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Paper - III

# Economic Analysis - I


**Centre for Distance and Online Education**

श्रीचन्द्रशेखरेन्द्रसरस्वतीविश्वमहाविद्यालयः

**Sri Chandrasekharendra Saraswathi Viswa Mahavidyalaya**

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**Enathur, Kanchipuram 631561.**

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**Course Writers**

Dr. J. Santhi
Associate Professor
Department of Commerce
SCSVMV

Dr. Hema Narayanan
Associate Professor
Department of Commerce
SCSVMV

**Programme Coordinator**

Mr. S. Swaraj
Assistant Professor,
CDOE
SCSVMV

**Chief Editors**

Dr. B. Balaji Srinivasan
Director, CDOE
SCSVMV

Dr. M.S. Ramaratnam
Head of the Department,
Department of Management Studies,
SCSVMV

# BC103 Economic Analysis - I

**Course Objectives**

- To introduce the fundamental concepts, scope, and nature of economics and to distinguish between microeconomics and macroeconomics.
- To develop an understanding of consumer preferences, utility analysis, and the principles governing consumer equilibrium and choice.
- To explain the theories of demand, elasticity, and production and their applications in business decision-making.
- To familiarize students with various cost and revenue concepts and their behavior in the short and long run for effective business planning.
- To analyze the characteristics and pricing mechanisms of different market structures and their impact on business decisions.

**Unit I – Introduction to Economics**

Definition and Nature of Economics – Wealth, Welfare, and Scarcity definitions – Economics as a Science and an Art – Positive and Normative Economics – Scope and Importance of Economics – Microeconomics vs. Macroeconomics – Role of Economics in Business Decision-Making.

**Unit II – Theory of Consumer Behaviour**

Concept of Utility – Cardinal and Ordinal Approaches – Law of Diminishing Marginal Utility – Law of Equi-Marginal Utility – Consumer Surplus – Indifference Curve Analysis – Properties, Marginal Rate of Substitution, and Consumer Equilibrium – Application of Consumer Behaviour in Modern Markets.

**Unit III – Demand, Supply, and Production Analysis**

Demand: Meaning, Determinants, and Law of Demand – Elasticity of Demand – Types, Measurement, and Applications – Supply: Law of Supply – Determinants and Exceptions – Factors of Production – Production Function – Law of Variable Proportions and Returns to Scale – Integration of Demand and Supply in Business Forecasting.

**Unit IV – Cost and Revenue Analysis**

Types of Costs – Fixed, Variable, Total, Average, and Marginal Costs – Short-Run and Long-Run Cost Curves – Economies of Scale – Revenue Concepts – Total, Average, and Marginal Revenue – Break-Even Analysis – Applications and Limitations – Use of Cost and Revenue Analysis in Managerial Decision-Making**.**

**Unit V – Market Structures and Pricing**

Market: Meaning, Features, and Classification – Perfect Competition – Price and Output Determination – Monopoly – Price Discrimination and Regulation – Monopolistic Competition – Product Differentiation and Selling Costs – Oligopoly – Features, Price Rigidity, and Collusive Models – Contemporary Market Practices and Digital Pricing Strategies.

**Course Outcomes**

Upon successful completion of this course, the student will be able to:

1. Explain the fundamental concepts and scope of economics and differentiate between micro and macroeconomic perspectives.
2. Apply the principles of utility and indifference curve analysis to determine consumer equilibrium.
3. Analyze the relationship between demand, supply, and production decisions in business contexts.
4. Evaluate cost and revenue relationships to support managerial decision-making and profit planning.
5. Assess the pricing and output decisions under various market structures using theoretical and graphical tools.

**Textbooks**


1. Sankaran, S. (2019). Business economics. Margham Publications.
2. Aryamala, A. (2018). Business economics. Vijay Nicole Imprints.
3. Dwivedi, D. N. (2020). Microeconomics: Theory and applications. Vikas Publishing House.
4. Mankiw, N. G. (2021). Principles of microeconomics (9th ed.). Cengage Learning.
5. Ahuja, H. L. (2022). Microeconomic theory. S. Chand Publishing.


**Reference Books**


1. Varshney, R. L., & Maheswari, K. L. (2020). Managerial economics. Sultan Chand & Sons.

2. Dewett, K. K. (2019). Modern economic theory. S. Chand Publishing.
3. Maddala, G. S., & Miller, E. (2017). Microeconomic theory and applications. McGraw Hill Education.
4. Reddy, P. N., & Appanniah, H. R. (2018). Business economics. Himalaya Publishing House.
5. Varian, H. R. (2019). Intermediate microeconomics: A modern approach (9th ed.). W. W. Norton & Company.

**E-Resources**

1. https://www.khanacademy.org/economics-finance-domain/microeconomics
2. https://openstax.org/books/principles-microeconomics-3e/pages/6-introduction
3. https://nptel.ac.in/courses/110/105/110105016/
4. https://openstax.org/books/principles-microeconomics-3e/pages/8-introduction
5. https://nptel.ac.in/courses/110/105/110105121/

# Economic Analysis-I

# Economic Analysis I

## Definition of Economics

### Structure



### Overview

"Economics is one of the oldest and most evolving social sciences that studies how individuals and societies make decisions about producing, distributing, and consuming goods and services. Over the time, meaning and also scope have transformed—from being termed a 'science of wealth' by classical economists, to a 'science of human welfare' by the neoclassical school, a 'science of scarcity and choice' by Lionel Robbins, and ultimately a 'dynamic and growth-oriented discipline' as described by modern economists such as Paul Samuelson."

This unit introduces learners to the evolution of economic thought and explains the various definitions of economics given by leading economists. It also explores the distinction between microeconomics and macroeconomics, helping students understand the foundation of modern economic analysis.

### Learning Objectives

After completion of this unit, learners will be capable to:

- Explain the meaning as well as nature of the economics.
- Understand definitions of the term economics proposed by different schools of thought.
- Differentiate between wealth, welfare, scarcity, and modern definitions of economics.
- Identify the merits and limitations of each approach.
- Recognize the interdependence of micro and macroeconomics.

- Relate economic theories to real-world decision-making.

## 1.1 Introduction to Economics

The word "economics" originates from the ancient Greek term *oikonomia*, composed of two parts: *oikos* (house) and *nomos* (management or law). Thus, economics literally meant "household management"—the art of efficiently running a family estate. In ancient Greece, this involved decisions about resource allocation, production, consumption, and distribution within the household unit.

Xenophon, a Greek historian and philosopher, wrote one of the earliest treatises on economics around 400 BCE, focusing primarily on agricultural estate management. Aristotle further developed these ideas, distinguishing between *oikonomia* (household management, which he considered necessary and honorable) and *chrematistike* (wealth-getting, which he viewed with suspicion when pursued without limits).

This domestic focus persisted for millennia. However, as societies grew more complex—with the rise of cities, nation-states, global trade, and industrial production—the scope of economic inquiry expanded dramatically. By the 18th century, economics had transformed from household management into the study of national wealth and, eventually, into the comprehensive social science we recognize today.

**Definition of Economics**

The term economics is been defined by the different authors in different perspective which have been discussed hereunder:


## 1.2 Wealth Definition – Adam Smith (Classical School)

The Classical School of Economists, led by Adam Smith, is known for defining the term economics as the *"Science of Wealth."*

"In his renowned work 'An Inquiry into the Nature and Causes of the Wealth of Nations' (1776), Adam Smith emphasized that the central goal of human effort is to acquire and accumulate wealth. Hence, economics, according to him, deals with the processes of generating, distributing, and utilizing wealth."

**Key Features**

- Economics is considered as science since it studies wealth.
- The objective of any human activity is purely to acquire and increase wealth.
- Material prosperity ensures national progress.
- Wealth creation is essential to overcome poverty and unemployment.

Smith defined political economy (as economics was then called) as "an inquiry into the nature and causes of the wealth of nations." For Smith, the central question was clear: What makes nations rich rather than poor? His answer emphasized **division of labor**, **free markets**, **capital accumulation**, and **limited government intervention**.

**Key Propositions of the Wealth Definition:**

1. **Wealth as Central Focus:** Economics studies the production, accumulation, and distribution of material wealth. The nation's prosperity is measured by its stock of valuable goods and its annual production (what we now call GDP).

2. **Human Nature as Self-Interested:** Smith famously argued that individuals pursuing their own self-interest unintentionally promote public good through the "invisible hand" of market competition. "It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest."
3. **Production as Primary:** The wealth definition emphasizes production over consumption. The key to national prosperity lies in expanding productive capacity through capital investment, technological improvement, and efficient organization.
4. **Laissez-Faire Policy:** Government should restrict itself to defense, justice, and public works that private individuals cannot profitably undertake. Free markets, not state planning, generate wealth.

**Detailed Analysis of Merits**

**1. Practical Relevance for Industrial Development** The wealth definition emerged precisely when European nations were industrializing. By focusing on production, capital formation, and technical efficiency, Smith provided a blueprint for economic development. His emphasis on division of labor—exemplified by his famous pin factory example where ten workers could produce 48,000 pins daily versus perhaps 20 working alone—demonstrated how organizational innovation creates wealth.

**2. Foundation for Economic Measurement** Smith's focus on national wealth led to the development of national income accounting. Modern concepts like GDP, GNP, and economic growth rates trace their lineage to Smith's concern with quantifying national prosperity. Without this wealth-focused foundation, contemporary macroeconomics would be impossible.

**3. Scientific Objectivity** By concentrating on observable, measurable phenomena (production, trade, capital stock), Smith attempted to make economics scientific rather than moralistic. This positivist approach influenced economics for centuries, encouraging empirical investigation and theoretical rigor.

**4. Policy Guidance** The wealth definition provided clear policy prescriptions: protect property rights, ensure contract enforcement, maintain sound money, and avoid protectionist restrictions. These principles remain influential in contemporary debates about economic development and free trade.

**Critical Evaluation: Limitations of the Wealth Definition**

**1. Narrow Materialism** Critics, most notably Thomas Carlyle, denounced economics as "the dismal science" and Smith's approach as the "Gospel of Mammon." By reducing human activity to wealth accumulation, the definition ignored spiritual, cultural, and social dimensions of life. A society might be wealthy yet miserable, prosperous yet unjust.

**2. Neglect of Human Welfare** The wealth definition treated humans primarily as instruments of production rather than ends in themselves. It asked "How much does the nation produce?" rather than "How well do people live?" A country could experience rising GDP while workers suffered exploitation, environmental degradation, or cultural dislocation.

**3. Ignoring Distribution** Smith focused on wealth creation but paid insufficient attention to distribution. If wealth concentrated in few hands while masses remained impoverished, was the nation truly prosperous? This criticism became increasingly powerful during the 19th century as industrialization created visible inequality.

**4. Static Analysis** The wealth definition emphasized equilibrium and natural tendencies rather than dynamic change. It struggled to account for technological revolutions, institutional evolution, or the creative destruction that characterizes capitalist development.

**5. Limited Applicability to Non-Market Societies** The definition assumed market economies with private property and monetary exchange. It offered limited insight into traditional societies, subsistence economies, or socialist systems where wealth accumulation was not the primary organizing principle.

**Merits of Wealth Definition**

| **Merits** | **Explanation** |
|---|---|
| **Focus on wealth creation** | Highlighted the importance of production and capital formation for national prosperity. |
| **Practical orientation** | Encouraged industrial and commercial expansion, especially during the Industrial Revolution. |
| **Foundation for later theories** | Provided a base for further economic thought on trade, production, and markets. |

**Demerits of Wealth Definition**

| **Demerits** | **Explanation** |
|---|---|
| **Too narrow** | Restricted economics to the study of wealth alone. |
| **Ignored human welfare** | Neglected man’s social and moral dimensions. |

| Demerits | Explanation |
|---|---|
| **Materialistic** | Critics like Carlyle called it "the dismal science" and "Gospel of Mammon." |
| **Selfish motive** | Treated man as wealth-seeking, ignoring values like charity and cooperation. |

Adam Smith's definition laid the foundation for economics as science but failed to recognize that wealth is only a means, not an end.

