instance, if agriculture's share in GDP is declining, governments might introduce subsidies, improved infrastructure, or research and development initiatives to boost the sector.

#### (vi) Evaluating Economic Performance

National income data serve as benchmarks for assessing the effectiveness of past policies. For instance, comparing GDP growth rates before and after implementing a stimulus package helps evaluate its impact.

#### (vii) International Trade and Investment

Governments use national income data to negotiate trade agreements and attract foreign investment. High GDP growth rates signal economic stability, making a country more attractive to investors.

#### (viii) Environmental and Sustainable Development Policies

Incorporating measures like Green GDP, which adjusts national income data for environmental costs, helps policymakers focus on sustainable development. National income statistics can guide investments in renewable energy, conservation projects, and pollution control.

# (ix) Regional Development

Disaggregated national income data highlight regional disparities, guiding regional development policies. For instance, policies may focus on boosting underdeveloped regions by improving infrastructure, education, and healthcare.

# (x) Social and Welfare Policies

National income data inform social policy decisions, such as healthcare and education funding. By analyzing per capita income and consumption patterns, governments can tailor welfare programs to the needs of different population segments.

# **10.7 CIRCULAR FLOW OF INCOME**

A key idea in economics, the circular flow of income depicts how resources, money, goods, and services travel around an economy. It offers a framework for comprehending the relationships between economic actors, the distribution of resources, and the production and distribution of national revenue. This idea is essential for evaluating economic performance, studying economic activities, and developing policies.

The circular flow of income describes the continuous movement of money and resources between different sectors of the economy. It is based on the premise that one entity's expenditure is another's income. This interconnectedness ensures that economic activities are interdependent, and changes in one part of the economy influence the whole system.

In its simplest form, the circular flow involves two primary agents: households and firms. Households provide factors of production—land, labour, capital, and entrepreneurship—to firms, which use these resources to produce goods and services. In return, firms compensate households with wages, rent, interest, and profits. Households then spend their income on goods and services produced by firms, creating a continuous loop of economic activity.

#### 10.7.1 Components of Circular Flow of Income

The circular flow of income involves multiple elements that interact to sustain economic activity:

#### (i) Households

Households are the owners of factors of production and provide the resources to firms. They receive income in the form of wages, rent, interest, and profits, which they use to purchase goods and services. Households are both producers (by providing labour and other resources) and consumers.

#### (ii) Firms

Firms are economic units that produce goods and services. They purchase factors of production from households and convert them into final products. Firms earn revenue by selling these products to households and other entities.

#### (iii) Government

The government collects taxes from households and firms, provides public goods and services, and redistributes income through welfare programs. It plays a regulatory role and ensures economic stability.

# (iv) Financial Sector

Financial institutions like banks facilitate savings and investments. Households save a portion of their income, which is then lent to firms for investment. This process is crucial for maintaining the flow of money in the economy.

# (v) Foreign Sector

In an open economy, international trade and capital flows become part of the circular flow. Exports bring money into the economy, while imports lead to outflows. Foreign investments and remittances also influence the flow.

# 5.7.2 Models of Circular Flow of Income

The circular flow of income can be illustrated using different models depending on the complexity of the economy being analyzed.

# (i) Two Sector Model

A two-sector economy is a simplified model of an economy that consists of only two sectors i.e. households and firms.

Households: Individuals or families who own factors of production (land, labour, capital, and entrepreneurship) and supply these factors to firms. It provides factors of production to firms in exchange for income.

Firms: Firms produce goods and services using these factors and sell them to households.

Figure 10.1 Circular flow of Income in two sector model



This model assumes no government, financial or foreign sector involvement. It highlights the basic exchange of resources and money but does not account for savings, taxes, or trade.

# (ii) Three Sector Model

A three-sector model, which includes the government sector in addition to consumers and businesses, provides a more accurate depiction of an economy. The circular flow of money is greatly impacted by government expenditure, taxes, and transfers, all of which are taken into consideration in this model.

Figure 10.2 Circular flow of Income in three sector model



- Factor Services Flow: Households supply factors of production (land, labour, capital, and entrepreneurship) to firms.
- Factor Payments Flow: Firms pay households for these factor services in the form of rent, wages, interest, and profit.
- **Goods and Services Flow:** Firms use the factors of production to produce goods and services, which they sell to households and the government.

- **Consumption Expenditure Flow:** Households use the income they receive from factor payments to purchase goods and services from firms.
- **Taxes Flow:** Both households and firms pay taxes to the government.
- **Government Spending Flow:** The government uses tax revenue to purchase goods and services from firms and to provide transfer payments to households.
- (iii) Four Sector Model

A four-sector model is the most comprehensive representation of an economy, incorporating four key sectors. They are households, firms, government and foreign sector.





- Factor Services Flow: Households supply factors of production (land, labour, capital, and entrepreneurship) to firms.
- Factor Income Flow: Firms pay households for these factor services in the form of rent, wages, interest, and profit.
- **Goods and Services Flow:** Firms use the factors of production to produce goods and services, which they sell to households, the government, and the foreign sector.
- **Expenditure Flow:** Households use the income they receive from factor payments to purchase goods and services from firms.
- **Taxes Flow:** Both households and firms pay taxes to the government.

- **Government Expenditure Flow:** The government uses tax revenue to purchase goods and services from firms and to provide transfer payments to households.
- **Exports Flow:** The foreign sector buys goods and services from domestic firms (exports) and sells goods and services to domestic households and firms (imports).
- Leakages and Injections: Savings, taxes, and imports are leakages from the circular flow, while investment, government spending, and exports are injections

(iv) Five Sector Model

A five-sector model provides a more comprehensive representation of the circular flow of income, incorporating households, firms, government, foreign sector and financial sector.



Figure 10.4 Circular flow of income in five sector model

Households save part of their income, which flows to the financial sector. The financial sector lends these savings to firms for investment purposes.

# **10.8 UNIT SUMMARY**

National income represents the total monetary value all goods and services produced by a country within a specific period, typically a year. It reflects the economy's overall health, including wages, rent, interest, and profits earned by factors of production. Measuring national income helps assess economic performance, compare living standards, and formulate policies. However, challenges such as the informal economy, environmental costs, and valuation issues can affect its accuracy. National income data is critical for fiscal planning, managing resources, and ensuring equitable growth. It also provides insights into economic fluctuations and guides strategies for sustainable development.

# **10.9 CHECK YOUR PROGRESS**

#### **Multiple-Choice Questions (1 Mark Each)**

- 1. Who is known for significantly contributing to the theoretical foundation of national income?
  - A. Adam Smith
  - B. Simon Kuznets
  - C. Alfred Marshall
  - D. Karl Marx
- 2. Which component of national income includes income from selfemployment?
  - A. Wages
  - B. Mixed Income
  - C. Rent
  - D. Interest
- 3. What method of national income measurement focuses on the value-added at each production stage?
  - A. Expenditure method
  - B. Income method
  - C. Product method
  - D. Consumption method

# 4. GDP measures the total market value of all final goods and services produced:

- A. Globally
- B. Within a country's borders
- C. By domestic residents only
- D. Excluding exports

#### 5. What is the formula for Disposable Income?

- A. Total Income + Taxes
- B. Total Income Depreciation

- C. Total Income Taxes
- D. GNP Depreciation

# 6. Which sector is NOT part of the two-sector circular flow model?

- A. Households
- B. Firms
- C. Government
- D. None of the above

#### 7. What does NDP stand for?

- A. Net Domestic Product
- **B.** National Depreciation Product
- C. Net Derived Product
- D. None of the above

# 8. Which country's government used national income data to shift resources to manufacturing and technology?

- A. USA
- B. China
- C. Germany
- D. India

# 9. The shadow economy refers to:

- A. Activities officially documented
- B. Illegal and unrecorded activities
- C. National income planning
- D. None of the above

# 10. Net National Product (NNP) is calculated as:

- A. GDP + Net Factor Income
- B. GNP Depreciation
- C. GDP Depreciation
- D. GNP + Depreciation

#### Short Answer Questions (2 Marks Each)

- 1. Differentiate between GDP and GNP with examples.
- 2. Explain the role of interest income in national income measurement.
- **3.** What is the significance of Simon Kuznets' contribution to national income?
- **4.** Briefly describe the expenditure method of calculating national income.
- **5.** Why are non-market activities excluded from GDP calculations? Provide an example.
- 6. Explain how depreciation impacts the calculation of NDP.
- 7. Discuss the significance of per capita income in measuring the standard of living.

- 8. What are the challenges in valuing public goods like clean air?
- **9.** How does the financial sector contribute to the circular flow of income?
- 10. Describe the three-sector model of the circular flow of income.

#### Medium-Length Questions (5 Marks Each)

- **1.** Explain the components of national income with relevant examples.
- **2.** Compare and contrast the product, income, and expenditure methods of national income measurement.
- 3. Discuss how national income data aids in macroeconomic planning.
- 4. What are the key applications of national income data for fiscal policy design?
- 5. Describe the five-sector model of the circular flow of income and its relevance in an open economy.
- **6.** How do valuation issues in environmental resources impact GDP accuracy? Provide examples.
- 7. Explain the role of government policies in using national income for regional development.
- **8.** What challenges arise due to the informal economy in national income calculations?
- 9. Discuss the role of national income statistics in measuring economic growth.
- **10.** How do indicators like GDP per capita and HDI provide insights into living standards?

#### Long Answer Questions (10 Marks Each)

- 1. Describe in detail the methods of measuring national income and their respective advantages and limitations.
- **2.** Discuss the challenges in measuring national income with emphasis on the informal economy and valuation issues.
- **3.** Explain the relationship between national income and economic planning, using examples from various countries.
- **4.** Analyze the circular flow of income in a five-sector model and explain its significance.
- **5.** How does national income data inform environmental and sustainable development policies? Discuss with examples.
- 6. Evaluate the applications of national income data in poverty and inequality reduction strategies.
- 7. Discuss the impact of technological advancement on national income and economic growth.
- **8.** What are the roles of household and firm sectors in the circular flow of income? Provide detailed examples.
- **9.** Explain how national income statistics can guide investment decisions and policy evaluation.
- **10.** Compare GDP, GNP, and NNP in terms of their calculation, uses, and limitations.

# **10.10 REFERENCE/ FURTHER READING MATERIALS**

1. Jhingan, M.L., Microeconomics 8th Edition, Vrinda Publications (P) Ltd.

2. Mote V, Paul S and Gupta G, 3e, Managerial Economics, 2004, Tata McGraw Hill

3. Adhikary, M. (1987). Managerial Economics (3rd ed.).Khosla Publishers, Delhi

# **UNIT 11 MONEY SUPPLY AND MEASUREMENT**

### Objectives

After studying this unit, learners will be able to:

- Apply the knowledge of money supply to managerial decisionmaking, including budgeting, pricing strategies, and financial planning
- Understand the practical implications of money supply in realworld scenarios, such as responding to changes in monetary policy or managing the effects of inflation on business operations
- Develop critical thinking skills to assess the effectiveness of monetary policies in addressing economic challenges and fostering sustainable growth

# Structure

11.0: Introduction

11.1: Meaning of Money

11.2: Types of Money

11.3: Characteristics of money

11.4: Functions of Money

11.5: Understanding Money Supply

11.6: Components of Money Supply

11.7: Methods of Measuring Money Supply

11.8: Factors Influencing Money Supply

11.9: Effects 0f Money Supply on Economy

11.10: Unit Summary

11.11: Check Your Progress

11.12: Reference/ Further Reading Materials

# 11.0 INTRODUCTION

Money and banking pray a vital role in the functioning of modern economies. They form the backbone of economic transactions and facilitate

the efficient allocation of resources. This chapter explores the concept of money, its characteristics, types, functions, and the crucial role it play in an economy.

#### 11.1 MEANING OF MONEY

A means of exchange that makes it easier to buy and sell goods and services is money. It serves as a measure of value, a store of value, and a standard for deferred payments. Money eliminates the inefficiencies of the barter system by providing a universally accepted medium for transactions.

The evolution of money from barter systems to the complex financial instruments of today mirrors human technological and social advancements.

# **11.2 TYPES OF MONEY**

#### (A) Commodity Money

Commodity money has intrinsic value, as it is composed of items that have value in themselves, beyond their use as money. Historically, this form of money included precious metals like gold and silver, livestock, grains, and other valuable resources. The value of commodity money is directly linked to the material from which it is made. For example, gold coins were considered valuable because gold itself was scarce and highly prized.

To understand the significance of commodity money, consider its role in ancient economies. In ancient Mesopotamia, barley was used as a standard form of currency due to its value as a staple food. Similarly, in the premodern Western world, items such as iron and copper rings served as money for the Vikings. The supply of these commodities influenced their value; a plentiful harvest could devalue barley, while a newly discovered mine could flood the market with a particular metal, reducing its worth.

The gold standard, a monetary system in which a nation's currency or paper money had a value directly tied to gold, is another example. Countries agreed to convert paper money into a fixed amount of gold. This system dominated international trade and finance in the 19th and early 20th centuries.

#### (B) Fiat Money

Fiat money is issued by governments and does not have intrinsic value; instead, it derives its value from the trust and authority of the issuing government. Unlike commodity money, fiat money cannot be redeemed for a physical good and gets its value from the stability of the governing institution and the economy. Modern currencies, such as the US dollar, Euro, and Japanese yen, are examples of fiat money.

Fiat money offers several advantages over commodity money. It is easier to manage, as central banks can control the supply, and it is not bound by the physical limitations of a commodity. For example, during economic downturns, governments can infuse more money into the economy to stimulate growth, a process known as quantitative easing. Conversely, they can reduce the money supply to curb inflation.

However, fiat money's reliance on governmental stability can also be a drawback. Hyperinflation, as seen in Zimbabwe in the late 2000s, can erode the value of fiat money rapidly. A lack of trust in the issuing authority, due to political instability or poor economic management, can lead to a rapid depreciation of the currency's value.

### (C) Digital and Crypto-Currencies

Digital and crypto-currencies represent the latest evolution in the forms of money. Digital currencies include any money that exists only in digital form and not in physical form. It encompasses a wide range of forms, including traditional bank electronic money, central bank digital currencies (CBDCs), and crypto-currencies. Crypto-currencies, like Bitcoin and Ethereum, are decentralized digital currencies based on block chain technology, which ensures secure and verifiable transactions without the need for a central authority.

The creation of Bitcoin in 2009 marked the launch of the first decentralized crypto-currency. Bitcoin's finite supply, limited to 21 million coins, makes it akin to commodity money in digital form. Transactions are verified by network nodes through cryptography and recorded in a public distributed ledger called a block chain. The advantage of crypto-currencies includes enhanced security, reduced transaction costs, and the potential for anonymity.

The rapid adoption of crypto currencies reflects a growing skepticism of traditional fiat currencies and banking systems. However, issues such as regulatory uncertainty, volatility, and the potential for use in illicit activities pose challenges. Despite this, crypto-currencies have demonstrated remarkable growth, with the combined market capitalization reaching hundreds of billions of dollars. Major companies like Tesla and PayPal have begun accepting Bitcoin, signaling a shift toward broader acceptance.

# **11.3 CHARACTERISTICS OF MONEY**

### (A) Durability

For any item to be considered money, it must exhibit durability; it must withstand wear and tear so it can be used repeatedly without degrading. Durability ensures that money can be stored for long periods and retain its function and value. Ancient economies often used metals like gold and silver for coins because of their durability. Today's banknotes are printed on specially designed paper or polymer that resists wear.

An example of durability in money is the US dollar coin, made primarily of an alloy of copper and nickel to withstand tens of thousands of transactions before any significant wear. Similarly, modern banknotes are designed with high-quality materials and security features to prevent damage and counterfeiting.

# (B) Portability

Money must be portable; it should be easy to carry and use in daily transactions. Portability allows money to be transferred efficiently across distances and supports economic activity. Commodity money like gold coins was limited by weight and bulk, whereas modern currency notes and digital money are far more portable.

For instance, a digital currency like Bitcoin can be transferred anywhere in the world within minutes using a smartphone or computer. This high degree of portability is one reason for its growing popularity and use in international trade and investments.

#### (C) Divisibility

A key characteristic of effective money is divisibility; it states to be divided into smaller denominations to facilitate transactions of varying sizes. Divisibility ensures that money can be used for both small everyday purchases and larger investments. Precious metals like gold could be divided into smaller units without losing value, which is why they were historically favoured.

Modern currencies are divisible into smaller units, such as dollars into cents, facilitating a wide range of transactions. Crypto-currencies like Bitcoin are divisible down to eight decimal places, allowing for transactions of very

small amounts, increasing their utility in micro-transactions and everyday use.

# **11.4 FUNCTIONS OF MONEY**

# (A) Medium of Exchange

A primary function of money is to serve as a medium of exchange; it facilitates transactions by eliminating the inefficiencies of barter systems, where goods or services are exchanged directly. Money acts as an intermediary, enabling sellers to transfer goods or services to buyers in return for money, which can then be used to purchase other goods or services.

The efficiency gained by using money a medium of exchange is illustrated by its ability to resolve the "double coincidence of wants" problem inherent in barter systems. This problem arises when two parties each possess something the other wants, but the coincidence of their desires must align for a direct exchange to occur. Money removes this obstacle, as seen in marketplaces where various goods are bought and sold using a common currency like the US dollar.

#### (B) Store of Value

Money must function a store of value, allowing individuals and businesses to save or store their wealth and defer consumption until a later date. The capacity of money to store value enables savings, investment, and economic planning. For instance, savers trust that the money they set aside today will retain its value, allowing them to make future purchases.

However, inflation and deflation can affect the store of value function. For example, during periods of hyperinflation, like in Venezuela in the 2010s, the local currency lost so much value that people preferred to hold more stable foreign currencies or tangible assets like gold. Conversely, during deflationary periods, the value of money increases, but this can lead to reduced spending and economic stagnation. Central banks mitigate these issues by adjusting monetary policy to maintain price stability.

#### (C) Unit of Account

Money serves as a unit of account, providing a standard measurement of value that simplifies the comparison of prices and the calculation of costs and profits. This function is critical because it anows individuals and

businesses to make informed economic decisions, set prices, and manage budgets.

For example, businesses use money and a unit of account to calculate revenue, expenses, profits, and losses, thereby enabling efficient financial reporting and decision-making. Consumers benefit by being able to compare prices of goods and services, making it easier to evaluate the best use of their resources.

# **11.5 UNDERSTANDING MONEY SUPPLY**

# **Definition and Importance of Money Supply**

The concept of money supply encompasses the total amount of monetary assets available within an economy at a specific point in time. It includes various types of currency, bank deposits, and other liquid assets that circulate within the financial systems of a country. The importance of money supply in an economy cannot be overstated, as it represents the backbone of all economic activities, facilitating transactions, valuation of goods and services, and the maintenance of economic stability.

The role of money supply within the economy is multifaceted. Firstly, it acts as a medium of exchange, allowing consumers and businesses to purchase goods and services efficiently. If the absence of a trusted monetary system, economies may revert to bartering, which is inefficient and restricts the growth of commerce. Secondly, it serves as a unit of account, providing a common measure for valuing goods and services. Thirdly, money supply acts as a store of value, enabling individuals and businesses to save and plan for the future. Lastly, it is integral for the execution of credit transactions, from personal loans to large-scale corporate financing.

The influence of money supply on inflation and interest rates is profound. When the money supply within an economy increases faster than the growth of real economic output, it typically leads to inflation, where the purchasing power of money declines and prices of goods and services rise. Central banks, such as the Federal Reserve in the United States, closely monitor money supply to manage inflation levels. Conversely, a restricted money supply can lead to deflation, an equally harmful situation where prices fall, and economic activity slows down due to reduced spending.

Interest rates, cosely tied to the money supply, also play a critical role in maintaining economic balance. Central banks adjust their interest rates in response to changes in the money supply to either encourage borrowing and

investment (through lower interest rates) or to temper spending and reduce inflation (by raising interest rates). The central bank's manipulation of interest rates as a tool to influence economic activities underscores the importance of a stable and well-monitored money supply within an economy.

# **11.6 COMPONENTS OF MONEY SUPPLY**

The money supply within an economy can be categorized into different components, each representing varying degrees of liquidity. The major components include M0, M1, M2, and M3, among other broader measures.

#### (i) M0 and M1:

M0 represents the most liquid form of money, consisting of physical currency in circulation and reserves held by banks. It includes notes and coins that are readily accepted for transactions. M1 is a broader measure that includes M0 along with demand deposits such as checking accounts, which can be easily accessed and used for payments. M1 indicates the money available for immediate use in daily economic activities.

#### (ii) M2:

M2 encompasses M1 and adds near-money assets, including savings deposits, time deposits and non-institutional money market funds. These assets, while not as liquid as those in M1, can be swiftly turned into money without substantial loss of value. M2 provides a broader perspective of the money supply and is often used as an indicator of the money available for spending and investment.

#### (iii) M3 and beyond:

M3 includes M2 as well as larger time deposits, institutional money market funds, and other larger liquid assets. M3 is no longer officially reported by the Federal Reserve in USA, it is still used in many other countries for policy analysis. M4 and other broader measures can include more extensive types of assets, such as treasury bills, commercial paper, and even credit instruments like certificates of deposit. These extended categories offer a detailed picture of overall liquidity and the potential for economic growth and stability. Understanding these components is crucial for policymakers, economists, and financial analysts, as it aids in assessing the overall financial health and liquidity within the economy. Each component, from M0 to M3, presents a different layer of money that can influence spending behaviour, investment decisions, and economic outcomes.

# 11.7 METHODS OF MEASURING MONEY SUPPLY

The measurement of money supply is a critical task for central banks, as it informs policy decisions and economic forecasts. Various methods are employed to measure the money supply accurately, each with its specific tools and implications for economic stability. The methods for measuring money supply in country like India and USA are different.

In India, Reserve Bank of India measures money supply in four ways using M1, M2, M3 and M4.

M1 or Narrow Money: This is the narrow measure of money supply and is composed of following items

M1 = C+ DD+OD C= Currency with public DD= Demand deposits with the public in the commercial and cooperative bank OD= Other deposits held by the public with RBI

The money supply is the most liquid measure of money supply as the money included in it can be easily used as medium of exchange, i.e. as a means of making payments for transactions.

**M2**: M2 is a more general term for the money supply. The idea of money supply M2 encompasses saving deposits with post office savings banks in addition to the three components of M1.

M2=M1 + Savings deposits with the post office savings banks.

The money supply M2 is different from M1 is that saving deposits with post office savings banks are not as liquid as demand deposit.

**M3 or Broad money**: M3 is a general term for the money supply. Here deposits with banks are included in the idea of money supply M3, in addition to the elements of money supply contained in M1.

M3 = M1 +Time deposits with the banks

**M4:** All of the components in M3 are included in the money supply measure M4, along with the total amount of deposits made with post office savings organizations.

M4= M3 + Total Deposits with the post office savings organisations

In USA, the money supply is measured in the monetary base M1, and M2.

**The monetary base:** The sum of currency in circulation and reserve balances, or deposits held by banks and other depository institutions in their accounts at the Federal Reserve.

M1: The sum of currency held by the public and transaction deposits (inclusive of currency held by the public and transaction deposits—a category that includes balances held in checking accounts and other very liquid deposits) at depository institutions (which are financial institutions that obtain their funds mainly through deposits from the public, such as commercial banks, savings and loan associations savings banks, and credit unions) and branches of foreign banks operating in the United States.

**M2:** M1 plus small-denomination time deposits (those issued in amounts of less than \$100,000) and retail money market mutual fund shares.

#### Central bank's role:

When it comes to assessing the money supply, central banks like the Federal Reserve, the European Central Bank, and the Bank of England are crucial. One of their duties is to keep an eye on and regulate the quantity of money moving through the economy in order to keep prices steady and promote economic expansion. To make precise estimates of the money supply, central banks gather information from financial institutions and apply statistical techniques. In order to affect the money supply, they also carry out monetary policies such open market operations, reserve requirements, and interest rate adjustments.

#### Use of monetary aggregates:

Monetary aggregates, such as M0, M1, M2, and M3, serve as the primary means of measuring money supply. Each aggregate represents different levels of liquidity, with M0 being the most liquid and M3 includes broader, less liquid assets. The use of these aggregates helps central banks and policymakers understand the distribution or money in the economy and make informed decisions to regulate it. By analyzing trends in these aggregates, central banks can gauge the effectiveness of their monetary policies and adjust them accordingly to achieve macroeconomic objectives.

#### **Differences between measurement methods**

Different methods of measuring money supply can yield varying results due to the inclusion of different types of assets and data sources. For example, some methods may focus primarily on physical currency and demand deposits, while others may include broader measures accounting for various types of savings and investment accounts. Additionally, the choice of measurement method can be influenced by the specific economic context and objectives of the central bank. For instance, during periods of high inflation, a central bank may place greater emphasis on more liquid aggregates like M1 and M2 to quickly assess the impact of its policies on consumer spending and inflation.

Ultimately, the selection and application of specific measurement methods depend on the economic environment, policy goals, and the need for accuracy and reliability in data collection. The complexity of these measurements requires central banks to continuously refine their methodologies and leverage advanced statistical tools to ensure that their estimates reflect the true state of money supply within the economy accurately.

# **11.8 FACTORS INFLUENCING MONEY SUPPLY**

Several factors influence the money supply within an economy. Understanding these factors is essential for policymakers and central banks as they navigate through monetary policy decisions to ensure economic stability and growth.

# (i) Central banking policies:

Entral banks have significant power over the quantity of money in circulation via enacting monetary policies. For instance, a central bank may reduce interest rates to promote borrowing and spending during economic downturns, thus expanding the money supply; conversely, in reaction to inflation, the central bank may increase interest rates to discourage borrowing and spending, thus reducing the money supply. Achieving preset macroeconomic outcomes and maintaining economic stability depend heavily on these policy choices.

# (ii) Reserve requirements:

The amount of money that banks have available to lend can be changed by central banks through changes to reserve requirements; lowering reserve requirements expands the money supply by increasing the amount of loanable funds available, while raising reserve requirements reduces the amount of money that banks can lend, thereby decreasing the money supply. The percentage of depositor balances that banks are required to retain in reserve and refrain from lending out is known as the reserve requirements.

#### (iii)Market operations:

Market activity, particularly open market operations, are crucial for managing the money supply. Central banks buy and sell securities, government securities, and other financial instruments to regulate the amount of money in the economy. By putting money into the banking system through the purchase of assets, a central bank can expand the money supply. However, since money is removed from the banking system when securities are sold, the money supply is reduced. These processes are crucial tools for central banks to achieve their monetary policy objectives and preserve economic stability.

# 11.9 EFFECTS OF MONEY SUPPLY ON ECONOMY

The money supply significantly impacts the broader economy, influencing various critical economic measures such as Gross Domestic Product (GDP), employment, and long-term economic health.

# (i) Relationship with GDP:

GDP and the money supply are directly correlated. By raising the quantity of money available for investment and spending, an increase in the money supply can stimulate economic activity, create demand for goods and services, and possibly increase GDP and production. However, a reduction in the money supply may lead to less spending and investment, which would impede GDP growth and dampen economic activity. The money supply's impact on GDP highlights how important it is for promoting economic growth and development.

#### (ii) Impact on employment:

Employment levels in an economy are also influenced by the money supply. When the money supply rises, businesses may choose to grow and add employees in response to the rising demand for goods and services. This can increase economic growth and lower unemployment. On the other hand, a reduction in the money supply may result in less demand for products and services, which could cause business activity to decline and unemployment rates to rise. Central banks keep an eye on the money supply and modify it to affect employment levels, maintaining economic stability and controllable unemployment.

#### (iii) Long-term economic effects:

The long-term effects of money supply on the economy are profound. Over time, the appropriate management of money supply can contribute to sustained economic growth, stable prices, and low unemployment rates. However, mismanagement of money supply can lead to significant economic challenges. For example, an excessively high money supply can lead to hyperinflation, where prices spiral out of control, eroding purchasing power and undermining economic stability. On the other hand, an excessively low money supply can lead to deflation, where prices fall, leading to reduced economic activity and increased unemployment.

# **11.10: UNIT SUMMARY**

Money, in its various forms, is fundamental to modern economies. Commodity money, fiat money, and digital crypto-currencies each offer unique benefits and challenges. The durability, portability, and divisibility of money ensure its effectiveness and reliability, while its roles as a medium of exchange, store of value, and unit of account underscore its fundamental economic functions. Understanding these aspects of money is crucial for appreciating its impact on trade, finance, and everyday life. As technology continues to advance, the forms and functions of money may evolve further, but its essential role in facilitating economic activity will remain unchanged

# **11.11: CHECK YOUR PROGRESS**

#### **Multiple-Choice Questions (1 Mark Each)**

- Which of the following is NOT a function of money?
  a) Medium of exchange
  - b) Measure of value
  - c) Standard for deferred payments
  - d) Producing goods and services
- 2. What gives fiat money its value?
  - a) Intrinsic value
  - b) Trust and authority of the issuing government
  - c) Its physical composition
  - d) Limited supply
- Which type of money has intrinsic value?
  a) Fiat money
  - b) Digital money

- c) Commodity money
- d) Crypto-currency
- 4. What problem does money solve in a barter system?
  - a) Currency stability
  - b) Double coincidence of wants
  - c) Commodity value fluctuation
  - d) Inflation
- 5. The M0 money supply includes:
  - a) Demand deposits and savings deposits
  - b) Physical currency and reserves held by banks
  - c) Institutional money market funds
  - d) Treasury bills
- 6. What is a characteristic of crypto-currencies?
  - a) Centralized authority
  - b) Unlimited supply
  - c) Based on blockchain technology
  - d) Government-issued value
- 7. M3 money supply includes:
  - a) Only physical currency
  - b) M2 and institutional money market funds
  - c) Treasury bills and certificates of deposit
  - d) Demand deposits and other deposits
- 8. Which feature makes money durable?
  - a) Ease of carrying
  - b) Ability to withstand wear and tear
  - c) Being backed by gold reserves
  - d) High divisibility
- 9. Inflation typically results from:
  - a) R increase in money supply outpacing economic growth
  - b) R decrease in interest rates
  - c) A surplus of goods and services
  - d) A stable currency
- 10. Which measure of money supply includes saving deposits with post office savings banks?
  - a) M1
  - b) M2
  - c) M3
  - d) M4

# Short Answer Questions (2 Marks Each)

- 1. Explain why money is considered a store of value.
- 2. Differentiate between commodity money and fiat money.
- 3. How does divisibility enhance the utility of money?
- 4. Why is portability a significant characteristic of money?
- 5. Describe the relationship between money supply and inflation.
- 6. What is quantitative easing, and why is it used?