**Contemporary Relevance and Indian Context**

Despite its limitations, Smith's wealth definition remains relevant. Contemporary India's economic reforms since 1991 reflect Smithian principles: liberalization, privatization, and globalization aimed at accelerating wealth creation. The "Make in India" initiative, emphasizing manufacturing and export growth, echoes Smith's focus on productive capacity.

However, India's experience also illustrates the definition's limitations. Rapid GDP growth (wealth creation) has coexisted with persistent poverty, environmental crisis, and regional inequality—challenges that Smith's framework inadequately addresses. This tension motivated subsequent economists to broaden economics' scope beyond wealth.

## 1.3 Welfare Definition – Alfred Marshall (Neo-Classical School)

Alfred Marshall redefined economics in his book *"Principles of Economics"* (1890). He stated that **"**Economics is a study of mankind in the ordinary business of life. It examines how people earn and use income to promote material well-being."

According to Marshall, wealth is not the ultimate goal but merely a means to achieve human welfare. Hence, the focus shifted from wealth to man.

**Features of Welfare Definition**

- Emphasizes *human welfare* rather than wealth.
- Divides human activities into *economic* (income-generating) and *non-economic* (non-material) activities.

**Key Elements:**

1. **Human-Centered Focus:** Economics studies people, not wealth. Wealth is merely a means to achieve human welfare, never an end in itself.
2. **Ordinary Business of Life:** Economics concerns everyday activities—earning income, spending money, saving for future, raising families—not just extraordinary commercial transactions.

3. **Material Wellbeing:** While acknowledging non-material needs (love, knowledge, beauty), economics focuses specifically on material conditions that support human flourishing.
4. **Individual and Social Dimensions:** Marshall balanced methodological individualism (studying individual choice) with recognition that economic outcomes emerge from social interaction.

**Merits of Welfare Definition**

| Merits | Explanation |
|---|---|
| **Human-centred approach** | This definition recognises economics as a study which focuses on human welfare, and not just money or goods. |
| **Normative orientation** | Introduced value judgments, linking economics to moral and ethical welfare. |
| **Comprehensive scope** | Included both individual and societal aspects of economic well-being. |

**Demerits**

| Demerits | Explanation |
|---|---|
| **Vague concept of welfare** | Did not define welfare clearly; it is subjective and varies from person to person. |
| **Excluded non-material services** | Ignored important non-material services like education and health. |
| **Neglected scarcity** | Failed to recognize scarcity and choice as the root of economic problems. |

Marshall humanized economics by connecting wealth to welfare. However, the lack of clarity about welfare limited the universality of his definition.

**Detailed Analysis of Merits**

**1. Restoration of Human Dignity** By placing human welfare at economics' center, Marshall rescued the discipline from charges of materialism and selfishness. Economics became a moral science concerned with improving human lives, not merely counting wealth. This broader vision attracted students who might have been repelled by narrow commercialism.

**2. Integration of Consumption and Production** Marshall developed comprehensive theories of both consumer behavior (demand) and producer behavior (supply), unifying them through

price theory. His "scissors" metaphor—demand and supply blades cutting out price—remains economics' fundamental analytical tool.

**3. Time Period Analysis** Marshall introduced the crucial distinction between market period, short run, and long run, allowing economists to analyze how adjustment speeds affect economic outcomes. This temporal dimension added realism to theoretical models.

**4. Marginal Analysis** Building on earlier work by Jevons and Menger, Marshall developed marginal utility theory, explaining how rational consumers allocate limited income among competing wants. This "marginal revolution" transformed economics into a rigorous mathematical discipline.

**5. Practical Policy Guidance** Marshall's welfare focus supported progressive policies: public education, improved working conditions, social insurance, and environmental protection. Economics could guide governments in promoting collective wellbeing without sacrificing market efficiency.

**Critical Evaluation:**

**1. Vague and Subjective Concept of Welfare** Marshall never precisely defined welfare. Is it happiness? Satisfaction? Capability? Fulfillment? Different people define wellbeing differently, making scientific measurement problematic. A drug addict might achieve high subjective welfare while destroying their life—should economics count this positively?

**2. Difficulty of Interpersonal Utility Comparison** Marshall assumed welfare could be compared across individuals, but modern economics recognizes the "interpersonal comparison problem." We cannot objectively measure whether ₹100 gives more welfare to a poor person or a rich person, though common sense suggests the former.

**3. Neglect of Scarcity and Choice** By emphasizing welfare maximization, Marshall underemphasized the fundamental constraints that make economic choice necessary. His definition could apply to a post-scarcity utopia where resources are unlimited, suggesting it misses something essential about actual economic problems.

**4. Limited Treatment of Conflict** Marshall's vision of harmonious social improvement underestimated distributional conflicts. When employers and workers bargain over wages, or when developers and environmentalists dispute land use, whose welfare should economics prioritize?

**5. Cultural and Historical Specificity** Marshall's "ordinary business of life" reflected Victorian British middle-class experience. The definition fits poorly with subsistence economies, traditional societies, or cultures where collective identity supersedes individual welfare calculation.

**Contemporary Relevance and Indian Context**

Marshall's welfare definition profoundly influences contemporary development economics. India's focus on "inclusive growth," the Human Development Index (combining income, education, and health), and programs like MGNREGA (guaranteeing rural employment) reflect Marshallian priorities.

The 2024 Nobel Prize in Economics, awarded to Banerjee, Duflo, and Kremer for their experimental approach to poverty reduction, extends Marshall's welfare tradition using modern randomized controlled trials. Their work demonstrates how rigorous economics can directly improve poor people's material wellbeing—precisely Marshall's vision.

However, India's policy debates also reveal the definition's limitations. When the government debates farm laws, labor codes, or environmental regulations, stakeholders disagree fundamentally about whose welfare counts and how to measure it—questions Marshall's definition cannot definitively answer.

## 1.4 Scarcity Definition – Lionel Robbins (1932)

The 1930s brought unprecedented economic catastrophe. The Great Depression destroyed faith in market self-regulation, while Soviet planning offered an apparent alternative. Economists faced urgent questions: What is economics' proper scope? Is it a science or ideology? Can economists provide objective knowledge or merely partisan advocacy?

**Lionel Robbins**, a British economist from the London School of Economics, provided a scientific definition in the book titled "*An Essay on the Nature and Significance of Economic Science"* (1932). His definition sought to establish economics as a value-free science, distinct from ethics, politics, and other social sciences.

"Robbins defined economics as the discipline that examines how human behaviour relates to the use of limited resources that have multiple possible applications to satisfy various wants."

**Key Features**

- **Unlimited wants (ends):** Human wants are endless.
- **Scarce resources (means):** Resources available to satisfy the wants are limited.
- **Alternative uses:** Resources can be used in many ways, requiring choice.
- **Choice-making:** Economics studies how to choose between competing ends.

**Example:**

A student has limited time and must choose between studying for exams, attending a family event, or working part-time. This decision-making under scarcity illustrates Robbins' concept.

**Merits**

| Merits | Explanation |
|---|---|
| **Scientific approach** | Made economics a positive science focused on facts and logic. |
| **Universal application** | Applicable to all economies, rich or poor. |
| **Recognized scarcity and choice** | Emphasized real-world constraints faced by individuals and nations. |

**Demerits**

| Demerits | Explanation |
|---|---|
| **Ignored welfare** | Focused on choice-making, not human happiness. |
| **Static approach** | Ignored growth, development, and changes over time. |
| **Too abstract** | Overemphasized theory over practical social issues like poverty. |

Robbins' scarcity definition marked a turning point, giving economics a scientific foundation, but it separated economics from ethical and welfare concerns.

## 1.5 Modern / Growth-Oriented Definition – Paul A. Samuelson

**Paul A. Samuelson**, a Nobel Laureate, provided a dynamic and comprehensive definition of economics in his book *"Economics"* (1948).

"According to Samuelson, economics is the study of how individuals and societies, whether using money or not, decide to allocate scarce productive resources—each with alternative uses—to produce goods and services over time and distribute them among people and groups for both present and future consumption."

**Main Points**

- Combines wealth, welfare, and scarcity.
- Emphasizes both *present and future* consumption (inter-generational balance).
- Recognizes economics as a *growth-oriented and dynamic science*.
- Incorporates production, distribution, exchange, and consumption.

**Merits**

| Merits | Explanation |
|---|---|
| **Comprehensive and dynamic** | Considers both present and future aspects of economic activity. |

| Merits | Explanation |
|---|---|
| **Integrative definition** | Combines welfare, scarcity, and growth perspectives. |
| **Universal appeal** | Applicable to developed and developing economies alike. |

**Demerits**

| Demerits | Explanation |
|---|---|
| **Complexity** | The inclusion of multiple dimensions makes it theoretical and less simple. |
| **Limited measurability** | Growth and welfare aspects are not easily quantifiable. |

Samuelson's definition is widely accepted today as it balances *human welfare, resource scarcity,* and *economic growth.*

**Nature of Economics**

| Aspect | Key Points |
|---|---|
| Economics as a Science | • Uses systematic study of knowledge and facts<br>• Examines cause-and-effect relationships<br>• Follows universally accepted laws (law of demand, law of supply, law of diminishing marginal utility)<br>• Relies on observation, data collection, and analysis<br>• Uses theories and models to predict trends<br>• Applies statistical and mathematical tools for precision |
| Economics as Positive Science | • Collects facts as first step<br>• Analyzes facts to derive results<br>• Determines relationships between facts and results<br>• Gives titles/names to findings<br>• Micro: determines prices and resource allocation |

| Aspect | Key Points |
|---|---|
| | • Macro: studies national income, employment, consumption, investment, price levels |
| Economics as Normative Science | • Identifies economic problems<br>• Analyzes problems using statistics<br>• Advises policies, laws, and theories to solve problems<br>• Suggests what prices, wages, and income distribution should be |
| Economics as an Art | • Applies theoretical knowledge to real-life situations<br>• Solves practical problems like inflation, poverty, unemployment<br>• Requires creativity, judgment, and experience<br>• Designs strategies for specific social and cultural contexts<br>• Adapts theory to dynamic human behavior<br>• Bridges gap between theory and practice |
| Final Conclusion | • Economics is a **science** in its **methodology**<br>• Economics is an **art** in its **application**<br>• Combines both **theoretical** and **practical** aspects |

## 1.6 Micro and Macro Economics

Economics is divided into two categories— **Microeconomics** and **Macroeconomics**.

**Microeconomics**

- Derived from *'Mikros'* a Greek word which means *small.*
- Studies the behaviour of **individual units** such as consumers, firms, and industries.
- Focuses on *demand, supply, pricing, and output decisions.*

**Examples:**

- How a firm decides the price of its product.
- How a consumer allocates income among different goods.

**Macroeconomics**

- Derived from *'Makros'* meaning *large.*
- Deals with the **whole economy**—aggregate income, employment, inflation, and growth.

- Concerned with national economic policies and overall performance.

**Examples:**

- Study on National income and Gross Domestic Product.
- Analysis of inflation and unemployment in a country.