- 7. How do central banks use open market operations to influence the money supply?
- 8. Identify two advantages of fiat money over commodity money.
- 9. Discuss how the introduction of crypto-currencies challenges traditional fiat money.
- 10. Explain the significance of M1 and M2 in measuring money supply.

### **Medium-Length Questions (5 Marks Each)**

- 1. Compare and contrast the gold standard and fiat money systems.
- 2. Discuss the evolution of money from barter systems to modern forms like crypto-currencies.
- 3. Explain how the money supply influences GDP and employment levels.
- 4. Analyze the of central banks in controlling inflation through money supply management.
- 5. Describe the impact of hyperinflation on an economy, with an example.
- 6. How do the components of M1, M2, and M3 reflect varying liquidity in the economy?
- 7. Evaluate the benefits and challenges associated with cryptocurrencies in the global economy.
- 8. Discuss the effects of deflation on economic activities and how central banks respond to it.
- 9. Why is the stability of the issuing authority crucial for fiat money?
- 10. Analyze the significance of money as a unit of account in facilitating economic transactions.

#### Long Answer Questions (10 Marks Each)

- 1. Critically examine the advantages and disadvantages of digital currencies over traditional money.
- 2. Discuss the significance of money supply measurement in economic policy formulation.
- 3. Evaluate the methods used by central banks to manage money supply, with examples from India and the USA.
- 4. Explain the functions of money in an economy, emphasizing its role as a medium of exchange and store of value.
- 5. Analyze the factors influencing money supply and their implications for economic stability.
- 6. Discuss the challenges and opportunities posed by the adoption of crypto-currencies in global finance.
- 7. How does money act as a standard for deferred payments? Provide examples.
- 8. Assess the impact of technological advancements on the evolution of money, from commodity money to crypto-currencies.

- 9. Explain the relationship between money supply, inflation, and interest rates, using real-world examples.
- 10. Discuss the importance of durability, divisibility, and portability as characteristics of money, with examples.

# **11.12: REFERENCE/ FURTHER READING MATERIALS**

1. 'Money, Banking, and Financial Markets' by Stephen G. Cecchetti and Kermit L. Schoenholtz

2. 'The Economics <sup>80</sup>Money, Banking, and Financial Markets' by Frederic S. Mishkin

3. 'Money and Banking' by David H. Friedman

4. 'Modern Money Theory: A Primer on Macroeconomics for Sovereign Monetary Systems' by L. Randall Wray

5. 'Banking Theory and Practice' by K.C. Shekhar and Lekshmy Shekhar

# **UNIT 12 BANKING AND FUNCTIONS**

# Objective

After studying this unit, learners will be able to:

- Understand the fundamental role of banks in the economy and how they act as intermediaries between savers and borrowers
- Apply knowledge of banking services to real-world business scenarios, such as obtaining loans, managing business accounts, and navigating foreign exchange transactions
- Recognize the importance of banks in economic development, including their role in mobilizing savings, promoting trade, and supporting investments
- Evaluate the challenges faced by banks in the modern financial landscape, such as cybersecurity risks and non-performing assets
- Utilize banking concepts to develop strategies for financial management in businesses, ensuring efficient cash flow and investment planning

Structure

12.0: Introduction to Banking

12.1: Types of Bank and Functions

- 12.2: Role of Banking in Economic Development
- 12.3: Modern Innovations in Banking
- 12.4: Challenges and Risks in Banking
- 12.5: Unit Summary
- 12.6: Check Your Progress
- 12.7: Reference/Further Reading Materials

# **12.0 INTRODUCTION TO BANKING**

Banking is a cornerstone of modern economies, providing the financial infrastructure necessary for economic development, trade, and investment. Banks facilitate the flow of money within the economy, ensure efficient allocation of resources, and provide a safe haven for savings. They act as intermediaries between savers and borrowers, playing a critical role in financial stability and economic growth They help in channelling funds from surplus units to deficit units, thereby facilitating investment and consumption. There are various types of banks, each serving different functions and catering to different needs.

# Definition of Banking

Banking can be defined as the business activity of accepting deposits from individuals and entities, providing credit, and offering a range of financial services, including fund transfers, investment services, and wealth management. According to the Banking Regulation Act of 1949 (India), "banking" is defined as "accepting, for the purpose of lending or investment, of deposits of money from the public, repayable on demand or otherwise, and withdrawable by cheque, draft, order, or otherwise.

# **12.1 TYPES OF BANK**

Banks can be classified based on their functions, ownership, and the specific markets they serve. Below are the major types of banks.

# (i) Commercial Bank

Commercial banks are the most common type of bank, providing a wide array of financial services to individuals, small businesses, and large corporations. Their core services can be categorized into three main areas: checking and savings accounts, business loans and credit, and mortgages and personal loans.

# • Checking and Savings Accounts

Checking and savings accounts are fundamental services offered by commercial banks. These accounts provide a secure place for customers to deposit their money. Checking accounts are primarily for day-to-day transactions, allowing customers to write checks, make withdrawals, and use debit cards for purchases. They offer liquidity and easy access to funds.

Savings accounts, on the other hand, are designed for storing money that is not needed for immediate use. These accounts typically offer interest on deposits, thereby encouraging customers to save. The interest rates on savings accounts can vary significantly depending on the bank and the prevailing economic conditions.

#### Business loans and credit

Commercial banks also pray a crucial role in providing financing to businesses. Business loans and credit lines are vital for the growth and development of enterprises, enabling them to invest in new projects, expand operations, purchase equipment, or manage cash flow. There are various types of business loans, including term loans, lines of credit, equipment financing, and commercial real estate loans.

A term loan is a lump sum of money borrowed by a business to be repaid over a fixed period with interest. Lines of credit, on the other hand, provide businesses with flexible access to funds up to a certain limit, which they can draw upon as needed.

#### Mortgages and personal loans

In addition to serving businesses, commercial banks offer mortgages and personal loans to individuals. Mortgages are long-term loans used to purchase real estate, with the property itself serving as collateral. These loans are crucial for homeownership, contributing to personal wealth and economic stability.

Personal loans, on the other hand, can be used for a variety of purposes, including education, medical expenses, and debt consolidation. These loans typically have higher interest rates than mortgages and are repaid over a shorter period. Overall, commercial banks are indispensable to the imancial system, providing essential services that facilitate everyday transactions, business growth, and personal financial management.

# (ii) Central Banks

The central bank is the apex financial institution responsible for regulating the banking and monetary system of a country. It does not deal directly with the public.

Because they are in charge of ensuring the stability and smooth operation of the whole financial system, central banks hold a special place in the banking system. Their primary functions include issuing currency and managing reserves, implementing monetary policy, and supervising financial institutions.

# • Issuing currency and managing reserves

One of the core functions of central banks is the issuance of currency. Central banks have the exclusive authority to print and circulate money within an economy. This function ensures that the supply of money is consistent with the needs of the economy. Apart from overseeing the physical currency, central banks also hold commercial banks' reserves, which are essential for preserving liquidity in the banking system and guaranteeing that banks can fulfill withdrawal requests and carry out interbank transactions. The central bank sets the reserve requirement ratio, which determines the percentage of customer deposits that commercial banks must retain in reserve.

#### • Implementing monetary policy

Implementing monetary policy, which includes controlling the money supply and influencing interest rates to accomplish macroeconomic goals including price stability, full employment, and economic growth, is a crucial function of central banks. They employ a number of instruments, such as reserve requirements, the discount rate, and open market operations, out monetary to carry policy. Government securities are purchased and sold on the open market as part of open market activities. Central banks stimulate the economy by buying assets, which lowers interest rates and promotes borrowing and spending. Selling securities, on the other hand, takes money out of the economy, which raises interest rates and lowers inflation.

The interest rate at which commercial banks are able to borrow money straight from the central bank is known as the discount rate. Reducing the discount rate encourages banks to lend more to households and companies since it makes borrowing less expensive for them. Raising the rate has the opposite effect, discouraging borrowing and cooling down an overheating economy.

#### • Supervising financial institutions

Central banks also have a regulatory and supervisory role, ensuring the stability and soundness of financial institutions within their jurisdiction. They establish and enforce regulations that govern the banking sector, conduct regular inspections, and assess the financial health of banks. This oversight helps prevent financial crises and protects depositors.

The Financial Stability Oversight Council, created by the Dodd-Frank Act in the United States, is an example of a body that coordinates the supervision of large financial institutions to mitigate systemic risks. Central banks also work closely with other regulatory agencies to ensure a comprehensive approach to financial oversight.

#### (iii) Co-operative Bank

Cooperative banks operate on a cooperative model, where members of the bank are both owners and customers. They are primarily aimed at serving rural areas and specific communities.

These banks prioritize supporting local economies and fostering community development. The key features of cooperative banks include a memberowned organization and a strong focus on supporting local economies.

# • Member-owned organization

Like credit unions, cooperative banks are member-owned organizations. This means that the customers of the bank are also its owners, and they have a say in the governance and decision-making processes. Each member typically has one vote, regardless of the amount of money they have deposited, ensuring that the interests of all members are represented.

The cooperative structure promotes transparency, accountability, and a focus on the best interests of the members. Additionally, cooperative banks often reinvest their profits back into the community or distribute them to members in the form of dividends.

#### • Supporting local economies

Cooperative banks have a strong focus on supporting local economies and fostering community development. They often provide financial services to individuals, small businesses, and agricultural enterprises that may be underserved by commercial banks. By offering affordable loans and financial support, cooperative banks help stimulate local economic growth and create job opportunities.

Cooperative banks also engage in community development initiatives, such as funding local infrastructure projects, supporting education and healthcare programs, and promoting social welfare activities. These efforts contribute to the overall well-being and resilience of local communities.

### (iv) Investment Banks and Financial Markets

Investment banks are specialized financial institutions that focus on providing services related to financial markets, including underwriting and advisory services, trading and market-making, and mergers and acquisitions (M&A). These banks pray a crucial role in facilitating capital formation and ensuring the efficient allocation of resources in the economy.

#### Underwriting and advisory services

One of the primary functions of investment banks is underwriting, which involves helping companies raise capital by issuing securities. Investment banks act as intermediaries between the issuing company and investors, ensuring that the securities are priced appropriately and that there is sufficient demand in the market. They may also take on the risk by purchasing the securities themselves and reselling them to investors.

In addition to underwriting, investment banks provide advisory services to clients on a range of financial matters, including mergers and acquisitions, corporate restructuring, and strategic planning. These services are invaluable for companies seeking to navigate complex financial markets and make informed decisions.

#### • Trading and market-making

Investment banks are also heavily involved in trading and marketmaking activities. They trade a variety of financial instruments, including stocks, bonds, derivatives, and currencies, on behalf of their clients and for their own accounts. Through their trading activities, investment banks contribute to market liquidity, ensuring that buyers and sellers can transact efficiently.

Market-making is a specific trading activity where investment banks provide buy and sell quotes for securities, facilitating transactions and maintaining orderly markets. By offering two-sided quotes, market-makers help narrow the bid-ask spread and reduce transaction costs for investors.

#### • Mergers and acquisitions (M&A)

Mergers and acquisitions (M&A) are another critical area of focus for investment banks. They provide advisory and execution services for companies looking to merge with or acquire other businesses. M&A transactions can be complex, involving legal, financial, and regulatory considerations. Investment banks help clients navigate these complexities, ensuring that the transactions are structured effectively and that the strategic objectives are met.

Investment banks play a crucial role in facilitating these deals, providing expertise and ensuring that the terms are favourable for their clients.

Investment banks are essential to the functioning of financial markets, providing critical services that facilitate capital formation, market liquidity, and strategic corporate transactions.

#### (v) Development Bank

Development banks are specialized financial institutions that provide longterm capital for economic development projects and facilitate the growth of sectors that are critical for economic progress. Unlike commercial banks, which primarily serve private clients and focus on profitability, development banks have a broader mandate that includes promoting public welfare and socio-economic development. Their primary purpose is to bridge gaps in credit availability, particularly in areas where private sector financial institutions may be reluctant to venture due to high risk, long gestation periods, or lower profitability. By channelling funds into critical infrastructure projects, supporting key industries, and offering technical assistance, development banks play a pivotal role in fostering holistic economic growth including financial support and funding, technical support and advisory roles and felicitation of international trade.

# Financial Support and Funding

One of the core functions of development banks is providing financial support through various funding mechanisms. This includes long-term loans, guarantees, equity investments, and grants. By offering these financial products, development banks enable the execution of largescale infrastructure projects, support the growth of SMEs, and promote investments in innovation and technology. The financial support from development banks often comes with favourable terms, such as lower interest rates and longer repayment periods, making it accessible to entities that may struggle to secure funding from private sector banks. Additionally, development banks often mobilize capital from multiple sources, including international donors, governments, and private investors, thereby leveraging their resources to maximize impact.

#### • Technical Assistance and Advisory Roles

Beyond financial support, development banks offer invaluable technical assistance and advisory services. These can include project planning and management, feasibility studies, capacity building, and policy advice. By providing expert guidance, development banks help ensure that funded projects are well-designed and effectively implemented, thus increasing their chances of success. Furthermore, development banks often work closely with governments to formulate and implement development strategies and policies. This collaborative approach helps align projects with national development goals and enhances their overall impact on economic growth.

#### • Facilitation of International Trade

Development banks play a key role in facilitating international trade, particularly for developing countries. By providing trade financing, guarantees, and support for trade infrastructure, these banks help countries integrate into the global economy. For example, development banks may finance the construction of ports, airports, and logistical hubs, which are crucial for efficient trade operations. Additionally, they may offer trade insurance and guarantees that reduce the risks associated with international transactions, thereby encouraging cross-border trade and investment. By promoting international trade, development banks help countries diversify their economies, access broader markets, and stimulate economic growth.

# (vi) Credit Unions

Ledit unions are member-owned financial cooperatives that provide a range of financial services to their members. They differ from commercial banks in that their primary focus is on serving their members rather than maximizing profit. Credit unions offer several benefits, including a memberbased structure, lower fees, and better interest rates.

#### • Member-based structure

The member-based structure of credit unions is one of their defining features. Members, who are also their customers, own credit unions, in contrast to commercial banks, which are owned by shareholders. All members, regardless of the amount they have deposited, have an equal voice in the management of the credit union. This democratic structure ensures that the credit union's operations and decision-making processes are aligned with the best interests of its members.

Membership in a credit union is typically based on a common bond, such as belonging to a particular community, occupation, or organization.

# • Lower fees and better interest rates

One of the primary advantages of credit unions is that they tend to offer lower fees and better interest rates compared to commercial banks. Since credit unions are not-for-profit organizations, they do not have the same profit-maximizing incentives as commercial banks. Instead, any surplus earnings are returned to members in the form of lower loan rates, higher savings rates, and reduced fees.

# (vii) Online Banks

By utilizing technology to offer a variety of financial services, online banks—also referred to as digital banks—have become a contemporary substitute for traditional banks. Lower administrative expenses and digital banking services are two of online banks' main benefits.

#### • Digital banking services

Online banks offer a wide array of digital banking services that cater to the needs of tech-savvy customers. These services include mobile banking apps, online account management, digital wallets, and real-time payment processing. The convenience and accessibility of digital banking services have made them increasingly popular among consumers.

Mobile banking apps, for example, allow customers to perform a variety of transactions from their smartphones, including checking account balances, transferring funds, paying bills, and depositing checks using the camera on their phone.

Online banks also integrate with other financial technologies, such as personal finance management tools, robo-advisors, and peer-to-peer payment platforms. This integration enables customers to manage their finances more effectively and access a broader range of services from a single platform.

# Lower overhead costs

the of the significant advantages of online banks is their lower overhead costs compared to traditional brick-and-mortar banks. Online banks do not maintain physical branches, which reduces expenses related to rent, utilities, and branch staff. These cost savings are often passed on to customers in the form of higher interest rates on deposits, lower loan rates, and reduced fees.

Lower overhead costs also allow online banks to offer competitive pricing on other services, such as checking accounts, credit cards, and personal loans. Many online banks offer fee-free checking accounts with
no minimum balance requirements and no monthly maintenance fees, making them an attractive option for cost-conscious consumers.

# **12.2 ROLE OF BANKING IN ECONOMIC DEVELOPMENT**

The banking sector plays a pivotal role in the economic development of any country. Banks are not just intermediaries of financial transactions but also act as the backbone of economic policy implementation and stabilization. Their multifaceted functions, ranging from capital mobilization to providing credit, risk management, and technological advancements, significantly contribute to economic growth and stability. Understanding these roles can help policymakers, businesses, and individuals leverage banking systems to foster a more robust economic environment.

#### (i) The Function of Banks in Capital Mobilization

#### • Aggregating savings from individuals

Banks serve as essential aggregators of savings from individuals and households, channelling these funds into productive investments. This function involves collecting small and large amounts of money from different depositors and pooling them together to create a substantial capital base. The aggregated savings are then utilized for investment in various sectors of the economy, including infrastructure, manufacturing, healthcare, and technology.

By offering various savings accounts and deposit options, banks incentivize individuals to save their money rather than spend it unproductively. For instance, the availability of interest rates, however modest, encourages people to deposit their money in banks rather than hoard it as cash. This not only safeguards the money but also makes it available for the banks to lend out. According to data from the World Bank, countries with high savings rates tend to have more robust economic growth, as these savings are converted into investments that spur development.

#### Allocating funds to productive investments

One of the core functions of banks is to ensure that the mobilized capital is allocated efficiently to the most productive investments. Banks play a significant role in identifying viable business opportunities and funding them, thereby facilitating economic growth. This process involves a thorough assessment of the risk and return potential of various investment projects.

By issuing loans to businesses, banks help in the establishment and expansion of companies, which in turn creates employment opportunities and increases the production of goods and services

#### Providing liquidity in the economy

A significant function of banks is providing liquidity to the economy. Liquidity refers to the ease with which assets can be converted into cash. Banks offer different kinds of deposits and credit facilities that ensure sufficient liquidity in the market. For instance, through checking accounts, savings accounts, and overdraft protection, banks provide immediate liquidity to both individuals and businesses.

In addition to this, banks play a vital role in the interbank lending market, where banks lend to each other to meet short-term liquidity needs. This helps maintain financial stability and ensures that the payment systems run smoothly. Central banks also provide liquidity to commercial banks through monetary policy instruments like the discount rate and open market operations. By doing so, they ensure that banks can meet their liquidity requirements, which is crucial for the smooth functioning of the financial system and the broader economy.

### (ii) Facilitating Payments and Settlements

#### • Ensuring secure transactions

Banks are fundamental in ensuring the security of financial transactions. The trust placed in banks by both consumers and businesses is predicated on the robust security measures they have in place to protect financial data and prevent fraud. Using advanced encryption techniques, secure authentication methods, and rigorous compliance with regulatory standards, banks create a secure environment for transactions.

For instance, the use of Secure Sockets Layer (SSL) encryption in online banking ensures that sensitive information, such as credit card numbers and personal identification numbers (PINs), is transmitted securely over the internet. The adoption of anti-money laundering (AML) and know-yourcustomer (KYC) regulations has significantly reduced the incidence of financial fraud and enhanced the security of financial transactions.

#### Streamlining payment processes

Banks also streamline payment processes, making transactions faster and more efficient. By providing infrastructure such as Automated Clearing Houses (ACH), Real-Time Gross Settlement Systems (RTGS), and electronic funds transfer (EFT) systems, banks facilitate the smooth transfer of money between parties. These systems reduce the time it takes for transactions to be completed, enhancing the overall efficiency of the economy.

#### • Enhancing economic efficiency

By providing a reliable and efficient payment system, banks enhance the overall economic efficiency. An efficient payment system reduces the cost and time associated with financial transactions, allowing for quicker turnover of goods and services. This increased efficiency can lead to higher productivity and economic growth.

For example, the implementation of digital wallets and mobile banking apps has revolutionized the way payments are made, especially in developing economies.

#### (iii) Credit Provision and Economic Expansion

#### • Offering loans to businesses and consumers

One of the critical roles of banks in economic growth is the provision of credit to both businesses and consumers. By offering various types of loans, banks enable these entities to invest in opportunities that they might not otherwise afford. For businesses, this can mean access to capital for expansion, research, and development, or even day-to-day operations. For consumers, it allows for the purchase of significant assets like homes and cars, which can improve their quality of life.

According to a report by the European Central Bank (ECB), the availability of credit is strongly correlated with economic growth. The report highlights how bank loans have supported the establishment and expansion of businesses across the European Union, contributing significantly to job creation and economic stability. Similarly, consumer loans have enabled more individuals to access home ownership and higher education, which have long-term positive effects on economic stability and growth.

#### • Supporting entrepreneurship and innovation

Banks play a crucial role in supporting entrepreneurship and innovation, which are vital for economic expansion. By providing startup capital and growth financing, banks facilitate the development of new businesses and innovations. For example, venture capital provided by banks can support tech startups developing cutting-edge technologies that drive economic growth.

# • Stimulating consumption and production

The credit provided by banks also stimulates consumption and production. When consumers have access to credit, they are more likely to spend on goods and services, boosting demand. This, in turn, encourages businesses to ramp up production to meet the increased demand. This cycle of increased consumption and production leads to economic growth.

A report by the International Monetary Fund (IMF) indicates that consumer credit has a multiplier effect on the economy. For instance, when banks issue mortgages, the construction industry benefits from mereased demand for housing, leading to job creation and higher economic output. Similarly, car loans stimulate the automotive industry, contributing to industrial growth and economic expansion.

#### **12.3 MODERN INNOVATIONS IN BANKING**

#### • Promoting financial inclusion

Digital banking services, like mobile banking apps and online banking platforms, have made it easier for people in remote and underserved areas to access financial services, and technological advancements in banking have played a significant role in promoting financial inclusion. By leveraging digital platforms, banks can reach previously unbanked and underbanked populations, giving them access to financial services like savings accounts, credit, and insurance.

According to a report by the World Bank, digital financial services have significantly increased financial inclusion globally. The report highlights that mobile banking has enabled millions of people in developing countries to access financial services, thereby improving their economic well-being and contributing to economic growth. For example, the widespread adoption of mobile payment platforms like M-Pesa in Kenya has transformed the financial landscape, providing financial access to millions of previously unbanked individuals.

#### Enhancing digital banking services

Technological advancements have also enhanced digital banking services, making financial transactions faster, more convenient, and more secure. Banks have invested in technologies such as artificial intelligence (AI), blockchain, and biometrics to improve their services and provide a seamless banking experience to customers. For example, AI-powered chatbots and virtual assistants help customers manage their accounts, make transactions, and access financial advice quickly and efficiently.

Because blockchain technology offers a safe and transparent platform for financial transactions, it has also completely transformed the banking industry. Blockchain technology can lower transaction costs, increase the efficiency and security of financial transactions, and improve the general customer experience, according to a World Economic Forum report. By implementing these technologies, banks can give better services to their consumers, hence fostering economic growth.

#### Improving transaction speed and accuracy

Financial transactions are now much faster and more accurate thanks to technological improvements. By automating processes and leveraging real-time data, banks can process transactions faster and with greater accuracy. For example, the implementation of real-time payment systems, such as the Immediate Payment Service (IMPS) in India, has reduced the time it takes for transactions to be completed, enhancing the efficiency of the financial system.

A study by the Massachusetts Institute of Technology (MIT) found that the adoption of real-time payment systems has a positive impact on economic growth by improving the efficiency of financial transactions and reducing the costs associated with delays and errors. By improving transaction speed and accuracy, technological advancements in banking contribute to economic efficiency and growth.

# **12.4 CHALLENGES AND RISKS IN BANKING**

Despite being essential to economic expansion, the banking sector is inherently risky and difficult. These risks may originate from a number of factors, including as shifts in the economy, improvements in technology, modifications to regulations, and inefficiencies in operations. Let's examine the main difficulties and dangers that banks confront in more detail:

# Credit Risk:

- This arises from the possibility that borrowers may default on their loan obligations.
- Factors such as economic downturns, job losses, or changes in interest rates can increase the likelihood of default.
- To mitigate this risk, banks employ rigorous credit scoring models, conduct thorough due diligence, and diversify their loan portfolios.

# Market Risk:

- This risk stems from adverse movements in market prices, such as interest rates, exchange rates, or commodity prices.
- Fluctuations in these factors can impact the value of a bank's investments and trading positions.
- To manage market risk, banks use hedging strategies, risk modeling, and diversification techniques.

# **Operational Risk:**

- This risk arises from failures in internal processes, systems, or people.
- Examples include errors in processing transactions, cyberattacks, and human error.
- To mitigate operational risk, banks implement robust internal controls, invest in technology, and train their employees.

# Liquidity Risk:

- This risk occurs when a bank is unable to meet its short-term obligations, such as withdrawals or loan repayments.
- It can arise from sudden withdrawals, market shocks, or inadequate liquidity management.
- To manage liquidity risk, banks maintain sufficient cash reserves, diversify funding sources, and have access to emergency liquidity facilities.

# **Regulatory Risk:**

- Changes in regulations can impact a bank's operations, profitability, and capital requirements.
- Stricter regulations can increase compliance costs and limit business opportunities.

• To manage regulatory risk, banks must stay updated on regulatory changes, invest in compliance technology, and maintain strong relationships with regulators.

#### **Cybersecurity Risk:**

- With the increasing reliance on technology, banks are vulnerable to cyberattacks, data breaches, and fraud.
- These incidents can result in financial losses, reputational damage, and legal liabilities.
- To mitigate cybersecurity risk, banks invest in robust security measures, employee training, and incident response plans.

# **Economic Risk:**

- Economic downturns, recessions, and inflation can adversely impact a bank's performance.
- Economic instability can lead to increased loan defaults, lower asset values, and reduced profitability.
- To manage economic risk, banks diversify their loan portfolios, monitor economic indicators, and implement stress testing.

#### **Reputational Risk:**

- Negative publicity, scandals, or unethical behavior can damage a bank's reputation and erode customer trust.
- Reputational damage can lead to customer attrition, reduced business opportunities, and increased regulatory scrutiny.
- To manage reputational risk, banks must maintain high ethical standards, transparent communication, and effective crisis management.

#### **12.5 UNIT SUMMARY**

Banks are integral to the functioning of modern economies, acting as intermediaries that ensure the smooth operation of financial systems. Their ability to adapt to technological advancements, regulatory changes, and customer expectations determines their relevance and sustainability. As globalization and digitalization reshape the banking landscape, banks must innovate and prioritize financial inclusion to continue driving economic growth and development.

#### **12.6 CHECK YOUR PROGRESS**

#### **Multiple-Choice Questions (1 Mark Each)**

# 1. What is the primary role of a central bank?

- a) Providing personal loans
- b) Issuing currency and managing reserves
- c) Offering investment services
- d) Facilitating retail payments

#### 2. Which type of bank operates on a cooperative model?

- a) Commercial Bank
- b) Central Bank
- c) Cooperative Bank
- d) Investment Bank

#### 3. What is the focus of credit unions?

- a) Maximizing profits
- b) Serving their members
- c) Offering venture capital
- d) Investing in large corporations

# 4. What does "liquidity" in the banking context refer to?

- a) Bank profitability
- b) Ease of converting assets to cash
- c) Market share of a bank
- d) Technological advancement

# 5. Which bank primarily facilitates mergers and acquisitions?

a) Central Bank

- b) Cooperative Bank
- c) Investment Bank
- d) Development Bank

#### 6. Which law defines banking in India?

- a) Companies Act, 2013
- b) Reserve Bank of India Act, 1934
- c) Banking Regulation Act, 1949
- d) Financial Services Act, 2015

# 7. Which technological advancement has significantly improved transaction speed in banking?

a) Blockchain

- b) Real-Time Gross Settlement Systems
- c) Artificial Intelligence
- d) Mobile banking apps

# 8. What does the term "credit risk" refer to?

- a) Failure in internal systems
- b) Borrowers defaulting on loans

- c) Economic downturns
- d) Cybersecurity threats

#### 9. What is the main purpose of development banks?

- a) Profitability
- b) Socio-economic development
- c) Venture capital
- d) Serving urban areas

#### 10. What does financial inclusion aim to achieve?

- a) Imprease in market competition
- b) Access to financial services for underserved populations
- c) Higher interest rates
- d) Centralization of banking operations

#### Short Answer Questions (2 Marks Each)

- 1. Define "banking" as per the Banking Regulation Act, 1949.
- 2. Explain the primary functions of a central bank.
- 3. Differentiate between commercial banks and cooperative banks.
- 4. State the benefits of online banking.
- 5. What role do banks play in capital mobilization?
- 6. Explain the concept of liquidity risk in banking.
- 7. Mention two key challenges faced by the banking sector.
- 8. What are credit unions, and how do they differ from commercial banks?
- 9. Describe the significance of financial inclusion in economic development.
- 10. Outline the advantages of adopting blockchain technology in banking.