The following table describes the nature of both microeconomics and macroeconomics:

| **Basis** | **Microeconomics** | **Macroeconomics** |
|---|---|---|
| **Meaning** | Study about individual economic units. | Study about the economy as whole. |
| **Scope** | Prices, output, production, consumption. | National income, inflation, growth and employment. |
| **Objective** | Efficiency and distribution of resources | Stability and overall economic growth |
| **Key Models** | Demand and the Supply, Consumer and Producer Equilibrium | Aggregate Demand, Aggregate Supply, Fiscal and Monetary Policy |

**Micro Economics Vs Macro Economics**

| **Micro Economics** | **Macro Economics** |
|---|---|
| It focuses on examining the behaviour and performance of specific units or components within an economy. | It involves examining the economy in its entirety, focusing on overall aggregates and broad economic indicators. |
| It focuses on aspects such as personal income, specific prices, and the output of individual firms or industries. | It focuses on broad aggregates such as national income, overall price levels, and total national output. |
| Its main concern is determining prices and distributing resources efficiently. | Its main focus is to assess the total income and employment generated within the entire economy. |
| It mainly uses the demand and supply of particular goods or production factors as its analytical tools. | Its primary analytical framework is built on aggregate demand and aggregate supply, which capture the behaviour of the economy as a whole. |

| | |
|---|---|
| It helps resolve the basic economic questions of what goods should be produced, the methods used to produce them. | It aids in addressing the fundamental issue of achieving full employment of resources within the economy. |
| It examines how equilibrium is achieved for a consumer, a producer, or an industry. | It aims at identifying the equilibrium levels of income and employment for the economy as a whole. |
| Price is the primary factor influencing microeconomic issues | Income is a key factor influencing macroeconomic issues. |
| Examples include individual income, personal savings, the pricing of a specific commodity, the output of a single firm, and consumer equilibrium. | Examples include national income, national savings, overall price levels, aggregate demand, aggregate supply, poverty, and unemployment. |

Both branches are interdependent — microeconomic decisions affect macro-outcomes, and macroeconomic policies influence individual behaviour.

## 1.7 Role of Economics in Business Decision-Making

Economics plays a very important role in business decision-making. It helps businesses understand how to use limited resources in the best possible way. Every business has to make choices such as what to produce, how much to produce, what price to charge, and how to compete in the market. Economics provides the ideas and tools to make these decisions wisely.

**1. Helps in Demand Forecasting**

Economics helps businesses understand customer demand. By studying demand patterns, income levels, tastes, and prices, companies can estimate how much of a product people will buy.

**Example:** An Indian company like **Maruti Suzuki** studies customer income, fuel prices, and preferences before launching a new car model. If petrol prices rise, demand for fuel-efficient cars increases. Based on this economic analysis, Maruti focuses more on small and mileage-friendly cars.

**2. Pricing Decisions**

Economics helps businesses decide the right price for their products. Firms consider factors like cost of production, demand, competition, and government taxes.

**Example**

In India, **Amul** decides the price of milk and dairy products by studying production costs,

demand from consumers, and competition from other brands. It also considers government policies related to agriculture and dairy farming

**3. Cost and Profit Analysis**

Economics helps businesses analyze costs and profits. It helps managers decide how to reduce costs and increase profits by choosing the best production methods.

**Example**

A textile factory in **Tiruppur (Tamil Nadu)** may use economic analysis to decide whether to invest in modern machines. If new machines reduce labor costs and increase output, the business will earn higher profits in the long run.

**4. Resource Allocation**

Resources like land, labor, capital, and raw materials are limited. Economics helps businesses allocate these resources efficiently to avoid waste.

**Example**

A startup in India with limited capital must decide whether to spend more on marketing or on product improvement. Economic thinking helps the firm choose the option that gives higher returns.

**5. Decision-Making under Risk and Uncertainty**

Businesses often face uncertainty due to changes in market conditions, government policies, or economic situations. Economics helps in analyzing risks and making better decisions.

**Example**

During the **COVID-19 pandemic**, many Indian restaurants started food delivery services. Economic analysis helped them understand changing consumer behavior and reduce losses.

**6. Understanding Government Policies**

Economics helps businesses understand government policies like GST, interest rates, subsidies, and trade policies, which directly affect business decisions.

**Example**

After the introduction of **GST in India**, many businesses changed their pricing and supply chain strategies to reduce tax burden and improve efficiency.

**Summary**

This unit explored how economic thinking has progressed from the classical period to modern times. Adam Smith highlighted the creation of wealth, while Alfred Marshall shifted the focus to human welfare. Lionel Robbins later defined economics around the idea of scarcity and

choice, and Paul Samuelson brought these perspectives together within a broader, growth-oriented framework.

Economics today is recognized as a social science that examines how individuals and societies manage limited resources to improve welfare and support economic progress. The division of the subject into microeconomics and macroeconomics helps provide a clearer understanding of both individual economic behaviour and the functioning of the economy as a whole.

## Check Your Progress

1. Define economics in your own words.
2. Explain Adam Smith's "Wealth Definition" and its main limitations.
3. How did Alfred Marshall link wealth with welfare?
4. Describe Lionel Robbins' definition of economics.
5. "Scarcity and choice are central to economic problems." – Explain.
6. Outline the main features of Paul Samuelson's modern definition.
7. Compare and contrast the definitions given by Robbins and Samuelson.
8. Distinguish between microeconomics and macroeconomics.
9. Illustrate the interdependence between micro and macroeconomics with examples.

## Glossary

| Term | Meaning |
|---|---|
| **Wealth** | Material possessions and resources that contribute to prosperity. |
| **Welfare** | Human well-being and satisfaction derived from economic activity. |
| **Scarcity** | Limited availability of resources relative to human wants. |
| **Choice** | Making decisions between different possible uses of limited resources. |
| **Microeconomics** | It focuses on the economic actions and choices of single entities, including families and firms. |
| **Macroeconomics** | It focuses on analysing the actions and decisions of individual entities, including consumers and businesses.<br>**Option 3:** |

| Term | Meaning |
|---|---|
| | It involves examining the behaviour and decision-making patterns of specific units like families and enterprises.<br>**Option 4:**<br>It studies how individual consumers and producers respond to economic conditions and make economic decisions.<br>If you want a more academic, concise, or simple version, I can refine it further. |
| **Growth** | Increase in a country's production and income over time. |
| **Positive Science** | Deals with 'what is' rather than 'what ought to be'. |
| **Normative Science** | Concerned with value judgments and welfare. |

## Suggested Reading


1. **Ahuja, H.L.** – *Modern Economics: Micro and Macro Theory and Applications*, S. Chand.
2. **Paul A. Samuelson & William D. Nordhaus** – *Economics*, McGraw-Hill.


## Unit II: Utility Analysis and Consumer Behaviour

## Structure

- 2.7 Application of Consumer Behaviour in Modern Markets
- 2.8 Indifference Curve Analysis
- 2.9 Conclusion
- Check Your Progress
- Let Us Sum Up
- Glossary
- Answers to Check Your Progress
- Suggested Reading

## Overview

Utility analysis forms the core of microeconomic theory, which explain about consumers way of making decisions to allocate their resources and satisfy their needs. This unit covers both the cardinal (measurable utility) and ordinal (rank-based preference) approaches, explains fundamental laws such as Law of the Diminishing Marginal Utility & Law of Equi-Marginal Utility, and introduces indifference curve analysis as a modern approach

### Learning Objectives

After completion, students could able to:

- Explain concept and various kinds of utility.
- Distinguish cardinal and the ordinal utility analysis.
- State and apply the Law of Diminishing Marginal Utility & Law of Equi-Marginal Utility.
- Understand and measure consumer surplus.
- Interpret and draw indifference curves and explain the marginal rate of substitution.
- Apply utility concepts to real-world consumer behaviour.

## 2.1 Introduction

"Utility refers to the level of satisfaction or pleasure that a consumer experiences from consuming goods or services." Economic expert study consumer behaviour using two main approaches: the cardinal approach, which treats utility as measurable in units called "utils," and the ordinal approach, which assumes consumers can rank their preferences without assigning numerical values.

### Meaning of the term 'Utility'

Utility essentially denotes the ability to provide satisfaction or usefulness. In economics, it refers to a good or service's capacity to meet human wants. Utility is the characteristic of goods or services that allows them to satisfy consumer needs. Simply put, it is the "want-satisfying

capacity" of a product or service. In basic terms, utility means the capacity of a good or service to fulfil a consumer's desires. Utility is generally measured in monetary terms and is relative, individual perceive it in different manner depending on circumstances. Utility differs from mere usefulness: a product may be useful, yet it might not provide utility if it fails to satisfy a specific want.

Whenever a consumer purchases or consumes a product, they derive some benefit or satisfaction from its use. This satisfaction, in turn, forms the basis of consumer demand, as individuals decide to buy goods depending on the utility they expect to receive.

The level of utility a commodity provides will depend upon the intensity of the consumer's desires or needs. A stronger or unmet desire for any good increase the urgency to obtain it, thereby enhancing the utility derivable from it. In contemporary economics, utility is often described as expected satisfaction, which may differ from the actual satisfaction experienced—it can be greater than, equal to, or lesser than the real satisfaction obtained from consuming the product.

## 2.2 Concept of 'Utility'

**Meaning**

Utility is meant to the ability of a commodity or service to fulfil human wants or desires.

**Definition**

- **Prof. W.S. Jevons:** "Utility is the ability or capacity of a good to satisfy human wants."
- **Prof. Alfred Marshall:** "The want-satisfying quality of a commodity is called its utility."

Utility differs from usefulness or morality; even harmful goods like cigarettes may possess utility if they satisfy a want.

**Characteristics of Utility**

1. **Utility has not any Moral or Ethical Connotation**

A commodity provides utility regardless of whether it serves for any social purpose or not. To quote for an example, a knife serves as utility for a housewife in cooking but also renders utility for someone intending to commit harm. Utility is purely about an ability to satisfy a want, not about the moral value of the act.

2. **Utility is Psychological**

The utility of a good purely depends on the consumer's perception of its ability to satisfy a particular want. This means that utility varies from person to person based on individual preferences, attitudes, and likes or dislikes.

3. **Utility and Usefulness are not the same**

Utility is about satisfying a want, whereas usefulness relates to the inherent function of a commodity. A commodity may provide utility even if it is harmful or undesirable. For example, cigarettes or alcohol have utility for consumers despite being injurious to health. Demand depends on utility rather than usefulness.

4. **Utility Cannot Be Measured Objectively**

Since utility is subjective and depends on individual perception, it cannot be expressed precisely in numerical terms. It cannot be measured directly or cardinally. Although Professor Marshall assumed cardinal measurement in his demand analysis, such measurement is not realistically feasible.

5. **Utility Is Determined by the Intensity of Desire**

The degree of utility is influenced by the intensity of the consumer's desire. An unsatisfied, strong want leads to high utility from a commodity. As consumption continues, the utility derived from additional units tends to decrease. This phenomenon is referred to as diminishing marginal utility, where the more of a commodity we consume, the less additional satisfaction we gain from it.

6. **Utility is Distinct from Pleasure**

A certain commodity may provide utility without generating pleasure. For example, medicines or injections may not provide immediate pleasure to a patient, but they are essential because they meet an important health need.

7. **Utility is Different from Satisfaction**

Although related, utility and satisfaction are not identical. Utility refers to the potential of a good to satisfy a want, while satisfaction is the actual fulfilment or experience of the consumer when the want is met.

**Types of Utility**

| Type of Utility | Meaning | Example |
|---|---|---|
| **Form Utility** | Created by changing the form of a product | Wheat to flour |
| **Place Utility** | Created by transporting goods to places where they are needed | Apples from Himachal to Chennai |
| **Time Utility** | Created by storing goods for future use | Cold storage of fruits |
| **Service Utility** | Created by providing services | Teaching, banking |

**Different Types of Utility**

In economics, production essentially refers to the act of generating utility. Utility can be created in different forms based on how goods and services are altered or delivered to consumers. The main types of utility include:

1. **Form Utility**

Form utility is created when the physical form or shape of a product is changed to make it more useful or desirable. Form utility arises when the shape or structure of a product is modified to increase its usefulness or appeal. This typically occurs through manufacturing or processing. For example, turning wood into furniture or refining steel into a cabinet generates form utility. Essentially, it is the utility added to raw materials through production.