#### **Medium-Length Questions (5 Marks Each)**

- 1. Elaborate on the role of commercial banks in economic growth.
- 2. Discuss the contribution of cooperative banks in rural development.
- 3. How do investment banks facilitate capital formation and economic growth?
- 4. Explain the role of banks in providing liquidity to the economy.
- 5. Describe the importance of technological advancements in modern banking.
- 6. Analyze the challenges of credit risk and how banks manage it.
- 7. What is the role of development banks in fostering economic progress?
- 8. Explain the significance of secure payment systems in the banking industry.
- 9. Discuss the role of banks in supporting entrepreneurship and innovation.

10. Highlight the impact of digital banking services on financial inclusion.

### Long Answer Questions (10 Marks Each)

- 1. Compare and contrast the various types of banks discussed in the context.
- 2. Analyze the multifaceted role of banks in economic stabilization and policy implementation.
- 3. Discuss how banks ensure capital mobilization and allocation for productive investments.
- 4. Elaborate on the risks faced by banks and the strategies they use to mitigate them.
- 5. Evaluate the contribution of technological innovations in transforming the banking sector.
- 6. Analyze the importance of development banks in bridging credit gaps in critical sectors.
- 7. How does the banking sector facilitate payments and settlements to enhance economic efficiency?
- 8. Discuss the interplay between banking regulations and the stability of the financial system.
- 9. Evaluate the role of credit provision in stimulating economic growth and consumption.
- 10. Provide a comprehensive overview of the impact of online banks on traditional banking practices.

# **12.7 REFERENCE/FURTHER READING MATERIALS**

1. 'Money, Banking, and Financial Markets' by Stephen G. Cecchetti and Kermit L. Schoenholtz

2. 'The Economics of Money, Banking, and Financial Markets' by Frederic S. Mishkin

3. 'Money and Banking' by David H. Friedman

4. 'Modern Money Theory: A Primer on Macroeconomics for Sovereign Monetary Systems' by L. Randall Wray

5. 'Banking Theory and Practice' by K.C. Shekhar and Lekshmy Shekhar

# **UNIT 13 INTERNATIONAL TRADE AND POLICIES**

#### Objective

After studying this unit, learners will be able to:

- Apply knowledge of trade theories to managerial decisions, such as sourcing raw materials, entering foreign markets, and managing supply chains.
- Assess the implications of international trade policies on business strategy, including pricing, market entry, and risk management.
- Develop an understanding of trade disputes and resolution mechanisms, enabling students to navigate complex international trade environments.
- Explore real-world case studies of successful and unsuccessful trade practices to identify best practices and lessons learned.

#### Structure

13.0: Introduction

- 13.1: Components of International Trade
- 13.2: Balance of Payment
- 13.3: Trade Policies and Practices
- 13.4 Exchange Rate and Trade
- 13.5: International Trade Organisation
- 13.6: Challenges in International Trade
- 13.7: Globalisation and its impact on Trade Policies.
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#### **13.0 INTRODUCTION**

International trade refers to the exchange of goods, services, and capital across international borders or territories. It allows countries to access products and services that are not available domestically or are available at a

lower cost or higher quality from other nations. The key characteristics of International trade involves multiple currencies, making exchange rates crucial, international trade agreements and regulations and includes visible trade (goods) and invisible trade (services).

### The international trade occurs due to following reasons:

**Comparative Advantage:** Countries specialize in producing goods and services they can produce most efficiently. This allows them to allocate resources effectively and produce more than they could if they were self-sufficient.

**Consumer Demand:** Consumers often desire a variety of goods and services, including those produced in other countries. International trade allows consumers to access a wider range of products at competitive prices.

**Economic Growth:** International trade can stimulate economic growth by creating jobs, increasing productivity, and attracting foreign investment.

# 13.0.1 Importance of Trade in the Global Economy

International trade is a cornerstone of economic development and globalization. Below are key reasons why trade is vital for the global economy:

#### a. Economic Growth:

Trade allows countries to expand their markets beyond domestic boundaries, leading to higher production and income levels. Exporting helps businesses grow, creating more jobs and wealth.

**Example**: China's export-led growth has been a significant factor in its rapid economic development over the past few decades.

#### b. Access to Resources and Goods:

Countries can import goods and resources they lack or cannot produce efficiently. This improves the standard of living by providing access to a variety of products.

**Example**: Japan, with limited natural resources, imports raw materials like oil and coal for its industrial needs.

#### c. Technological Advancement:

Exposure to international markets promotes the adoption of advanced technologies and better business practices, fostering innovation and efficiency.

**Example**: Global competition in the electronics sector has pushed companies like Apple and Samsung to continuously innovate.

#### d. Reduction in Costs:

Trade encourages specialization, allowing countries to focus on industries where they have a comparative advantage, reducing costs of production.

**Example**: India's comparative advantage in IT services makes its software exports cost-effective.

#### e. Strengthening International Relations:

Trade fosters economic interdependence, which can lead to better diplomatic and political relations between nations.

**Example**: The European Union's single market promotes peace and cooperation among member countries.

#### f. Reduction of Poverty:

Trade provides developing countries with access to global markets, helping to reduce poverty by creating jobs and driving economic growth.

**Example**: Countries like Vietnam have used export-oriented policies to transition from low-income to middle-income status.

#### g. Global Economic Stability:

By diversifying markets and supply chains, trade reduces **economic shocks** that might arise from over-reliance on domestic markets.

**Example**: Diversified export markets helped South Korea recover quickly from the 2008 global financial crisis.

13.0.2 Distinction between Domestic and International trade

While domestic and international trade share the fundamental concept of exchanging goods and services, they differ in several aspects

Aspect	Domestic Trade	International Trade
Geographical Scope	Within a single country	Across national borders
Currency	Involves a single currency	Involves multiple currencies, requiring exchange rates
Regulations	Governed by local laws and policies	Governed by international agreements and treaties
Transportation Costs	Generally lower due to shorter distances	Higher due to longer distances and international logistics
Market Access	Limited to the domestic population	Access to global markets and a larger customer base
Cultural Factors	Limited cultural and language barriers	Significant cultural and language differences
Risks	Fewer risks, as political and economic environments are stable	Higher risks, including political instability and trade barriers

Table 13.1: Difference between domestic trade and international trade

#### **13.1 COMPONENTS OF INTERNATIONAL TRADE**

International trade, a cornerstone of the global economy, involves the exchange of goods, services, capital, technology, and intellectual property across borders. The following are the primary components of international trade:

#### (i) Goods and Services

The trade of goods and services forms the core of international trade. Goods typically encompass tangible products such as machinery, electronics, agricultural products, and textiles. Services, on the other hand, include intangible offerings such as financial services, tourism, education, and software development. For instance, the export of technology products by the United States and the import of manufactured goods from China are quintessential examples of how goods flow across borders. Meanwhile, service exports by countries like India, with its burgeoning IT sector, highlight the significance of services in trade.

#### (ii) Trade Policies and Agreement

Trade policies and agreements significantly impact the flow of trade between nations. These policies can either promote or restrict trade depending on the economic objectives and political climate of the countries involved. Free trade agreements (FTAs) like the North American Free Trade Agreement (NAFTA) aim to reduce or eliminate trade barriers, fostering increased trade between member countries. Conversely, protectionist policies may involve tariffs and quotas to protect domestic industries, which can lead to trade disputes and retaliation. The imposition of tariffs on Chinese imports by the United States in recent years illustrates how trade policies can influence international trade relations

# (iii) Global Supply Chain

Global supply chains exemplify the interconnected nature of modern trade. These supply chains involve the production and distribution processes spread across multiple countries. A product may be designed in the United States, manufactured in China, and assembled in Mexico before reaching the final consumer. This intricate web of production and distribution not only lowers costs through comparative advantage but also enhances efficiency. However, disruptions in global supply chains, such as those caused by the COVID-19 pandemic, can lead to significant economic repercussions, underscoring the importance of resilient and adaptive supply chain management.

(iv) Tariffs and Quotas:

Tariffs and quotas are two of the most common trade barriers imposed by governments. Tariffs are taxes levied on imported goods, making them more expensive and less competitive compared to domestically produced products. For instance, a country imposed tariffs on goods and services to protect its domestic industries.

Quotas, on the other hand, set a physical limit on the quantity of goods that can be imported or exported during a given period. By restricting the amount of certain products that can enter a country, quotas aim to protect local industries from foreign competition.

(v) Trade Blocs and Free Trade Area

Trade blocs and free trade areas are designed to facilitate trade by reducing or eliminating trade barriers among member countries. The European Union

(EU) is a prime example of a trade bloc that has significantly eased trade restrictions among its member states, promoting economic integration and cooperation.

Similarly, free trade areas such as the ASEAN Free Trade Area (AFTA) aim to enhance trade relations by minimizing tariffs and fostering a more conducive trade environment. These arrangements not only simplify trade procedures but also attract foreign investment and stimulate economic growth within the region.

#### (vi) Non-Tariff Barriers

Non-tariff barriers encompass regulatory measures and restrictions other than tariffs that can impede trade. These barriers include import licensing, standards and regulations, customs procedures, and government subsidies. For example, stringent safety standards and certification requirements can serve as non-tariff barriers, making it challenging for foreign producers to enter certain markets. These barriers, while often justified for protecting public health and safety, can sometimes be used strategically to shield domestic industries from foreign competition. The complex nature of nontariff barriers requires on-going negotiations and cooperation between countries to ensure fair trade practices.

#### **13.2 BALANCE OF PAYMENT**

A record of all economic exchanges between a nation and the rest of the world for a given time frame, usually a year, is called the Balance of Payments (BOP). It offers a thorough assessment of a country's financial situation and place in the world economy.

#### **13.2.1** Components of Balance of Payment

The BOP is traditionally divided into three main accounts:

#### (i) Current Account

The Current Account keeps track of revenue, transfers, and transactions pertaining to the exchange of commodities and services. It gives a quick overview of a nation's economic activity and capacity to manufacture and market goods and services abroad.

#### **Components of the Current Account:**

(a) Balance of Trade:

- Trade Balance: This measures the difference between a country's exports and imports of goods.
- Balance of Services: This measures the difference between a country's exports and imports of services, such as tourism, transportation, and financial services.

(b) Net Income: This includes income earned from foreign investments, such as dividends and interest, and income paid to foreign investors.

(c) Net Current Transfers: This includes one-way transfers of funds, such as foreign aid, remittances, and gifts.

(ii) Capital Account: The Capital Account shows a nation's net lending or borrowing position with the rest of the world and documents transactions involving the purchase and sale of assets, including stocks, bonds, and real estate.

#### **Components of the Capital Account:**

(a) Capital Transfers: This includes transfers of capital assets, such as land and patents.

- (b) Acquisition/Disposal of Non-Produced, Non-Financial Assets:
  - Transactions related to intangible assets. E.g., patents, trademarks, natural resource rights.
- (iii) Financial Account:

The financial account tracks cross-border investments and financial flows, reflecting how a country finances its current account deficit or uses its surplus.

#### **Components of Financial Account:**

(a) Direct Investment: This involves long-term investment in businesses and real estate.

(b) Portfolio Investment: This includes short-term investments in stocks, bonds, and other securities.

(c) Other Investment: This covers a variety of financial transactions, such as loans and deposits.

(d) Reserve Assets: This includes foreign exchange reserves held by a country's central bank.

#### 13.2.2 Causes and Consequences of BOP surplus or deficit

A country's BOP can either be in surplus or deficit, depending on whether it receives more in international payments than it pays out. A current account surplus occurs when a country exports more goods and services than it imports, resulting in a positive net export figure. Conversely, a current account deficit means that a country is importing more than it is exporting. The United States, for example, has experienced persistent current account deficits due to its high level of imports. While surpluses can reflect economic strength, persistent deficits can lead to concerns about a country's financial stability and dependence on foreign capital.

# **Causes of Balance of Payment Surplus**

- Increased Exports: A spike in exports brought on by improved quality, reduced costs, or rising demand worldwide.
- Decreased Imports: A decrease in imports brought on by import prohibitions, increased import taxes, or a move toward homegrown manufacturing.
- Increased Foreign Investment: A BOP surplus may result from a sizable influx of foreign direct investment (FDI).
- Remittances: Foreign exchange reserves can be strengthened by an increase in remittances from employees abroad.

#### **Consequences of Balance of Payment Surplus**

- Currency Appreciation: If there is an excess, the value of the home currency may rise, increasing the cost of imports and decreasing the cost of exports.
- Inflationary Pressure: When foreign exchange inflows increase the money supply, inflationary pressures may result.
- Enhanced Foreign Reserves: A surplus can result in the growth of foreign exchange reserves, which will improve the financial stability of a nation.
- Economic Growth: By boosting investment and consumption, a surplus can promote economic growth.

#### **Causes of Balance of Payment Deficit**

- Increased Imports: An increase in imports brought on by a drop in domestic production, decreased import tariffs, or more consumer demand.
- Decreased Exports: A drop in exports brought on by elements such as heightened competition, higher export duties, or a reduction in worldwide demand.
- Capital flight is the term used to describe a large outflow of capital, such as when local citizens relocate their assets outside or international investors withdraw their investments.
- Increased Debt: Taking out loans to cover the deficit from other nations or international financial organizations.

#### **Consequences of Balance of Payment Deficit**

- Currency Depreciation: When there is a deficit, the value of the home currency declines, which raises the cost of imports and lowers the price of exports
- Economic Slowdown: Because it depletes foreign exchange reserves and discourages investment, a sustained deficit can cause the economy to grow more slowly.
- Increased Debt: A nation may have to take out loans from overseas lenders in order to cover the deficit, which would increase its debt load.
- Inflationary Pressure: A currency's depreciation may raise import costs, which would raise inflation.
- Decreased Investor trust: Capital flight and a decline in foreign investment can result from a sustained deficit that undermines investor trust in the economy

# **13.3 TRADE POLICIES AND PRACTICES**

The economic strategy of permitting cross-border trade without tariffs, quotas, or other limitations is known as free trade. It is the foundation of globalization, allowing nations to trade for other commodities and services and specialize in producing the goods and services they can produce most effectively.

# 13.3.1 Benefits of Free Trade

#### (i) Economic Growth:

- Promotes efficient resource allocation based on comparative advantage.
- Boosts GDP by enabling access to larger markets.

Example: The North American Free Trade Agreement (NAFTA) enhanced trade flows among the U.S., Canada, and Mexico.

#### (ii) Consumer Benefits:

- Lowers prices and increases the variety of goods and services available.
- Example: Affordable electronics and clothing imports from countries like China and Vietnam.

## (iii) Increased Competition:

- Encourages innovation and productivity among domestic firms.
- Example: European car manufacturers improving efficiency to compete with Japanese and Korean imports.

#### (iv) Global Interdependence:

• Reduces the likelihood of conflicts by fostering economic ties among nations.

#### (v) Job Creation in Export Industries:

• Sectors with a competitive advantage experience job growth, such as technology and manufacturing in export-oriented economies.

# **Limitations of Free Trade:**

# (i) Job Loss in Vulnerable Sectors:

- Domestic industries that cannot compete with cheaper imports may decline, leading to job losses.
- Example: The U.S. steel and textile industries faced challenges due to imports from lower-cost countries.

# (ii) Exploitation of Labor and Environment:

- Some countries may weaken labor and environmental standards to attract trade and investment.
- Example: Deforestation and poor working conditions in developing countries.

#### (iii) Trade Imbalances:

- Free trade can exacerbate trade deficits in countries that import more than they export.
- Example: The U.S. trade deficit with China.

#### (iv) Dependency on Foreign Markets:

• Overreliance on exports can make economies vulnerable to external shocks, such as a global recession.

# (v) Loss of Sovereignty:

- Multilateral trade agreements may limit a country's ability to enact policies in its national interest.
- Example: Disputes over World Trade Organization (WTO) rulings.

#### 13.3.2 Trade Agreement

A trade agreement is a formal arrangement between two or more countries or trading blocs to facilitate trade between them. These agreements often involve reducing or eliminating tariffs, quotas, and other trade barriers.

Types of Trade Agreement

(i) Bilateral Trade:

The exchange of products and services between two nations is referred to as bilateral trade. A broad variety of things, from high-tech manufactured goods to agricultural commodities, may be involved in this direct economic interaction.

Important aspects of Bilateral Trade

- Direct partnership: In a direct economic partnership, two nations negotiate terms and conditions tailored to their own need
- Mutual Gains: Both nations hope to gain from the trade, usually in the form of improved access to markets, economic expansion, and the creation of jobs.
- Customized Agreements: Bilateral trade agreements are made to take into account the unique economic advantages and disadvantages of the two parties.

• Flexibility: Compared to multilateral agreements, bilateral agreements may be easier to modify and adjust to shifting economic conditions.

Advantages of trade between two countries

Market Access: Through the opening of new markets, bilateral agreements can enable domestic companies to export their goods and services to a larger consumer base

Economic Growth: By increasing exports, generating employment, and drawing in foreign investment, more commerce can promote economic growth.

Decreased Trade Barriers: In order to facilitate trade between companies, bilateral agreements sometimes include the reduction or removal of tariffs, quotas, and other trade barriers.

Increased collaboration: Closer political and economic links between nations can result from bilateral commerce, which can also increase collaboration on other matters.

Specialized Production: To boost productivity and efficiency, nations might focus on producing commodities and services in which they have a competitive advantage

Challenges for Bilateral trade

Potential Bias: Bilateral trade challenges include the possibility of bias, which could hurt the interests of smaller, less developed nations by favoring larger, more powerful nations in bilateral accords.

Complex Negotiations: It can take a lot of diplomatic work and be timeconsuming to negotiate and implement bilateral agreements.

Trade Diversion: Trade may be diverted from more efficient suppliers to less efficient local or international providers as a result of bilateral agreements

Risk of Protectionism: In certain cases, bilateral agreements are utilized to shield home businesses from overseas competition, which raises consumer costs

(ii) Regional Trade Agreement

An official agreement to lower or do away with tariffs, quotas, and other trade restrictions between two or more nations in a particular geographic

area is known as a regional trade agreement (RTA). RTAs seek to encourage member nations' economic cooperation and integration.

# Types of RTAs:

(i) Free Trade Areas (FTAs):

- Member countries eliminate tariffs and quotas on goods traded among themselves.
- Each country maintains its own external tariffs and trade policies.
- Example: North American Free Trade Agreement (NAFTA)

(ii) Customs Unions:

- Member countries eliminate tariffs and quotas on goods traded among themselves.
- They adopt a common external tariff on goods imported from non-member countries.
- Example: European Union (EU)
- (iii) Common Markets:
  - Member countries eliminate tariffs and quotas on goods and services traded among themselves.
  - They adopt a common external tariff.
  - They allow the free movement of labor and capital within the region.
  - Example: The Southern African Development Community (SADC)

(iii) Economic Unions:

- Member countries eliminate tariffs and quotas on goods and services traded among themselves.
- They adopt a common external tariff.
- They allow the free movement of labor and capital within the region.
- They coordinate economic policies, including monetary and fiscal policies.
- Example: The European Union (EU)

# Benefits of RTAs:

- Economic Growth: RTAs can stimulate economic growth by increasing trade, investment, and productivity.
- Job Creation: Increased trade can lead to job creation in exportoriented industries.
- Lower Prices for Consumers: Reduced trade barriers can lead to lower prices for consumers.
- Political Cooperation: RTAs can foster political cooperation and reduce tensions between countries.
- Increased Bargaining Power: RTAs can give member countries more bargaining power in negotiations with other countries or trading blocs.

Challenges of RTAs:

- Trade Diversion: RTAs can lead to trade diversion, where trade is shifted from more efficient suppliers to less efficient suppliers within the region.
- Loss of Sovereignty: Member countries may have to compromise on certain policies and regulations to comply with the terms of the agreement.
- Increased Inequality: RTAs can exacerbate income inequality within and between countries.
- Negative Impact on Non-Member Countries: RTAs can exclude non-member countries from the benefits of trade liberalization, potentially harming their economies.

(iii) Plurilateral Trade Agreements

A formal agreement between a number of nations that concentrates on particular trade issues or sectors is known as a plurilateral trade pact. Plurilateral agreements feature a smaller group of countries but more than two, in contrast to bilateral or regional trade agreements, which involve two or more countries or a specific geographic region.

Important Features of Plurilateral Trade Agreements

- Focused on Particular Issues: These agreements usually focus on particular industries or problems, like government procurement, telecommunications, or information technology.
- Flexible Membership: Nations are free to enter or exit plurilateral accords on their own, without changing the agreement's general framework.

• Customized Approach: Plurilateral agreements' terms and conditions can be adjusted to meet the unique requirements and preferences of the participating nations.

Advantages of Plurilateral Trade Agreements

- Targeted Approach: Plurilateral agreements can produce more targeted and successful results by concentrating on particular challenges.
- Flexibility: Plurilateral agreements' adaptability enables speedier negotiations and execution
- Plurilateral agreements can be used as the foundation for more comprehensive multilateral trade accords.
- Enhanced Cooperation: On some topics, these agreements can promote collaboration between the signatory nations.

# 13.4 EXCHANGE RATE AND TRADE

An exchange rate is the price at which one currency can be exchanged for another. It reflects the relative value of two currencies and plays a crucial role in international trade and finance. For instance, if 1 USD = 84 INR, this implies that 1 US dollar can be exchanged for 84 Indian Rupees.

Exchange rates are determined by the interaction of supply and demand in foreign exchange markets and are influenced by various factors such as economic conditions, interest rates, inflation, government policies, and global trade.

# 13.4.1 Types **64** Exchange Rate

(a) Fixed Exchange Rate (Pegged Exchange Rate): A fixed exchange rate is a system where a country's currency value is tied to another major currency (e.g., USD or Euro) or a basket of currencies.

Characteristics:

- The central bank actively intervenes in the foreign exchange market to maintain the currency's value within a narrow band.
- > It provides stability for international trade and investment.
- Examples: Hong Kong Dollar (HKD) is pegged to the US Dollar. Many Gulf Cooperation Council (GCC) countries peg their currencies to the USD.

Advantages:

- Promotes stability and predictability in international transactions.
- Reduces exchange rate risk.

Disadvantages:

- ▶ Limits monetary policy independence.
- Vulnerable to speculative attacks if the peg is perceived as unsustainable.

(b) Floating Exchange Rate (Flexible Exchange Rate): Floating exchange rate is determined purely by the forces of supply and demand in the foreign exchange market, without direct government or central bank intervention.

Characteristics:

- Highly volatile and subject to fluctuations.
- ▶ Reflects the economic fundamentals of a country.

Examples: Currencies like the US Dollar, Euro, and Japanese Yen operate under a floating exchange rate system.

Advantages:

- Allows natural adjustment of the currency based on market conditions.
- > Provides monetary policy independence.

Disadvantages:

- > High volatility can deter international trade and investment.
- Increases uncertainty for businesses.

(c) Managed Float (Dirty Float): A managed float system combines elements of both fixed and floating systems. While the exchange rate is primarily determined by market forces, the central bank intervenes occasionally to stabilize the currency or achieve economic objectives.

Characteristics:

- Central bank intervention occurs when excessive volatility threatens the economy.
- Provides flexibility and control.

Examples: India's currency regime is a managed float where the Reserve Bank of India (RBI) intervenes to manage excessive volatility.

#### Advantages:

- Balances stability and flexibility.
- Protects against sudden market shocks.

#### Disadvantages:

- Requires large foreign reserves for intervention.
- Uncertainty about the extent of intervention may confuse markets.

(d) Dual Exchange Rate: Under a dual exchange rate system, a country maintains two exchange rates: one for official transactions and another for market-based transactions.

#### Characteristics:

- > Often used during periods of economic crisis.
- Helps governments manage limited foreign reserves while supporting essential imports.

Examples: Some countries have implemented this system during crises to manage inflation or currency devaluation.

#### Advantages

- > Allows governments to prioritize foreign exchange allocation.
- ➢ Helps stabilize key economic sectors.

#### Disadvantages:

- Can lead to inefficiencies and corruption.
- May create market distortions.

(e) Spot Exchange Rate: This is the exchange rate at which currencies are traded for immediate delivery (usually within two business days).

Characteristics:

- Reflects current market conditions.
- Highly liquid and fluctuates frequently.

Examples: If the spot rate for 1 USD to INR is 84, you can exchange USD for INR at that rate on the same day or within two days.

(f) Forward Exchange Rate: A forward exchange rate is the agreed-upon rate for a currency exchange that will occur at a specified future date.

Characteristics

- ▶ Used for hedging against exchange rate fluctuations.
- Based on the spot rate plus or minus the forward premium or discount.

Examples: An importer agrees to exchange USD at a forward rate of 85 INR/USD six months from now.

#### **13.4.2 Factors Influencing Exchange Rates**

(i) Interest Rates: High interest rates attract foreign capital, strengthening the currency.

(ii) Inflation: Higher inflation reduces purchasing power, leading to depreciation.

(iii)Trade Balance: A trade surplus strengthens the currency, while a deficit weakens it.

(iv) Political Stability: Stable governments attract investment, strengthening the currency.

(v) Economic Growth: Strong economic performance increases currency demand.

#### 13.4.3 Impact of exchange rate fluctuations on trade

Exchange rate fluctuations significantly impact international trade by influencing the relative prices of goods, services, and raw materials traded between countries. These impacts can be analysed from various perspectives, including exporters, importers, consumers, and the broader economy.

(A) Impact on Exporters

(i) Positive Impact (Currency Depreciation):

• A depreciation (weaker domestic currency) makes a country's exports cheaper and more competitive in international markets.

Example: If the Indian Rupee depreciates against the USD (e.g., from 75 to 80 INR/USD), Indian goods become cheaper for US buyers, potentially boosting export demand.

• Exporters earn more in domestic currency for the same amount of foreign currency revenue.

Example: If an Indian exporter receives USD 10,000, they would now earn INR 800,000 (80 x 10,000) instead of INR 750,000.

(ii) Negative Impact (Currency Appreciation):

• An appreciation (stronger domestic currency) makes exports more expensive and less competitive abroad.

Example: If the Euro appreciates against the USD, European exporters face higher prices in the US market, reducing demand for European goods.

• Exporters may see reduced profit margins if they cannot pass on the higher costs to foreign buyers.

(B) Impact on Importers

(i) Positive Impact (Currency Appreciation):

• Currency appreciation makes imports cheaper, lowering the cost of foreign goods and services.

Example: If the Indian Rupee appreciates from 75 to 70 INR/USD, imported machinery from the US becomes less expensive for Indian businesses.

• Cheaper imports can reduce production costs for businesses that rely on imported raw materials or components.

(ii) Negative Impact (Currency Depreciation):

• Eurrency depreciation makes imports more expensive, increasing costs for businesses and consumers.

Example: A weaker Rupee increases the price of imported oil, leading to higher fuel costs and inflation.

• Import-dependent industries may face reduced profitability or pass higher costs to consumers.

(C) Impact on Trade Balance

(i) Currency Depreciation:

• Improves trade balance if export volumes increase significantly and imports decrease due to higher costs (price elasticity of demand matters).

Example: Japan's Yen depreciation often boosts its trade surplus by making its cars and electronics more attractive globally.

- May worsen the trade balance in the short term due to J-Curve Effect:
- Initially, the value of imports rises faster than the increase in export revenues.
- Over time, the volume effect of cheaper exports may improve the trade balance.

(ii) Currency Appreciation:

• Worsens trade balance as imports become cheaper (encouraging imports) and exports lose competitiveness.

Example: A strong US Dollar can lead to higher US trade deficits, as American goods become expensive globally while foreign goods are affordable domestically.

(D) Impact on Terms of Trade (ToT): ToT measures the relative prices of exports and imports.

- Depreciation of a currency can improve ToT for exporters (higher revenues in domestic currency).
- Appreciation of a currency can improve ToT for importers (lower import costs).
- (E) Impact on Global Value Chains (GVCs)

In an interconnected global economy, exchange rate fluctuations affect multinational companies and countries involved in GVCs:

- Positive Impact: Currency depreciation in one country may make its manufacturing inputs cheaper, benefiting firms sourcing from that country.
- Negative Impact: Firms heavily reliant on imported raw materials may face cost increases due to currency depreciation.

(F) Consumer Impact

(i) Higher Prices Due to Currency Depreciation:

- Imported goods, such as electronics, vehicles, and luxury items, become more expensive.
- Can lead to inflation, reducing purchasing power.

(ii) Lower Prices Due to Currency Appreciation:

- Imported products become cheaper, improving consumer affordability.
- May create a preference for imported goods, potentially harming domestic industries.
- (G) Sectoral Impact

(i) Export-Oriented Industries:

• Industries like IT services, textiles, and manufacturing benefit from currency depreciation as they receive foreign earnings.

(ii) Import-Dependent Industries:

• Sectors like oil refining, pharmaceuticals (reliant on imported active ingredients), and electronics manufacturing suffer when the domestic currency depreciates.

(H) Long-Term Impacts

- Investment Decisions: Persistent exchange rate volatility may deter long-term trade and investment due to uncertainty.
- Competitiveness: Chronic depreciation or overvaluation can affect a country's competitiveness. For example, if a currency remains overvalued, industries may struggle to compete globally.