2. **Place Utility**

Place utility arises when the goods are being made available at locations convenient for consumers. Transporting goods from factories to marketplaces or moving agricultural produce from farms to urban centres enhances their utility. For example, apples from Kashmir fetch higher prices in Pune than in Srinagar due to the added value of making them available where they are scarce. Place utility is primarily created through marketing, retail distribution, transportation, and services such as fisheries and mining.

3. **Time Utility**

Time utility is generated when goods are stored, maintained, or made available exactly when consumers need them. For instance, storing food grains during a bumper harvest and selling them later during scarcity generates time utility, allowing traders to meet demand when the product is most valuable. Trading and warehousing are key activities in generating time utility, as the availability of goods at the right time increases their usefulness.

4. **Service Utility**

Service utility is generated through the provision of professional or personal services that satisfy consumer needs. Professions such as doctors, lawyers, teachers, bankers, and actors create utility by offering expertise, assistance, or entertainment. Unlike goods, service utility is intangible and derives from the experience or benefit provided to the consumer.

## 2.3 Approaches to Utility Analysis

**Cardinal Approach**

- Alfred Marshall introduced this concept.
- Assumes utility is measurable in cardinal numbers (utils).
- The concepts of marginal utility and total utility are fundamental in economics.

**Ordinal Approach**

- Developed by Hicks and Allen.

- Assumes utility cannot be measured, but preferences can be **ranked**.
- Uses indifference curves.

2.4 The Law of Diminishing Marginal Utility (DMU)

The Law of Diminishing Marginal Utility describes a fundamental aspect of consumer behaviour. It states that when an individual keeps consuming additional units of a particular good, the extra satisfaction or utility gained from each successive unit gradually decreases.

This idea was originally introduced by the German economist H. Gossen in 1854 and was later improved and popularised by Alfred Marshall, who presented it in a clearer and more systematic form. "The extra satisfaction a person obtains from acquiring more of a particular good decline as the quantity they already possess increases."

**Law Based on Three Fundamental Facts**

This law is based on three key assumptions, outlined below:

**Limited Satisfaction of Individual Wants**

Although human wants in general are endless, each individual want can be fulfilled. As a person consumes more units of a particular good, their satisfaction from additional units diminishes. Ultimately, a point is reached where consuming more of that good provides no further satisfaction.

**Imperfect Substitutability of Goods**

Different goods satisfy different needs and cannot perfectly replace one another. Therefore, as a consumer uses more units of the same good, the satisfaction obtained tends to decline.

**Constant Marginal Utility of Money**

It is assumed that the utility of money remains unchanged throughout the consumption process, considering the consumer's current level of wealth. The foundation of this law rests on the nature of human wants. People assign varying degrees of importance to the goods they purchase—ready to pay a higher price for some items and a lower price for others. This variation in willingness to pay is influenced mainly by two factors:

(1) the intensity of the consumer's preference for the good, and

(2) the quantity of that good already possessed.

In simple terms, as a person consumes larger amounts of a specific good, their desire for more units slowly decreases. Consequently, the satisfaction declines.

Statement:

When a consumer keeps using extra units of a product, the additional satisfaction, or marginal utility, derived from each new unit diminishes, all other factors becoming constant.

**Assumptions**

1. Consumer's taste and preferences remain constant.
2. Units of commodity are identical.
3. Consumption is continuous.
4. Utility is measurable.

**Diagram**:

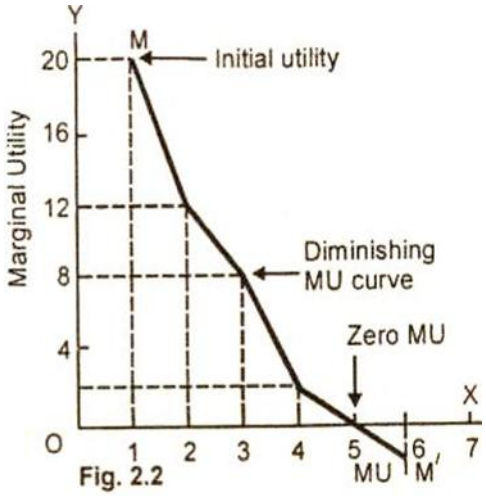

Fig. 2.2

A downward-sloping MU curve showing MU decreasing with each additional unit.

**Example (Indian Context)**: Drinking cups of tea—first cup gives high satisfaction; the fifth cup may bring little or no satisfaction.

**Exceptions/ Limitations to Law of Diminishing Marginal Utility:**

There are few exceptions or limitations that exist in law of diminishing utility.

(i) **Case of alcoholic beverage**: Consumption of liquor challenges the low for a short period. The more a person drinks, the more likes it. However, this is truer only initially. A stage comes when a drunkard too starts taking less and less liquor and eventually stops it.

(ii) **Rare collection**: If there are only two diamonds in the world, the possession of 2nd diamond will push up the marginal utility.

(iii) **Application to money**: The law equally applicable in the case of money. It is an acceptable fact that more money the man has, the greedier he becomes to get some additional units of it. However, the truth is that the marginal utility of money declines with richness but never falls to zero.

It is to be accepted that law of diminishing utility, like any other laws of Economics, is simply a statement of tendency. It holds good if other factors become constant.

## 2.5 Consumer Surplus

Alfred Marshall introduced the concept of **consumer's surplus**, describing it as the difference between what a consumer is willing to pay for a product and what they actually pay in the market. This concept arises from the Law of Diminishing Marginal Utility, as the satisfaction a consumer gains from a good is often greater than the price they pay for it. In simple terms, consumer surplus is the excess of the utility derived from a product over the amount spent on it.

According to Prof. Taussig, consumer surplus is the gap between the maximum price a buyer is prepared to offer and the actual price paid. For instance, if someone is willing to spend ₹50 on a movie ticket but the ticket costs only ₹42, the person gains a surplus of ₹8. This additional benefit, sometimes called a "bonus," occurs because the consumer values the good more highly than its market price.

Hence, consumer's surplus can be expressed as:

$$\text{Consumer's Surplus} = \text{Total Utility (TU)} - (\text{Quantity Purchased} \times \text{Market Price})$$

In essence, it measures the **excess satisfaction** a consumer receives .

**Formula for ascertaining consumer surplus**

Consumer Surplus = Willingness to pay – Actual price paid

**Diagram**:

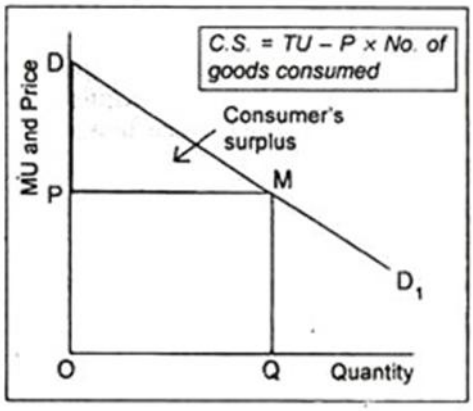


Fig. 2.14: Consumer's Surplus

Demand curve above the price line, shaded area shows surplus.

**Importance of Consumer's Surplus**

Although the concept of consumer's surplus involves certain limitations, it still holds considerable theoretical and practical significance in economics.

**(i) Theoretical Importance**

The concept of consumer's surplus helps differentiate between **value-in-use** and **value-in-exchange**. Value-in-use refers to the amount a consumer is willing to pay based on the utility or satisfaction the product provides. In contrast, value-in-exchange is the actual price at which the commodity is sold in the market. Thus, a product's usefulness determines its value-in-use, while its market price reflects its value-in-exchange. Thus, when consumer's surplus is considered, it reveals that, these two values may differ.

In addition, this concept assists in comparing welfare levels among different groups. For instance, people in urban areas often experience greater consumer's surplus in terms of access to entertainment, education, and facilities than those in rural regions. Marshall referred to such advantages as benefits derived from conjunctural circumstances.

**(ii) Practical Importance**

From a practical standpoint, consumer's surplus has several applications:

**Fiscal Policy**

A finance minister can use this concept while framing taxation policies. When a tax is imposed on a product, its price rises and the consumer's surplus decreases. Therefore, the policymaker must balance between the reduction in surplus and the gain in government revenue. A good tax policy is one that minimizes loss in consumer welfare while maximizing revenue collection.

**Subsidies and Bounties**

In the case of subsidies or grants, the opposite effect occurs — consumer's surplus increases as the price of goods falls.

**Monopoly Pricing**

A monopolist also considers consumer's surplus when fixing the price of his product. If the price is set too high, the consumer's satisfaction drops, reducing the overall surplus. Hence, the monopolist maintains prices at a level that ensures continued consumer benefit and loyalty.

**International Trade**

This idea also helps measure the gains from international trade, as consumers often purchase imported goods at prices lower than the value they place on them.**Public Projects**

Policymakers can use consumer's surplus to evaluate the social benefits of public works such as roads, bridges, and parks. It helps determine whether such projects enhance overall public welfare.

**Criticism or Limitations of Consumer's Surplus**

Despite its usefulness, the consumer's surplus has faced several criticisms, primarily due to difficulties in measurement and unrealistic assumptions.

**An Imaginary Concept**

Critics argue that consumer's surplus is hypothetical and lacks real-world existence. It depends on an imagined willingness to pay, which cannot be verified or quantified. Thus, it remains a theoretical abstraction rather than a measurable fact.

**Difficult to Measure**

Since utility is subjective, and also varies among person, measuring total utility accurately is impossible. As more units are consumed, the additional satisfaction gained from each previous unit gradually decreases. Economists like Hicks and Allen had pointed out that, utility being a psychological experience, cannot be precisely determined.

**Not Applicable to Substitute Goods**

The concept fails when close substitutes exist. If alternative goods are available, the consumer's willingness to pay for any one product changes. Hence, the surplus derived from one good cannot be measured independently of its substitutes or complements. For example, a pen's utility can only be fully appreciated when ink is available.

**Marginal Utility derived from Money is not constant**

Marshall is of assumption that the marginal utility of money remains constant is unrealistic. In reality, as a consumer's income changes, the value they attach to each unit of money also changes, affecting the measurement of surplus.

**Exhaustion of Surplus Utility**

Some critics believe that if consumers were aware of such a surplus, they would continue purchasing until the surplus vanished. However, this is not true since consumers must balance their spending across various goods, not just maximize surplus on one item.

**Inapplicable to Necessities**

For essential goods like water or food, consumer's surplus becomes immeasurable. For instance, a person dying of thirst might be willing to pay any amount for a glass of water — making the concept meaningless in such situations.

## 2.6 Consumer Equilibrium

**Cardinal Utility (also known as Law of Equi-Marginal Utility)**

A consumer is in equilibrium when they achieve the maximum satisfaction possible, given their income and the current prices of goods and services.

**In Cardinal Approach**

Consumer's equilibrium is reached when:

$$\frac{MU_x}{P_x} = \frac{MU_y}{P_y} = MU_m$$

Where,

- $MU_x, MU_y$ are marginal utilities of goods X and Y,
- $P_x, P_y$ are their prices,
- $MU_m$ is the marginal utility of money.

**Law of Equi-Marginal Utility**

The Law of Equi-Marginal Utility is an important principle in economics. It is also referred to as the Law of Substitution or the Law of Maximum Satisfaction. Human wants are endless, while the means or resources available to satisfy their wants are limited. Therefore, individuals must rank their wants and allocate their limited income in a manner that provides the greatest satisfaction. A rational consumer always aims to utilize their money efficiently to gain the maximum total utility possible.

**Explanation of the Law**

To achieve maximum satisfaction from a limited income, a consumer compares marginal utility obtained from every rupee spent on different goods. If spending one more rupee on one good provides more satisfaction than spending it on another, the consumer will reallocate expenditure from the latter to the former.

This process continues till the marginal utility of last rupee spent on each commodity becomes equal. In brief, the consumer substitutes the consumption of goods with a higher marginal utility compare to those with lower marginal utility, until equilibrium is reached.

**Illustration**

Let us assume, a consumer has ₹7 which is to be spent on two goods — apples and oranges. If ₹4 is spent on apples and ₹3 on oranges, the marginal utility (MU) of the 4th apple is 2, while that of the 3rd orange is 6.

Since, marginal utility of oranges is greater, consumer will reduce spending on apples and buy more oranges. Suppose a consumer reallocates the expenditure — purchasing 4 oranges and 3 apples. Now, marginal utility of both goods becomes equal (MU = 4).

Total utility derived is:

For 4 oranges: 10 + 8 + 6 + 4 = 28

For 3 apples: 8 + 6 + 4 = 18

Thus, Total Utility = 46

**Limitations of Law of Equi marginal Utility**

Like other economic principles, this law operates under certain assumptions and is not free from limitations in real-life situations.

**Ignorance of Consumer**

If consumer is unaware of the relative utility of goods, or acts out of habit, custom, or impulse, they may misallocate their resources. Lack of knowledge prevents the equalization of marginal utilities, resulting in less than maximum satisfaction.

**Inefficient Organisation of Resources**

In the case of businesses, if an entrepreneur or manager fails to utilize land, labour, and capital efficiently, they may not achieve the most profitable outcome. Poor management leads to unequal returns from different resources, violating principle of equal marginal utility.

**Unlimited Resources**

It is not applicable when resources are abundant or free, such as natural resources like air or sunlight. When resources are unlimited, no need to take decisions about how to allocate income or resources.

**Influence of Custom and Fashion**

Consumers often follow social customs, traditions, or fashion trends. In such cases, they continue purchasing certain goods regardless of diminishing satisfaction or rising prices. For example, spending on fashionable clothing or addictive substances does not follow the rational rule of substitution.

**Frequent changes in price**

When prices of goods fluctuate frequently, it becomes difficult for any consumer to adjust their spending pattern to maintain equal marginal utilities. Sudden changes in prices disturb the balance necessary for achieving maximum satisfaction.

**Conclusion**

This law is a cornerstone to consumer behaviour analysis. It explains how a rational consumer distributes limited income between various goods to achieve the greatest satisfaction. However, its application depends on consumer's awareness, stability of prices, and rational decision-making.

## 2.7 Application of Consumer Behaviour in Modern Markets

Consumer behaviour means studying how people choose, buy, use, and react to products and services. In modern markets, understanding consumer behaviour is very important because customers have many choices and changing preferences. Businesses use this knowledge to design better products, set the right prices, and create effective marketing strategies.

**1. Product Design and Development**

By understanding consumer needs, tastes, and preferences, companies can design products that customers actually want.

**Example**

**Patanjali** studied Indian consumers' preference for natural and ayurvedic products. Based on this behaviour, the company launched herbal toothpaste, soaps, and medicines, which became very popular in India.

**2. Pricing Strategies**

Consumer behaviour helps companies understand how sensitive customers are to price changes. Some customers prefer low prices, while others focus on quality.

**Example**

Mobile companies like **Jio** introduced low-cost data plans after understanding that Indian consumers are highly price-sensitive. This strategy helped Jio gain millions of users quickly.

**3. Promotion and Advertising**

Consumer behaviour helps businesses create advertisements that connect emotionally with customers and influence buying decisions.

**Example**

**Cadbury Dairy Milk** ads focus on emotions like happiness and togetherness, especially during festivals. This matches Indian consumer behaviour, where sweets are associated with celebrations.

**4. Market Segmentation**

Consumers differ in age, income, lifestyle, and preferences. Studying consumer behaviour helps companies divide the market into different segments and target each group effectively.

**Example**

**HUL (Hindustan Unilever Limited)** sells different products for rural and urban consumers, such as small sachets for rural areas where people prefer low-cost daily-use products.

**5. Understanding Buying Decisions**

Consumer behaviour helps businesses understand how and why consumers make purchase decisions, whether they buy online or offline.

**Example**

E-commerce companies like **Amazon India** and **Flipkart** study online buying behaviour. Features like customer reviews, easy returns, and cash-on-delivery are offered because Indian consumers value trust and convenience.

**6. Customer Satisfaction and Loyalty**

By understanding consumer expectations, companies can improve customer satisfaction and build long-term relationships.

**Example**

**Zomato** uses customer feedback and ratings to improve its services. This helps the company retain customers and increase loyalty.

## 2.8 Indifference Curve Analysis

- **Indifference Curve**: Represents combinations of goods giving equal satisfaction.
- **Marginal Rate of Substitution (MRS)**: It is a Rate which a consumer is desire to substitute one good with another without compromising total utility.
- **Properties**: Downward sloping, convex to the origin, do not intersect.

**Ordinal Utility Approach and Indifference Curve Analysis**

Modern economists have moved away from the cardinal measurement of utility, which was a key feature of earlier economic theories. They argue that utility is a psychological and subjective concept and could not be measured in exact numerical terms. Since satisfaction differs individually and based on situation, it is impossible to assign specific quantitative values to it.

Instead, economists proposed that a consumer can express preferences in terms of ranking or order, rather than in measurable units. This gave rise to the Ordinal Utility Approach, which focuses on the order of preferences rather than the precise magnitude of satisfaction.

**Explanation to Ordinal Utility Approach**

According to this approach, a consumer can rank various combinations of goods and services based on their level of satisfaction. Suppose, if a consumer is choosing between two goods—apples and bananas. Consumer can express preferences in one of three possible ways:

He may prefer apples to bananas; or

He may prefer bananas to apples; or

He may be indifferent between apples and bananas, meaning both give him equal satisfaction.

**Meaning of Curve:**

An Indifference Curve (IC) visually represents different combinations of two goods that provide a consumer with the same level of satisfaction. It illustrates the trade-offs a consumer is willing to make—how much of one good they are prepared to give up in order to obtain more of the other—without altering their overall utility. All points on a single indifference curve reflect equal satisfaction, which means that shifting from one combination to another on the same curve does not change the consumer's total utility.

Definition

An indifference curve shows various pairs of two goods that yield equal satisfaction to a consumer. It reflects their preferences by indicating how one good can substitute for another while keeping the consumer's overall utility unchanged.

**Illustration through an Indifference Schedule**

An Indifference Schedule lists multiple combinations of two goods that provide the same level of satisfaction to a consumer. Since every combination gives equal utility, the consumer is indifferent among them. For example, different bundles of apples and bananas may offer the same satisfaction. When these combinations are plotted on a graph, they form an indifference curve.

| Combination | Apples (units) | Bananas (units) |
|---|---|---|
| P | 1 | 15 |
| Q | 2 | 10 |
| R | 3 | 6 |
| S | 4 | 3 |
| T | 5 | 1 |

The above schedule reveals how consumer is indifferent toward all five combinations of fruits. For instance, combination P (1A + 15B) provides satisfaction at the same level as Q (2A + 10B), R (3A + 6B), S (4A + 3B), and T (5A + 1B).

In simple terms, when the number of apples increases, the consumer is willing to sacrifice some bananas to maintain the same level of satisfaction. This trade-off reflects the consumer's readiness to substitute one good for another while keeping total utility constant.

**Graphical Representation :**

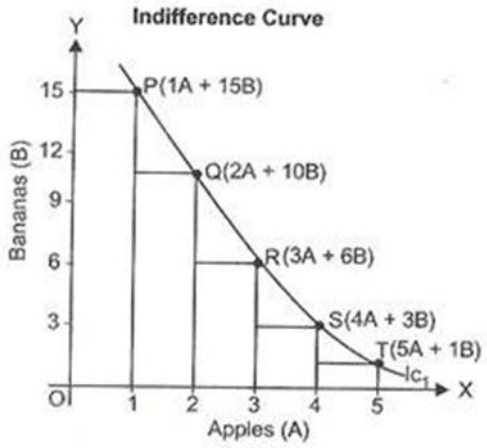


**Fig. 2.4**

When these combinations (P, Q, R, S, and T) are plotted on a graph, we obtain a smooth, downward-sloping curve is called as Indifference Curve ($IC_1$).

- On the X-axis, we measure Apples (A).
- On the Y-axis, we measure Bananas (B).

Each point—P, Q, R, S, and T—represents a combination listed in the Indifference Schedule. When these points are joined, they form the Indifference Curve ($IC_1$), which represents all combinations of apples and bananas that yield the same level of satisfaction. Each point on $IC_1$ reflects equal utility, meaning the consumer is indifferent between these bundles. Moving along the curve from one point to another does not alter their total satisfaction. Collectively, these bundles make up an Indifference Set—a group of combinations of two goods that provide the consumer with equal satisfaction.

Marginal Rate of Substitution (MRS)

The Marginal Rate of Substitution (MRS) expresses how willing a consumer is to substitute one good for another while keeping their total utility unchanged. It indicates the number of units of one good a consumer is prepared to give up to obtain an extra unit of another good without changing their overall satisfaction.

For example, when considering apples (A) and bananas (B), the MRS of A for B tells us how many bananas a consumer is willing to sacrifice to gain one additional apple while staying on the same indifference curve.

$$\text{MRS}_{AB} = \frac{\text{Units of Banana (B) given up}}{\text{Units of Apple (A) gained}} = \frac{\Delta B}{\Delta A}$$

Thus, the **Marginal Rate of Substitution (MRS)** represents the slope of the indifference curve.

**Note:** Mathematically, MRS is negative because the consumer gives up (−ΔB) in order to gain (+ΔA). However, in economic analysis, we usually consider its absolute value for simplicity.

**Properties of Indifference Curves**

**1. Indifference Curves Are Convex to the Origin**

Indifference curves are convex because of the **Law of Diminishing Marginal Rate of Substitution**. As a consumer substitutes apples for bananas, the number of bananas they are willing to sacrifice becomes smaller. This happens because the marginal utility of apples decreases, while the marginal utility of bananas increases. As a result, the curve bends inward toward the origin.

**2. Indifference Curves Slope Downward**

An indifference curve slopes downward from left to right, indicating an inverse relationship between the two goods. To obtain more of one good, the consumer must give up some of the other while keeping satisfaction unchanged. Therefore, the slope is negative.

**3. Higher Indifference Curves Represent Higher Satisfaction**

A higher indifference curve reflects a greater level of satisfaction because it shows combinations of goods that are more desirable. For example, if point A on $IC_1$ shows the bundle (OR, OP) and point B on a higher curve $IC_2$ shows (OS, OP), and OS is greater than OR, then point B gives more utility. This follows the idea of monotonic preferences—consumers always prefer more of a good to less.

**4. Indifference Curves Do Not Intersect**

Two indifference curves cannot cross because each represents a different level of utility. If they intersected, it would imply that the same combination of goods provides two different satisfaction levels, which is impossible. Therefore, only one indifference curve can pass through a given point.

**Assumptions Underlying Indifference Curve Analysis**

**1. Two Commodities**

The consumer buys only two goods—A and B. Their income is fixed and is entirely spent on these goods. The prices of both products remain constant.

**2. Non-Satiety (More is Better)**

The consumer never reaches complete satisfaction. They always prefer larger quantities of both goods and seek higher indifference curves that offer greater utility.