• Inflationary Pressures: Currency depreciation increases import costs, contributing to inflation, which affects the cost of living and wage dynamics.

# **13.5 INTERNATIONAL TRADE ORGANISATION**

A formal agreement that specifies the terms of trade between two or more nations is known as an international trade agreement. In order to promote cross-border commerce in products and services, these agreements seek to lower or do away with trade barriers including tariffs, quotas, and other limitations.

The World Trade Organization (WTO), the International Monetary Fund (IMF), and the World Bank play crucial roles in facilitating international trade and ensuring economic cooperation among nations.

### Role of World Trade Organisation (WTO) in facilitating trade

The WTO is the global body responsible for overseeing and regulating international trade. Established in 1995, it succeeded the General Agreement on Tariffs and Trade (GATT) and now includes 164 member nations.

A. Trade Negotiations and Agreements

- Provides a platform for member nations to negotiate trade agreements aimed at reducing barriers such as tariffs, quotas, and subsidies.
- Administers the agreements made during trade negotiations, such as the Trade Facilitation Agreement (TFA) aimed at expediting customs procedures.

B. Dispute Resolution

- Acts as a mediator when trade disputes arise between nations.
- Provides a structured process for resolving disputes through its Dispute Settlement Body (DSB), ensuring fair and impartial outcomes.

C. Reducing Trade Barriers

• Promotes the reduction of tariff and non-tariff barriers to ensure smoother and freer trade.

• Encourages transparency and predictability in trade policies by requiring member countries to notify the WTO of significant changes.

D. Ensuring Fair Trade Practices

- Monitors trade policies to ensure compliance with global standards.
- Discourages unfair practices such as dumping (exporting goods at below-market prices) or excessive subsidies that distort competition.

E. Capacity Building for Developing Nations

- Provides technical assistance and capacity-building programs to help developing and least-developed countries integrate into the global trading system.
- Supports initiatives that enhance these nations' ability to compete in international markets.

F. Monitoring Global Trade Trends

- Publishes regular reports on world trade to help countries make informed decisions.
- Monitors the implementation of trade commitments by member nations.

# Role of the International Monetary Fund (IMF) in Facilitating Trade

The IMF, established in 1944, focuses on fostering global monetary cooperation, ensuring exchange rate stability, and promoting balanced trade among its 190 member nations.

A. Exchange Rate Stability

- Provides advice and policy recommendations to member countries to maintain stable exchange rates, essential for predictable trade.
- Monitors global exchange rate policies to prevent competitive devaluations that could harm global trade.

B. Balance of Payments Support

• Assists countries facing balance of payments crises, which occur when imports consistently exceed exports, leading to a foreign currency shortage.

- Offers financial assistance to countries to meet short-term foreign exchange needs and stabilize their economies.
- C. Promoting Free Trade through Economic Stability
  - Encourages trade liberalization by advocating policies that remove restrictions on cross-border transactions.
  - Supports structural reforms in member countries to create an environment conducive to trade and investment.

D. Surveillance of Global Trade and Economic Policies

- Monitors the global economy and publishes reports like the World Economic Outlook to provide insights into trade and financial developments.
- Advises countries on macroeconomic policies that align with promoting trade.

E. Capacity Building and Technical Assistance

- Provides training and technical support to help nations develop financial systems and manage trade-related financial policies.
- Assists in improving the fiscal and monetary frameworks that underpin global trade.

# Role the World Bank in Facilitating Trade

The World Bank, established in 1944, primarily focuses on long-term development and poverty reduction. It plays a critical role in facilitating trade by creating the infrastructure and institutional frameworks necessary for economic growth.

A. Financing Trade Infrastructure

- Provides loans and grants to build and modernize infrastructure critical to trade, such as ports, roads, railways, and telecommunications.
- Examples include developing trade corridors in Africa and improving ports in South Asia to enhance trade connectivity.

B. Supporting Trade-Related Reforms

- Helps countries reform trade policies and institutions to improve their global competitiveness.
- Assists in streamlining customs procedures, improving border management, and fostering regional trade agreements.

C. Promoting Export Growth in Developing Nations

- Funds projects that enhance the export capacity of developing countries, such as agricultural and industrial development.
- Supports value chain development to help nations move up the ladder from exporting raw materials to higher-value goods.

D. Facilitating Regional and Global Integration

- Supports regional trade agreements and initiatives, such as the African Continental Free Trade Area (AfCFTA), to promote trade within regions.
- Helps nations align their trade policies with global standards.

E. Knowledge Sharing and Capacity Building

- Conducts research and publishes studies on global trade issues to inform policymakers.
- Provides technical assistance and knowledge-sharing programs to help developing nations participate effectively in international trade.

F. Supporting Trade in Fragile and Conflict-Affected Areas

• Works to rebuild trade infrastructure and institutions in post-conflict regions to reintegrate them into global trade systems.

# **13.5.1 Regional Trade Block**

Regional trade blocs are agreements between countries in a specific region to promote trade and economic cooperation. They reduce or eliminate trade barriers like tariffs and quotas, facilitate investment, and often coordinate policies to enhance economic integration. Below is a detailed explanation of prominent regional trade blocs.

- 1. European Union (EU)
  - The European Union (EU) is a highly integrated regional trade bloc comprising 27 European countries.

Was established by the Maastricht Treaty in 1993, evolving from earlier economic agreements such as the European Economic Community (EEC).

# Key Features

- Single Market: Free movement of goods, services, capital, and labor across member states.
- Customs Union: Member states apply a common external tariff on goods imported from non-EU countries.
- Economic and Monetary Union (EMU): Adoption of the Euro as a common currency by 20 of the 27 members.
- Political and Economic Integration: Beyond trade, the EU coordinates policies on the environment, competition, agriculture, and regional development.

Economic Impact

- Intra-EU Trade: Accounts for about 64% of total trade in goods for EU countries.
- Global Trade Power: As a single entity, the EU is one of the world's largest trading blocs, with extensive trade agreements worldwide.
- Examples of Benefits: Elimination of tariffs within the bloc reduces trade costs. And uniform standards facilitate easier cross-border trade.

# 2. Association of Southeast Asian Nations (ASEAN)

- Established in 1967, ASEAN a political and economic organization comprising 10 Southeast Asian nations: Indonesia, Malaysia, Fulippines, Singapore, Thailand, Brunei, Vietnam, Laos, Myanmar, and Cambodia.
- ASEAN seeks to promote regional stability, economic growth, and cultural exchange.

#### Key Features

- ASEAN Free Trade Area (AFTA): Aims to reduce tariffs among member states to near zero.
- Non-Tariff Cooperation: Emphasizes minimizing non-tariff barriers and harmonizing standards.
- Trade Partnerships: ASEAN has free trade agreements with China, Japan, South Korea, India, Australia, and New Zealand.
• Sectoral Focus: Strong emphasis on electronics, automotive, textiles, and agriculture.

Economic Impact

- Intra-ASEAN Trade: Accounts for about 22% of total trade within the bloc, supported by AFTA and improved regional connectivity.
- Global Trade Links: ASEAN is a hub for manufacturing, with strong ties to global value chains, particularly in electronics.
- Fast-Growing Markets: Emerging economies like Vietnam and Indonesia have attracted significant foreign direct investment (FDI).

## 3. Regional Comprehensive Economic Partnership (RCEP)

- RCEP, launched in 2020, is the world's largest free trade agreement by GDP, covering 15 countries: the 10 ASEAN members plus China, Japan, South Korea, Australia, and New Zealand.
- It encompasses around 30% of global GDP and trade.

#### Key Features

- Elimination of Tariffs: RCEP aims to eliminate tariffs on 90% of traded goods over 20 years.
- Rules of Origin (ROO): A unified set of rules allows easier sourcing of inputs across member countries.
- Services and Investment: Enhances cooperation in services trade and investment.
- Digital Trade: Encourages e-commerce and digital economy growth in the region.

#### Economic Impact

- Integration of Supply Chains: RCEP simplifies trade procedures, benefiting global value chains.
- Lower Trade Costs: Promotes trade efficiency among highly connected economies like China, Japan, and ASEAN countries.
- Increased FDI: Encourages investment due to streamlined rules and regional market size.

# 4. African Union (AU) and the African Continental Free Trade Area (AfCFTA)

- The African Union (AU), established in 2001, promotes unity, peace, and socio-economic development across 55 African nations.
- A major economic initiative under the AU is the African Continental Free Trade Area (AfCFTA), launched in 2021.

Key Features of AfCFTA

- Single Market: Aims to create the largest free trade area by number of participating countries.
- Tariff Reduction: Seeks to eliminate tariffs on 90% of goods traded among member countries.
- Economic Integration: Focuses on harmonizing trade policies and improving intra-African trade, which currently stands at only 17% of total African trade.
- Industrialization and Diversification: Encourages value-added production rather than reliance on raw material exports.

Economic Impact

- Boosting Intra-African Trade: AfCFTA could increase intra-African trade by over 50% by 2030.
- Economic Growth: Estimated to add \$450 billion to African GDP by 2035.
- Job Creation: Industrialization and trade expansion can create millions of jobs.
- 5. Gulf Cooperation Council (GCC)
  - The Gulf Cooperation Council (GCC) was established in 1981 and includes six countries in the Arabian Gulf: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates (UAE).
  - It is both a political and economic organization aimed at fostering regional stability, economic growth, and integration.

Key Features

- Economic and Trade Cooperation:
- GCC member states coordinate policies in trade, investment, energy, and industry.

Focus on oil and gas trade, which forms the backbone of their economies.

- Customs Union: Implemented in 2003, the GCC Customs Union allows free movement of goods within the bloc by eliminating tariffs and adopting a unified customs tariff for non-member countries.
- Common Market:
- Launched in 2008, the GCC Common Market enables free movement of capital, labour, and services across member states.
- GCC nationals can own properties and establish businesses in any member country without restrictions.

#### **Economic Impact**

- Intra-GCC Trade:
  - The share of intra-GCC trade is relatively small compared to total trade, as the bloc primarily exports oil to the rest of the world.
  - However, initiatives like the Customs Union have improved regional trade flow.
- Global Trade Influence: The GCC countries are major exporters of oil and gas, making them key players in global energy markets.
- FDI Attraction: Unified policies and streamlined processes have made the GCC a hub for foreign direct investment, especially in energy, real estate, and tourism.

6. European Free Trade Association (EFTA)

- The European Free Trade Association (EFTA) was established in 1960 as an alternative to the European Economic Community (EEC), which later became the EU.
- Current members: Iceland, Liechtenstein, Norway, and Switzerland.
- Unlike the EU, EFTA does not seek political integration; its focus is purely economic.

Key Features

- Free Trade Area:
  - EFTA facilitates the free movement of goods among its members without imposing a common external

tariff, allowing members to set their own trade policies with non-member countries.

- Trade Agreements:
  - EFTA has an extensive network of free trade agreements (FTAs) with over 60 countries, including Canada, Japan, and Singapore.
  - It also cooperates closely with the EU through the European Economic Area (EEA), which includes Iceland, Liechtenstein, and Norway.
- Services and Investments: EFTA agreements cover trade in services, investment, intellectual property rights, and public procurement.
- EFTA-EU Relations:
  - Most EFTA members, except Switzerland, are part of the EEA, which grants them access to the EU's single market.
  - Switzerland operates through a series of bilateral agreements with the EU.

Economic Impact

- Global Trade Partnerships: EFTA countries, though small, maintain strong trade relations with major economies.
- Export-Driven Economies: Members like Norway (oil, gas, and seafood) and Switzerland (pharmaceuticals and financial services) are highly competitive in global trade.
- Access to the EU Market: The EEA agreement allows seamless access to the EU's single market, ensuring stability and predictability in trade for Iceland, Liechtenstein, and Norway.

## **13.6 CHALLENGES IN INTERNATIONAL TRADE**

International trade plays a vital role in global economic growth, but it also faces several challenges. Prominent among these are trade wars and sanctions, environmental and labour issues, and global supply chain disruptions. Below is a detailed explanation of each challenge.

#### A. Trade Wars and Sanctions

**Trade Wars** 

A trade war occurs when countries impose tariffs or other trade barriers on each other in retaliation, leading to reduced trade volumes, higher costs, and economic inefficiencies.

Key Challenges of Trade Wars:

- 1. Increased Costs of Goods:
  - Higher tariffs raise the price of imported goods, increasing costs for businesses and consumers.
  - Example: The U.S.-China trade war led to higher costs for products such as electronics and agricultural goods.
- 2. Disruption of Global Trade Flows:
  - Trade wars create uncertainty, disrupting established trade flows.
  - Countries may shift to less efficient suppliers, increasing production costs.
- 3. Impact on Global Value Chains:
  - Industries like electronics and automotive, which rely on interconnected supply chains, are particularly vulnerable.
- 4. Economic Growth Slowdowns:
  - Trade wars reduce global economic growth by shrinking international trade volumes and investment.
  - Emerging economies dependent on exports are disproportionately affected.

## Sanctions

Sanctions are trade restrictions imposed by one or more countries on a targeted nation to achieve political or economic objectives.

Key Challenges of Sanctions:

1. Restricted Market Access: Sanctions limit access to key export or import markets. Example: Sanctions on Russia have restricted its access to Western markets for energy, technology, and finance.

- 2. Impact on Innocent Parties: Businesses and consumers in both sanctioned and sanctioning nations suffer. For instance, European energy prices rose sharply due to sanctions on Russian energy exports.
- 3. Encouragement of Black Markets: Trade restrictions can lead to smuggling and black-market activities, undermining global trade norms.
- 4. Retaliation Risks: Sanctions can trigger retaliatory actions, escalating economic and political tensions.

#### **B.** Environmental and Labour Issues in International Trade

## **Environmental Issues**

The environmental costs of international trade are increasingly scrutinized as climate change and ecological degradation become pressing global concerns.

Key Challenges of Environmental Issues:

- 1. Carbon Emissions from Transport: International shipping and aviation contribute significantly to global CO2 emissions. For example: The maritime industry is responsible for nearly 3% of global greenhouse gas emissions.
- 2. Deforestation and Resource Depletion: Demand for commodities like palm oil, soy, and timber leads to deforestation and biodiversity loss. For example: Large-scale deforestation in the Amazon to meet global agricultural demand.
- 3. Lack of Global Standards:
  - > There is no universally agreed framework for making international trade environmentally sustainable.
  - Disparities in environmental regulations between countries lead to "pollution havens," where industries relocate to countries with lax environmental laws.
- 4. Costs of Green Trade Policies:
  - Imposing environmental tariffs (e.g., carbon border adjustments) can increase trade costs and reduce competitiveness for developing countries.

## Labour Issues

Labour standards, including wages, working conditions, and rights, vary widely across countries, creating challenges in ensuring ethical trade.