**3. Ordinal Utility**

Utility cannot be expressed numerically, but the consumer can rank different combinations in order of preference—first, second, third, and so on—based on the satisfaction each bundle provides.

**4. Diminishing Marginal Rate of Substitution (DMRS)**

When a consumer trades one good for another, the amount of the second good they are willing to give up decreases gradually. This declining willingness leads to a falling MRS, making the indifference curve convex toward the origin.

**5. Rational Consumer Behaviour**

A consumer is considered rational when they strive to maximize total satisfaction by efficiently allocating their limited income among available goods.

## 2.9 Conclusion

Utility theory explains the rationale behind consumer choices, providing tools to predict market demand and policy outcomes. The shift from cardinal to ordinal analysis marks a significant development in microeconomics.

## Check Your Progress

1. What do you mean by utility?
2. What is Consumer Surplus?
3. Explain about Consumer's Equilibrium.
4. What is meant by the Law of Equi-Marginal Utility?
5. Define indifference curve. Also explain its key properties.
6. What is meant by Marginal Rate of Substitution (MRS)?
7. Explain the reasons for indifference curves being convexed to the origin?

## Let Us Sum Up

- Utility refers to the satisfaction or pleasure a consumer receives from consuming goods and services.

- The **Cardinal Approach** (Marshall) measures utility in numerical terms, while the **Ordinal Approach** (Hicks and Allen) arranges preferences in order of satisfaction without using numbers.
- The **Law of Diminishing Marginal Utility** explains that as a person consumes more units of a commodity, the extra satisfaction gained from each additional unit gradually decreases.
- There are certain **exceptions** to this law—such as collecting rare items, addictions, or pursuing hobbies—where utility may not diminish in the typical pattern.
- Consumer **Surplus** is the difference between the maximum price a consumer is willing to pay for a good and the actual price paid.
- According to the **Law of Equi-Marginal Utility**, a rational consumer allocates their income across various goods so that the marginal utility per rupee spent is equal for all of them.
- Indifference **curve analysis** assumes ordinal utility and shows combinations of goods that provide the consumer with equal satisfaction.
- The **Marginal Rate of Substitution (MRS)** expresses the rate at which a consumer is willing to give up one good in exchange for another while keeping total utility unchanged.
- Indifference **curves** slope downwards and are convex to the origin due to the diminishing MRS.
- Consumer **equilibrium** is reached where the budget line touches the highest attainable indifference curve, representing the maximum satisfaction a consumer can achieve given their income.

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## Unit III – Demand and Supply Analysis

**Structure**

**Overview**

1. Demand

1.1 Concept and Definition of Demand

1.2 Law of Underlying Assumptions

1.3 Situations Where the Law of Demand Does Not Apply

1.4 Elasticity of Demand – Categories and Methods of Measurement

2. Supply and Production

2.1 Concept and Definition of Supply

2.2 Law of Supply

2.3 Factors Affecting Production

2.4 Production Function and Its Meaning

2.5 Law of Variable Proportions

2.6 Law of Returns to Scale

2.7 Integration of Demand and Supply in Business Forecasting

## 1.1 Meaning and Definition of Demand

Demand refers to the quantity of a good or service that consumers are willing and able to purchase at various prices over a given period. It reflects not just the desire to buy, but also the financial capacity to pay.

**Definitions**

**Prof. Benham:** Demand for a good at a specific price is the quantity that will be purchased per unit of time at that price.

**Marshall:** The quantity demanded is the amount of a commodity that consumers are willing to buy at a particular price.

**Key Elements**

I. Desire to purchase.
II. Ability to pay.
III. Willingness to pay.
IV. Specified price and period.

## 1.2. Law of Demand

The **Law of Demand** explains the inverse relationship between a good's price and the quantity demanded, assuming all other factors remain constant (**ceteris paribus**).

**Statement:**

As Alfred Marshall put it, "The Law of Demand states that, other things being equal, a decrease in the price of a commodity leads to an increase in its demand, while an increase in price causes demand to fall."

**Demand Schedule**

| Price (₹) | Quantity Demanded (Units) |
|---|---|
| 10 | 50 |
| 20 | 40 |
| 30 | 30 |
| 40 | 20 |

| Price (₹) | Quantity Demanded (Units) |
|---|---|
| 50 | 10 |

**Demand Curve**

Graphically, the demand curve slopes downward from left to right, showing the inverse relationship between the price of a good and the quantity demanded.

**Assumptions of Law**

1. Consumer income remains constant.
2. Tastes and preferences are unchanged.
3. Prices of related goods remain the same.
4. No new substitutes are introduced.
5. No change in population.
6. Consumers act rationally.

## 1.3. Exceptions

1. **Giffen Goods:** These are a type of inferior good for which demand rises as the price increases. For instance, coarse rice among low-income households often exhibits this behavior.
2. **Veblen or Prestige Goods:** High-priced goods that confer status (e.g., diamonds, luxury cars).
3. **Expectations of Future Prices:** If consumers expect future price rises, they may buy more even at high prices.
4. **Ignorance Effect:** Consumers may not be aware of cheaper substitutes.
5. **Necessities:** Basic goods like medicines, salt, or milk—demand remains steady despite price changes.
6. **Speculative Markets:** People buy more in anticipation of further price rise.

## 1.4. Elasticity of Demand

Elasticity of demand measures the responsiveness of the quantity demanded of a good to changes in economic factors such as its price, consumer income, the prices of related goods, or promotional efforts. The key types of elasticity, along with their formulas, interpretations, methods of calculation, determining factors, and practical applications, are discussed below.

- **Elastic Demand (Ep > 1):** Small price change → large quantity change.
- **Inelastic Demand (Ep < 1):** Price change → small quantity change.
- **Unitary Elastic Demand (Ep = 1):** Equal proportionate change.
- **Perfectly Inelastic Demand (Ep = 0): Q**uantity doesn't respond to price

- **Perfectly Elastic Demand** (Ep = ∞): Any tiny price rise drops demand to zero)

**Determinants**

- ❖ Availability of substitutes (more substitutes → more elastic)
- ❖ Necessity vs luxury (necessities → inelastic)
- ❖ Share of income spent on good (large share → more elastic)
- ❖ Time period (longer run → more elastic)
- ❖ Definition of the market (broad goods → inelastic; narrow → elastic)
- ❖ Applications
- ❖ Pricing decisions (firms determine revenue effects of price changes)
- ❖ Tax incidence and welfare analysis

**Income Elasticity of Demand (Ey):**

**Income Elasticity of Demand** measures how the quantity demanded of a good changes in response to a change in consumer income. It is calculated as:

Ey=Percentage Change in IncomePercentage Change in Quantity Demanded

**Interpretation**

**Income Elastic (Ey**> 1): Luxury Goods

Income Inelastic (0 < Ey < 1): Necessity

Income Elasticity (Ey< 0): Inferior Goods

**Uses**

- Predict effects of economic growth/recession on demand for goods
- Product classification (luxury, necessity, inferior)
- Business planning and forecasting

2. **Cross Elasticity of Demand (Ec):**

**Cross Elasticity of Demand** measures how the quantity demanded of one good (X) responds to a change in the price of another good (Y). It is calculated as the percentage change in the quantity demanded of X divided by the percentage change in the price of Y. This concept helps determine whether two goods are substitutes or complements..

$$e_c = \frac{\Delta Q_X}{\Delta P_Y} \cdot \frac{P_Y}{Q_X}$$

Here,

Ec = cross elasticity of demand

ΔQx = changes in quantity of X

ΔPy = change in price of Y

Qx = initial quantity of X

Py = initial price of Y

**Interpretation**

Ec > 0 → **Substitutes** (price rise in Y raises demand for X)

Ec < 0 → **Complements** (price rise in Y lowers demand for X)

Ec = 0 → **Independent goods**

**Uses**

- ❖ Product positioning and competitive strategy
- ❖ Anticipating effects of competitor pricing
- ❖ Policy (e.g., taxes on complementary goods)

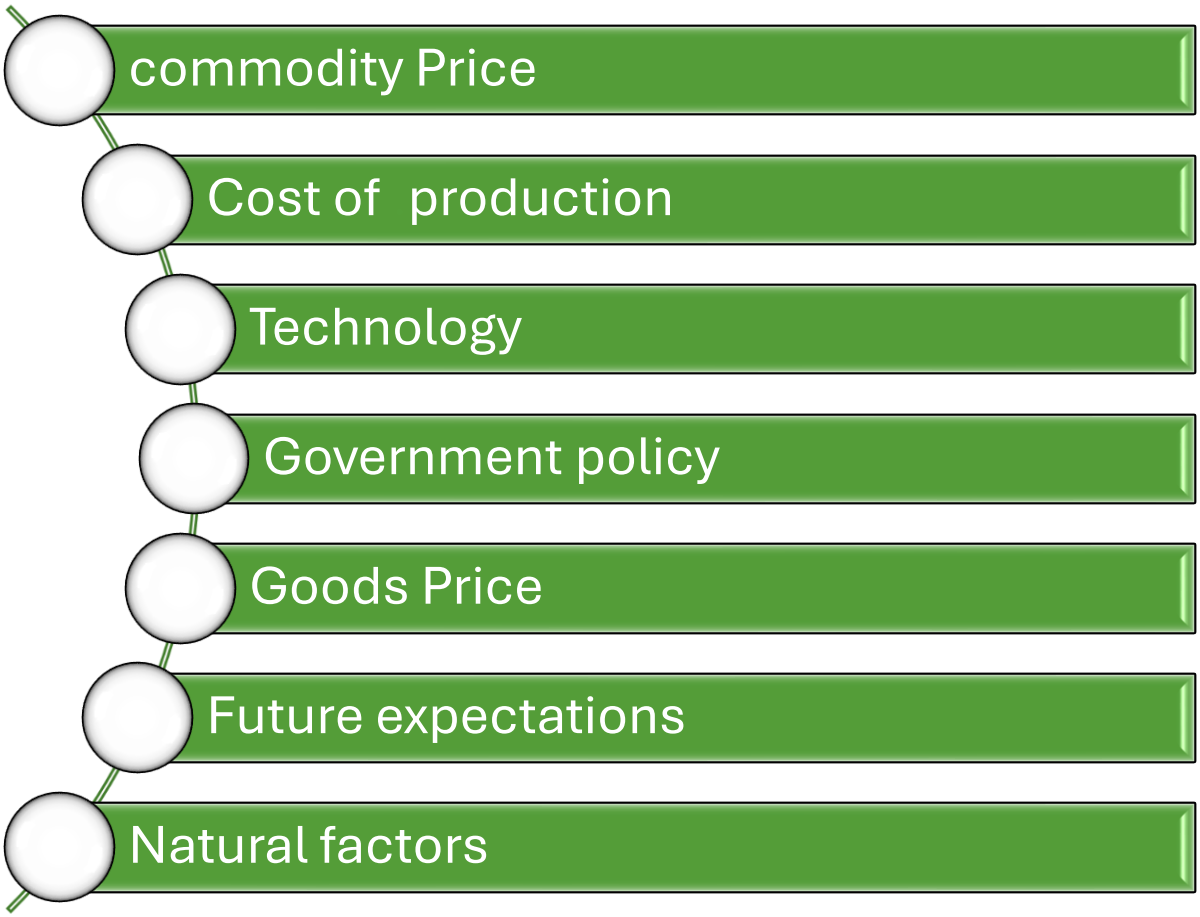
## 2.1 Supply – Meaning and Definition

**Supply** refers to the quantity of a good or service that producers are willing and able to sell at different prices over a given period.

**Definition:**

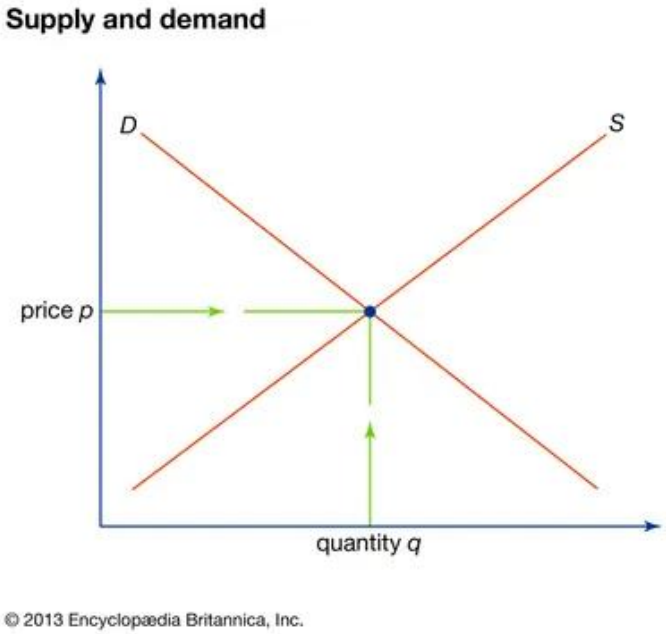
As Prof. Thomas states, "Supply is the quantity of a commodity that a producer is prepared to offer for sale in the market at various prices during a specific period."

**Factors Determining the Supply**




A **supply curve** is a graphical illustration showing the relationship between the price of a good and the quantity that producers are willing and able to supply. In the graph, the price is shown on the vertical axis, and the quantity supplied on the horizontal axis.

Typically, the supply curve slopes **upward from left to right**, reflecting a direct relationship: as the price of a commodity increases, the quantity supplied also rises.

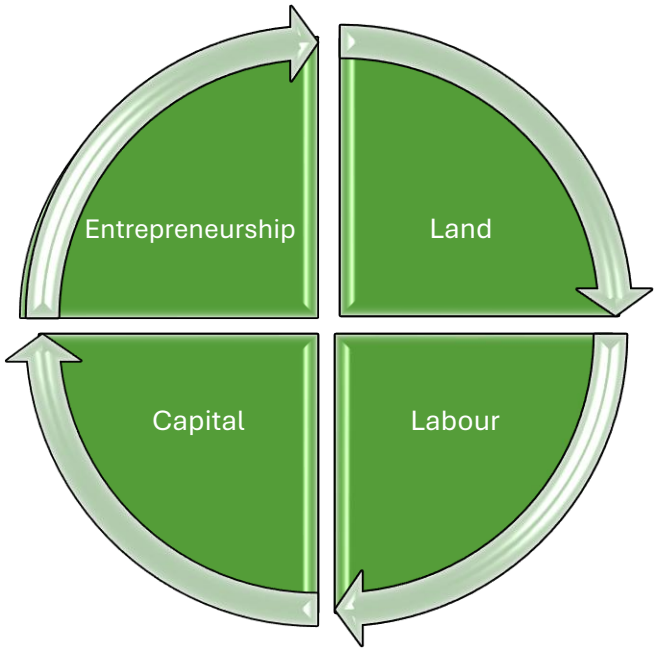



**Assumptions**

1. Technology remains constant.
2. Cost of factors unchanged.
3. No change in government policy.
4. Prices of other goods remain constant.
5. No change in climate or weather.

## 2.3 Factors of Production

Production requires **inputs** or **resources**, called **factors of production**. They are:



1. **Land:** All natural resources used in production (soil, minerals, forests, etc.).
2. **Labour:** Human effort, physical or mental, used in production.
3. **Capital:** Man-made resources like tools, machinery, and buildings.

Modern economists also include Knowledge and Technology as additional factors.

## 2.4 Production Function

A Production Function expresses the technical relationship between inputs and output.

$$Q = f(L, K)$$

Where:

- $Q$= Output
- $L$= Labour input
- $K$= Capital input

It shows how changes in input quantities affect output levels, keeping technology constant.

**Types**

### 1. Short-Run and Long-Run Production Functions

1. **Short-Run Production Function:** At least one factor of production remains fixed.
2. **Long-Run Production Function:** All factors of production can be varied.

### 2.5 Law of Variable Proportions (Law of Diminishing Returns)

**Statement:**

"The law of variable proportions states that as additional units of a variable input are combined with fixed inputs, total output initially increases at an increasing rate, then at a decreasing rate, and may eventually decline."

**Meaning:**

The **Law of Variable Proportions** explains how output changes when the quantity of one input is altered while keeping other inputs constant. Also known as the **Law of Proportionality**, it is a key concept in production theory. This law examines the effect on production when a variable input is increased or decreased, with all other factors fixed. It is mainly relevant in the **short run**, where some inputs cannot be adjusted immediately.

In simpler terms, when the quantity of a single input changes while other inputs remain unchanged, the ratio between variable and fixed inputs shifts. For example, consider a farmer growing wheat using land (fixed factor) and labour (variable factor). If the farmer has 5 hectares of land and employs only one labourer, the land-to-labour ratio is 5:1. Adding a second labourer changes the ratio to 5:2. As more labourers are employed, output increases, but not at a uniform

rate. This variation in output due to changing proportions of inputs illustrates the Law of Variable Proportions.

**Definitions by Economists**

- **Benham:** "When the quantity of one input in a combination of factors is increased, after a certain point, both its marginal and average product begin to decline."
- **Samuelson:** "If some inputs are increased while others are kept fixed, total output initially rises, but beyond a certain point, the extra output from additional units of the variable input starts to diminish."
- **Leftwich:** "The law of variable proportions states that when the quantity of one input is increased in equal steps while other inputs remain constant, total output increases, but the additional output from each extra unit eventually decreases."

**Assumptions**

**Constant Technology**

The technology used in production remains unchanged. Any technological improvement would shift the production function upward and alter results.

**Variable Factor Proportions**

The law assumes that inputs can be combined in varying proportions. If the factors must always be used in fixed ratios, the law would not hold true.

**Homogeneous Units of Variable Factor**

Each unit of variable input (e.g., labour) is identical in efficiency, skill, and quality.

**Short-Run Operation**

The **Law of Variable Proportions** is applicable in the short run, where some inputs can be adjusted while at least one input remains fixed.

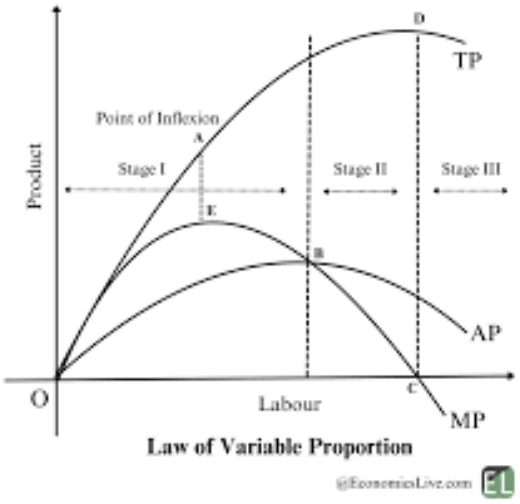
**Explanation of the Law:**

Consider agriculture, where land acts as the fixed factor and labour is the variable factor used to grow crops. As more labourers are employed on the same land, total output initially rises at an increasing rate because the fixed land is utilized more efficiently. However, after a certain point, adding additional labour leads to smaller increments in output, and eventually, total output may even decline. This pattern—changes in output due to varying a single input while others remain constant—demonstrates the Law of Variable Proportions.

**Phases of Law**

| Stage | Description | Output Behaviour |
|---|---|---|
| I | Increasing Returns | TP rises at increasing rate, MP rises |
| II | Diminishing Returns | TP rises at decreasing rate, MP falls |
| III | Negative Returns | TP declines, MP becomes negative |

**Diagrammatic Explanation**

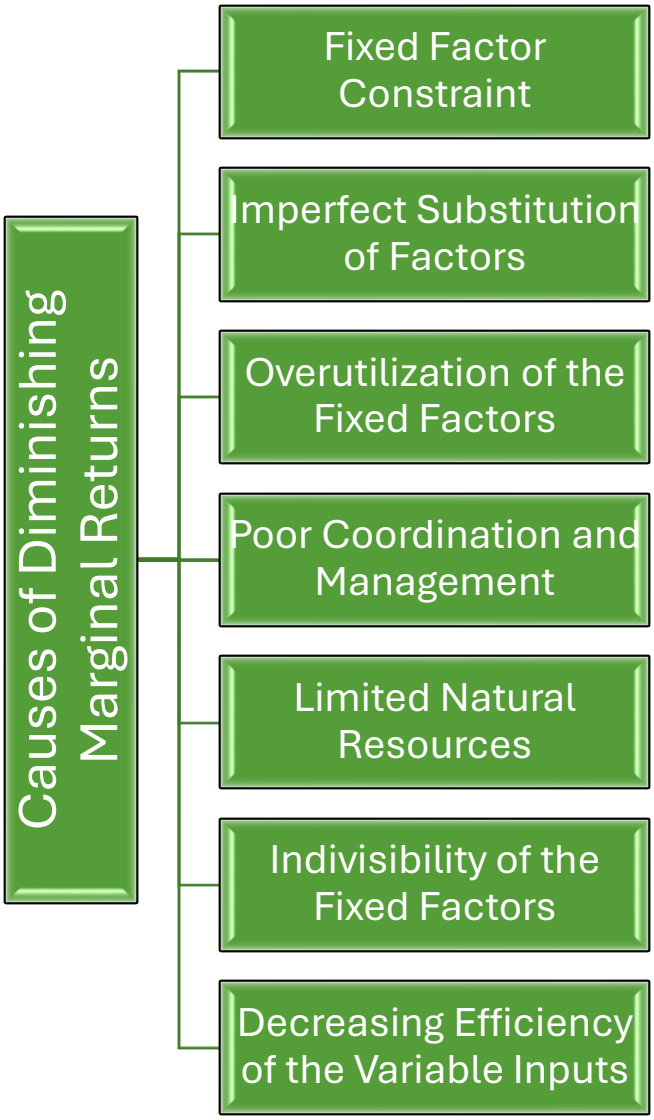



- The **Total Product (TP) curve** initially rises rapidly, then increases at a slower pace, and may eventually decline.
- The **Marginal Product (MP) curve** first rises, reaches a maximum, then starts to fall, and can even turn negative.

Causes for Diminishing Returns

The **Law of Diminishing Returns** states that when additional units of a variable input (e.g., labour) are combined with fixed inputs (e.g., land or machinery), total output initially rises, but after a certain point, it increases at a decreasing rate.

**Main Causes of Diminishing Returns:**




**Imperfect Substitution of Factors**

In production, one factor cannot always perfectly replace another. For instance, adding more labour cannot compensate for the limited availability of land or capital, resulting in declining efficiency.

**Overutilization of the Fixed Factors**

When additional variable inputs are combined with the same fixed resources, the fixed factors become overutilized, leading to inefficiency, wear and tear, and reduced productivity.

**Poor Coordination and Management**

Increasing the number of workers or inputs beyond an optimal level makes it difficult to coordinate and supervise activities effectively, leading to reduced output per unit.

**Limited Natural Resources**

In industries like agriculture, natural resources such as soil fertility, rainfall, or sunlight are limited. Excessive use of these resources results in declining productivity.

**Indivisibility of Fixed Factors**

Some fixed inputs, like machinery or buildings, cannot be divided or expanded proportionately. When large variable inputs are applied to them, efficiency decreases.

**Decreasing Efficiency of the Variable Inputs**

As more units of a variable input are added, each additional unit has less of the fixed input to work with than the previous units, causing marginal productivity to decline.