Key Challenges of Labour Issues:

- 1. Exploitation and Poor Working Conditions: Sweatshops and low wages in developing countries raise concerns about exploitation. For example: The garment industry in countries like Bangladesh has faced criticism for unsafe working conditions.
- Child Labour and Forced Labour: Certain industries, such as cocoa production in West Africa, rely on child labour, leading to ethical concerns in global supply chains.
- 3. Wage Disparities: Developed countries often accuse developing nations of gaining unfair trade advantages by paying extremely low wages. This can lead to tensions and calls for labour protectionism.
- 4. Compliance Costs: Meeting international labour standards can increase production costs, reducing competitiveness for businesses in developing nations.
- 5. Trade Sanctions for Labour Violations: Countries or regions, such as the EU, may impose trade restrictions on nations failing to meet labour standards, affecting export revenue.

#### C. Global Supply Chain Disruptions

Global supply chains are the backbone of international trade, connecting producers and consumers across borders. However, they are vulnerable to disruptions caused by natural disasters, pandemics, political instability, and technological changes.

Key Challenges of Supply Chain Disruptions:

- 1. COVID-19 Pandemic: The pandemic highlighted vulnerabilities in global supply chains, causing delays, shortages, and rising costs. For example: Shortages of semiconductors during the pandemic disrupted industries like automotive and electronics.
- 2. Geopolitical Tensions: Conflicts like the Russia-Ukraine war have disrupted global energy, food, and commodity supply chains. For

example: Ukraine's inability to export grain has impacted global food security.

- 3. Natural Disasters: Events like tsunamis, hurricanes, or floods can halt production and transportation. For example: The 2011 Japan earthquake disrupted global electronics and automotive supply chains.
- 4. Trade Protectionism: Countries imposing restrictions on exports (e.g., medical supplies during COVID-19) disrupt global supply chains. For example: India's export ban on rice in 2023 caused price volatility in global markets.
- 5. Rising Transportation Costs: High fuel prices and container shortages have increased the cost of international shipping. For example: During the pandemic, shipping container rates rose by over 500% in some trade lanes.
- 6. Technological Challenges: Cyberattacks on supply chain systems can disrupt global trade. For example: A ransomware attack on Maersk in 2017 affected its shipping operations globally.
- 7. Shifting Supply Chains: Companies are diversifying supply chains to reduce dependence on single countries (e.g., moving production from China to Southeast Asia). While this enhances resilience, it adds complexity and costs.

#### **13.7 GLOBALISATION AND ITS IMPACT ON TRADE POLICIES**

Globalization refers to the process of increasing interconnectedness and interdependence among countries through the exchange of goods, services, capital, technology, and cultural ideas. This phenomenon, accelerated by advancements in transportation, communication, and liberalized trade policies, has reshaped the global economic landscape and significantly influenced trade policies.

Globalization has influenced trade policies in both positive and challenging ways. Below are its key impacts:

A. Liberalization of Trade Policies

Globalization promotes free trade, encouraging countries to remove trade barriers.

Key Changes:

- Reduction in Tariffs: Countries reduce import tariffs to foster global trade. For example: The establishment of the World Trade Organization (WTO) in 1995 facilitated trade liberalization globally.
- Promotion of Free Trade Agreements (FTAs): FTAs like NAFTA (now USMCA), RCEP, and the EU's single market are products of globalization, allowing easier trade between member nations.
- Privatization and Deregulation: Governments reduce state intervention in markets to attract foreign investment and encourage competition.

#### B. Standardization of Trade Practices

Globalization has to the development of common trade practices, reducing trade complexities.

Key Changes:

- Harmonization of Standards: Nations adopt international standards for product quality, safety, and labour practices to participate in global markets.
- Customs Simplification: Streamlined customs procedures, such as digital documentation and global trade facilitation agreements, reduce delays in international trade.

C. Shift towards Regional Trade Agreements

Globalization has encouraged nations to form regional trade blocs to benefit from collective bargaining and preferential trade terms.

Examples:

- European Union (EU): A single market with free movement of goods, services, capital, and labour.
- RCEP (Regional Comprehensive Economic Partnership): A trade bloc including ASEAN countries and key trading partners like China, Japan, and Australia.

Impact on Trade Policies:

• Regional Over Global Focus: Nations prioritize regional agreements due to faster implementation and fewer member conflicts compared to global negotiations.

#### D. Emphasis on Export-Oriented Growth

Globalization has shifted the focus of trade policies toward export-led growth strategies.

Impact:

- Specialization and Comparative Advantage: Countries focus on sectors where they have an advantage, leading to higher efficiency and trade. For example: China specializes in manufacturing electronics, while India exports software services.
- Subsidies and Incentives: Governments provide export subsidies to promote global competitiveness of domestic industries.
- E. Integration of Developing Economies

Globalization has brought many developing countries into the global trade system, influencing their trade policies.

Changes:

- Reduction in Poverty: Access to global markets boosts economic growth and reduces poverty in many nations. For example: Vietnam's trade liberalization under the WTO has significantly reduced poverty.
- Challenges of Overdependence: Developing countries risk overreliance on exports or foreign investments, making them vulnerable to global shocks.
- Pressure to Adopt Liberal Policies: Organizations like the IMF and World Bank often encourage developing countries to liberalize trade policies in exchange for loans.

F. Rise of Protectionism and Trade Wars

While globalization has promoted free trade, it has also led to a backlash in some countries, resulting in protectionist policies.

Key Factors:

- Domestic Job Losses: Cheaper imports displace local industries, leading to unemployment. For example: The U.S. imposed tariffs on Chinese goods to protect domestic manufacturing.
- National Security Concerns: Countries impose restrictions on sensitive technologies to safeguard security.
- Anti-Dumping Measures: Nations impose tariffs to prevent dumping of cheap foreign goods that harm domestic industries.

7. Environmental and Social Considerations

Globalization has led to a growing focus on sustainable trade policies.

Key Changes:

- Inclusion of Environmental Standards: Trade agreements now include clauses to ensure sustainable practices. For example: The European Green Deal links trade policies with climate goals.
- Labour Rights Protections: Policies now emphasize the need for fair wages and safe working conditions in global supply chains.
- Carbon Border Adjustments: Countries implement carbon taxes on imports to address environmental concerns.

G. Global Supply Chain Integration

Globalization has transformed supply chains into complex, interconnected systems.

Impact on Trade Policies:

- Trade Facilitation Agreements: Governments adopt policies to ensure smooth functioning of supply chains, such as reducing customs delays.
- Dependency Risks: Overreliance on grobal supply chains makes economies vulnerable to disruptions, prompting policies to enhance resilience (e.g., reshoring production).

## **13.8 UNIT SUMMARY**

International trade involves the exchange of goods, services, and capital across international borders, driven by the principle of comparative advantage. Trade policies, on the other hand, encompass the rules, regulations, and agreements that govern these exchanges. This unit covers the foundational concepts, frameworks, and challenges in international trade and the policies shaping global trade dynamics.

## **13.9 CHECK YOUR PROGRESS**

## **Multiple-Choice Questions (1 Mark Each)**

- 1. Which of the following best describes international trade?
- (a) Exchange of goods and services within a country
- (b) Exchange of goods, services, and capital across borders
- (c) Only the export of goods
- (d) Only the import of services
- 2. What is the primary basis for comparative advantage in international trade?
- (a) Equal production capabilities
- (b) Efficient allocation of resources
- (c) Cultural similarities
- (d) Geographic proximity
- 3. What is an example of visible trade?
- (a) Export of financial services
- (b) Import of electronics
- (c) Tourism
- (d) Software development
- 4. A current account deficit occurs when:
- (a) A country exports more than it imports
- (b) A country imports more than it exports
- (c) There are no capital transfers
- (d) Exports and imports are balanced
- 5. Which of the following is a non-tariff barrier?
  - (a) Quotas
  - (b) Tariffs
  - (c) Customs regulations
  - (d) All of the above
- 6. What does an exchange rate represent? a) Interest rate

- b) Inflation rate
- c) Price at which one currency can be exchanged for another d) Price of a commodity

#### 7. Which country pegs its currency to the USD?

- a) India
- b) Hong Kong
- c) Japan
- d) Germany

## 8. What is the primary determinant of a floating exchange rate?

- a) Government policy
- b) Demand and supply in the forex market
- c) Inflation
- d) Political stability

## 9. Which exchange rate type combines fixed and floating features?

- a) Spot exchange rate
- b) Managed float
- c) Fixed exchange rate
- d) Dual exchange rate

## 10. What is the purpose of the WTO's Dispute Settlement Body?

- a) Building trade infrastructure
- b) Resolving trade disputes
- c) Monitoring exchange rates
- d) Managing foreign reserves

#### 11. Which factor does NOT directly influence exchange rates?

- a) Interest rates
- b) Inflation
- c) Trade balance
- d) Color of currency notes

## 12. What is a characteristic of a dual exchange rate system?

- a) Single exchange rate for all transactions
- b) Two exchange rates for official and market transactions
- c) Pegged to gold
- d) No government intervention
- 13. Which of the following benefits from currency depreciation?
  - a) Importers
  - b) Exporters
  - c) Domestic consumers of imports
  - d) All of the above
- 14. What does a forward exchange rate help manage?
  - a) Speculative attacks
  - b) Exchange rate volatility risks
  - c) Inflation
  - d) Interest rates

## 15. Which regional trade bloc includes 27 European nations?

- a) ASEAN
- b) GCC
- c) EU
- d) RCEP

## 16. Which of the following is a key challenge of trade wars?

- a. Increased demand for imports
- b. Higher production efficiency
- c. Increased costs of goods
- d. Elimination of tariffs

#### 17. Sanctions are primarily imposed for:

- a. Reducing environmental pollution
- b. Achieving political or economic objectives
- c. Increasing international trade volume
- d. Promoting tourism

## 18. Which sector is most affected by carbon emissions from international shipping?

- a. Information technology
- b. Maritime industry
- c. Retail industry
- d. Healthcare

## 19. The term "pollution havens" refers to:

- a. Areas with strict environmental laws
- b. Countries with lax environmental regulations
- c. Nations specializing in clean energy
- d. Regions promoting sustainable trade

#### 20. Child labor in cocoa production is an example of a:

- a. Trade barrier
- b. Labour issue
- c. Technological challenge
- d. Sanction impact

#### Short Answer Questions (2 Marks Each)

- 1. Define international trade.
- 2. Explain the concept of comparative advantage.
- 3. List two key reasons why international trade occurs.
- 4. Differentiate between visible and invisible trade.
- 5. Why is economic growth considered a key importance of trade?
- 6. Define the spot exchange rate.
- 7. List two advantages of a fixed exchange rate system.
- 8. What are the main characteristics of a managed float exchange rate system?
- 9. Explain how inflation affects exchange rates.
- 10. How does currency appreciation impact import prices?
- 11. What is the role of the IMF in ensuring exchange rate stability?
- 12. Differentiate between a fixed and floating exchange rate.

- 13. Mention two disadvantages of the dual exchange rate system.
- 14. State two impacts of exchange rate fluctuations on global value chains.
- 15. How does the WTO promote fair trade practices?
- 16. Describe the impact of natural disasters on global supply chains, with an example.
- 17. What are the benefits of regional trade agreements over global negotiations?
- 18. How has globalization influenced poverty reduction in developing countries?
- 19. What is meant by "reshoring production," and how does it impact supply chains?
- 20. Discuss how labor rights protection is integrated into modern trade agreements.

#### Medium-Length Questions (5 Marks Each)

- 1. Explain the significance of international trade in economic growth with an example.
- 2. Discuss the role of free trade in the global economy, highlighting its benefits.
- 3. Describe how technological advancements are promoted through international trade.
- 4. Compare and contrast tariffs and quotas as trade barriers.
- 5. Explain the balance of payments (BOP) structure, emphasizing its key components.
- 6. Analyze the effects of exchange rate fluctuations on terms of trade (ToT).
- 7. Explain the impact of exchange rate fluctuations on export-oriented and import-dependent industries.
- 8. What is the role of WTO in facilitating trade negotiations and reducing trade barriers?
- 9. Discuss the characteristics and uses of a forward exchange rate.
- 10. Explain the J-Curve effect in the context of currency depreciation and trade balance.
- 11. How do regional trade blocs like RCEP and ASEAN enhance economic cooperation?
- 12. How does globalization lead to overdependence of developing countries on global markets?
- 13. Explain how intellectual property protection has become significant in global trade policies.
- 14. Discuss the relationship between export subsidies and export-led growth strategies in globalization.

- 15. Evaluate the impact of COVID-19 on global supply chains and possible mitigation strategies.
- 16. How does the rise of protectionism challenge the principles of globalization?
- 17. Discuss the consequences of a persistent Balance of Payments deficit for an economy.
- 18. How does technological advancement contribute to international trade? Provide examples.
- 19. Describe the role of trade blocs in fostering global trade and economic stability.
- 20. Evaluate the importance of reducing trade barriers for global economic development.

#### Long Answer Questions (10 Marks Each)

- 1. Analyze the reasons and consequences of BOP deficits with realworld examples.
- 2. Evaluate the importance of regional trade agreements (RTAs) in promoting global trade.
- 3. Discuss how international trade can lead to economic interdependence and stability.
- 4. Provide a detailed account of free trade's benefits and limitations, using examples.
- 5. Examine the causes and impact of a trade surplus on a country's economy.
- 6. Compare and contrast the fixed, floating, and managed float exchange rate systems.
- 7. Analyze the long-term impacts of exchange rate fluctuations on trade and investment.
- 8. Explain the role of WTO, IMF, and World Bank in facilitating global trade.
- 9. Discuss the economic implications of dual exchange rate systems during a crisis.
- 10. Evaluate the impact of currency depreciation on trade balance with examples.
- 11. How do exchange rate fluctuations influence global value chains and multinational corporations?
- 12. Discuss the relationship between interest rates, inflation, and exchange rates with examples.
- 13. Explain the role of regional trade blocs like EU, RCEP, and GCC in promoting trade.
- 14. Assess the impact of exchange rate volatility on consumer prices and inflation.

- 15. Analyze the advantages and challenges of adopting a single currency in regional trade blocs like the EU.
- 16. Critically assess the role of regional trade agreements like RCEP and EU in shaping global trade dynamics.
- 17. Explore the dual impact of globalization on sustainable trade policies, focusing on environmental and labor standards.
- 18. Investigate the role of trade protectionism in reshaping global trade policies, using examples from recent years.
- 19. How do global supply chain integrations influence trade policies, and what strategies can be adopted to enhance resilience?
- 20. Evaluate the impact of technological advancements on global trade, with a focus on cybersecurity and supply chain resilience.

## **13.10 REFERENCE/ FURTHER READING MATERIALS**

1. 'International Trade: Theory and Policy' by Paul Krugman, Maurice Obstfeld, and Marc Melitz

2. 'International Trade and Economic Development' by Peter B. Kenen

3. 'Global Economic Integration: Opportunities and Challenges' by Howard J. Shatz

4. 'International Economics' by Paul Krugman, Maurice Obstfeld, and Marc Melitz