Diminishing returns occur because fixed resources eventually limit the efficiency and effectiveness of additional variable inputs. Hence, after a certain stage, total output will start increasing at a diminishing rate.

**Importance**

The Law of Diminishing Returns holds significance in both economic theory and practical decision-making. Its importance can be highlighted as follows:

**Theory of Production: Foundation**

The Law of Diminishing Returns forms the basis of production theory by showing how output changes when one input is increased while others are kept constant. It also helps in identifying the different stages of production: increasing returns, diminishing returns, and negative returns.

**Efficient Use of Resources**

It guides producers to utilize resources efficiently. The law shows that there is an optimum level of input use beyond which additional inputs lead to lower productivity. This helps firms avoid waste of resources.

**Helps in Determining the Optimum Combination of Inputs**

The law aids in deciding the most profitable combination of fixed and variable factors to achieve maximum output at minimum cost.

**Basis for Agricultural Analysis**

The law is especially relevant in agriculture, where land remains fixed. It shows why output cannot rise indefinitely by simply adding more labour and capital to a limited plot of land.

**Guides Industrial Expansion**

It helps in determining the point at which adding more labour or machinery in an industrial unit becomes unprofitable, encouraging firms to expand capacity only when necessary.

**Determines Factor Demand**

The decline in marginal productivity guides producers in deciding how much of each factor, like labour or capital, should be employed.

**Influence on Prices and Costs**

The law explains why cost of production rises after a certain level of output — because additional units of variable factors yield smaller returns. Hence, it forms the basis of the law of increasing cost.

**Policy Implications**

For governments and planners, the law highlights the importance of technological improvements, better agricultural methods, and industrial diversification to counteract declining productivity.

The Law of Diminishing Returns is important because it shows how output reacts to changes in input levels, assists in the efficient allocation of resources, affects cost patterns, and provides valuable insights for business planning and economic policy-making.

**10. Law of Return to Scale**

**Meaning**

The **Law of Returns to Scale** explains how output changes when all inputs in the production process are increased proportionally in the long run. Unlike the **Law of Variable Proportions**, which applies in the short run with only one variable input, this law considers scenarios where all factors—land, labour, and capital—can be adjusted.

In simple terms, it studies how total output responds when the scale of production is expanded by increasing all inputs simultaneously in a fixed ratio.

**Definition**

**Koutsoyiannis**: "Returns to scale refer to the changes in output as all factors change by the same proportion."

**Marshall:** "When all factors of production are increased in a given proportion, the resulting output may rise in the same proportion, in a greater proportion, or in a smaller proportion."

**Types of Returns to Scale**

The Law of Returns to Scale can be classified into three categories**:**

**1. Increasing Returns to Scale**

This happens when all inputs are increased proportionally, and the resulting output grows by an even larger proportion.

**Example** If all inputs are doubled and the output more than doubles, it illustrates this case.

Causes:

- Better division of labour and increased specialization
- Improved coordination and efficiency in production
- Economies of scale, leading to lower average costs with larger production

2. **Constant Returns to Scale**

**Constant Returns to Scale** occur when all inputs are increased by a certain proportion and output increases by the same proportion.

**Example** If all inputs are doubled and output also doubles.

**Causes:** The benefits of large-scale production are offset by challenges such as coordination difficulties.

**Result:** Productivity remains unchanged, and the average cost per unit stays constant.

**3.Decreasing (or Diminishing) Returns to Scale**

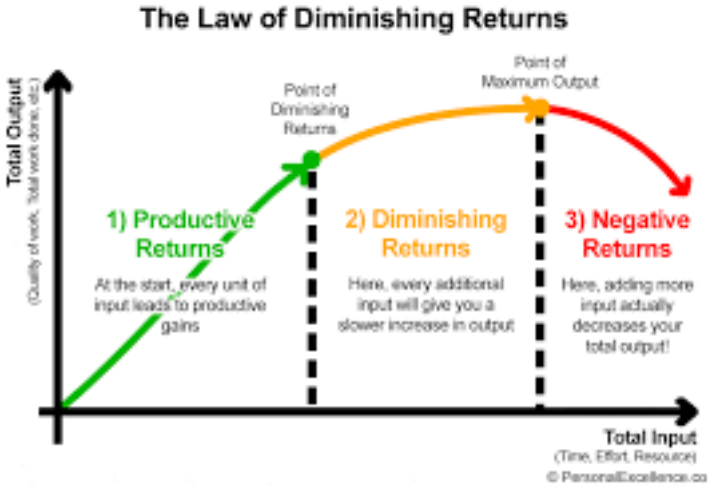
**Decreasing Returns to Scale** occur when all inputs are increased by a certain proportion, but output rises by a smaller proportion.

**Example** If all inputs are doubled and output increases by less than twice the original amount.

**Causes:**

- Managerial inefficiency and communication problems
- Challenges in coordination and supervision
- Diseconomies of scale (rising average costs with higher production)

**Diagrammatic Representation**




If we plot the proportionate change in inputs and outputs on a graph:

The curve first rises sharply (increasing returns),

Then becomes linear (constant returns), and

Finally flattens (diminishing returns).

**Causes of Different Returns to Scale**

**Economies of Scale**

As production grows, internal and external economies—like bulk purchasing, improved technology, and skilled labour—help lower costs and enhance output efficiency.

**Managerial Efficiency**

Better supervision, coordination, and organization lead to higher productivity in the initial stages, but inefficiencies may arise as the firm grows too large.

**Fixed Factors and Indivisibilities**

Some factors (like machinery or management) cannot be perfectly scaled up, leading to inefficiencies at very large scales.

**Technical Factors**

Use of advanced machinery and modern technology may initially lead to increasing returns, but later diminishing returns set in due to operational limits.

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## 2.7 Integration of Demand and Supply in Business Forecasting

Demand and supply are two basic forces of the market. **Demand** shows how much consumers are willing to buy, while **supply** shows how much producers are ready to sell. In business forecasting, integrating (combining) demand and supply helps companies plan production, pricing, and inventory in a better way. When both are balanced, businesses can avoid losses and meet customer needs effectively.

**1. Understanding Market Demand**

Businesses study demand to know what customers want, how much they want, and at what price. Factors like income, taste, population, season, and prices of related goods affect demand.

**Example**

Demand for **air conditioners in India** increases during summer months. Companies like **Voltas** and **Blue Star** forecast higher demand based on weather conditions and consumer income levels.

**2. Analyzing Supply Capabilities**

Supply analysis helps businesses understand how much they can produce and deliver. It depends on factors like cost of raw materials, availability of labor, technology, and government policies.

**Example**

A rice mill in **Punjab** considers the availability of paddy, labor costs, and electricity before deciding how much rice it can supply to the market.

**3. Matching Demand with Supply**

By integrating demand and supply data, businesses try to match production with expected sales. This helps avoid overproduction or shortage.

**Example**

**Amul** forecasts demand for milk and dairy products and plans milk collection from farmers accordingly. This balance ensures there is neither wastage of milk nor shortage in the market.

**4. Price Forecasting and Stability**

When demand is higher than supply, prices rise. When supply is more than demand, prices fall. Businesses use this relationship to forecast prices and plan their strategies.

**Example**

During festivals like **Diwali**, demand for sweets increases. Sweet shops increase supply in advance and sometimes raise prices slightly due to high demand.

**5. Inventory and Production Planning**

Integrated demand and supply forecasting helps businesses manage inventory efficiently. It reduces storage costs and prevents losses due to unsold goods.

**Example**

Retail chains like **Reliance Smart** forecast demand for daily-use products and arrange supply accordingly to ensure shelves are always stocked without excess inventory.

**6. Managing Seasonal and Uncertain Markets**

Some products have seasonal demand. Integrating demand and supply helps businesses prepare for changes in the market.

**Example**

Umbrella manufacturers increase supply before the **monsoon season** after forecasting high demand across Indian cities.

## CHECK YOUR PROGRESS

### PART A: MULTIPLE CHOICE QUESTIONS

**1.** Demand in economics means:

- a) Desire to buy a commodity
- b) Ability to pay for a commodity
- c) Willingness and ability to purchase at various prices
- d) Need for a commodity

**2.** The Law of Demand shows relationship between:

- a) Income and quantity demanded
- b) Price and quantity demanded
- c) Price and quantity supplied
- d) Income and price

**3.** When price of a good rises and demand also rises, it is called:

- a) Normal good
- b) Giffen good
- c) Complementary good
- d) Substitute good

**4.** If Ep = 0.5, demand is said to be:

- a) Elastic
- b) Inelastic
- c) Unitary elastic
- d) Perfectly elastic

**5.** Luxury goods have income elasticity:

- a) Equal to zero
- b) Less than zero
- c) Greater than one
- d) Between zero and one

**6.** If two goods are substitutes, cross elasticity will be:

- a) Positive
- b) Negative
- c) Zero
- d) Infinite

**7.** The supply curve slopes:

- a) Downward from left to right

- b) Upward from left to right
- c) Parallel to X-axis
- d) Parallel to Y-axis

**8.** In the short run, which factor remains fixed:

- a) Labour
- b) Raw material
- c) Capital
- d) All factors vary

**9.** The Law of Variable Proportions applies in:

- a) Long run
- b) Short run
- c) Both periods
- d) Neither period

**10.** When all inputs are doubled and output triples, it shows:

- a) Increasing returns to scale
- b) Constant returns to scale
- c) Decreasing returns to scale
- d) Negative returns

**PART B: FILL IN THE BLANKS (1 mark each)**

**1.** The responsiveness of quantity demanded to price change is called _____.

**2.** When percentage change in quantity demanded equals percentage change in price, elasticity is _____.

**3.** Goods for which demand falls when income rises are called _____ goods.

**4.** The technical relationship between inputs and output is called _____ function.

**5.** In the _____ stage of production, marginal product becomes negative.

**6.** Better division of labour leads to _____ returns to scale.

**7.** Amul balances milk collection with expected sales through _____ forecasting.

**8.** When demand exceeds supply, market price tends to _____.

**ANSWER KEY**

**Part A:**

1-c, 2-b, 3-b, 4-b, 5-c, 6-a, 7-b, 8-c, 9-b, 10-a

**Part B:**

1. Price elasticity of demand
2. Unitary (or equal to one)
3. Inferior
4. Production
5. Third (or negative returns)
6. Increasing
7. Demand-supply
8. Rise (or increase)

**TRY IT YOURSELF**

**Activity 1:** Visit a local vegetable market. Observe how prices change for tomatoes or onions across different seasons. Prepare a brief report explaining which elasticity concepts apply.

**Activity 2:** Interview a small business owner about how they decide production quantities. Map their process to the demand-supply integration framework discussed in this unit.

## Unit – IV: Cost and Revenue Analysis

**Structure**



**Overview**

In the business world, effective decision-making relies on a clear understanding of costs and revenues. Whether a firm is producing goods or offering services, it needs to carefully manage its costs to stay competitive and monitor revenues to maintain profitability. This unit explores the various types of costs, their behavior in the short run and long run, and the fundamental revenue concepts in economics. It also introduces the **break-even point**, an important tool for determining when a business begins to earn profits. These concepts are essential not only for grasping economic theory but also for making informed managerial decisions

### 1. Meaning and Definition of Cost

**Cost** refers to the total monetary expenditure a firm incurs in producing and selling its goods or services. It represents the value of resources such as labour, materials, capital, and land used in production.

In economics, cost includes not only the actual money spent but also the **opportunity cost**, which is the value of the next best alternative foregone. Costs are generally divided into **explicit** and **implicit** costs. **Explicit costs** are actual cash payments made for resources, while **implicit costs** represent the value of resources owned by the producer that are employed in production.

**According to Oxford Dictionary of Business:**

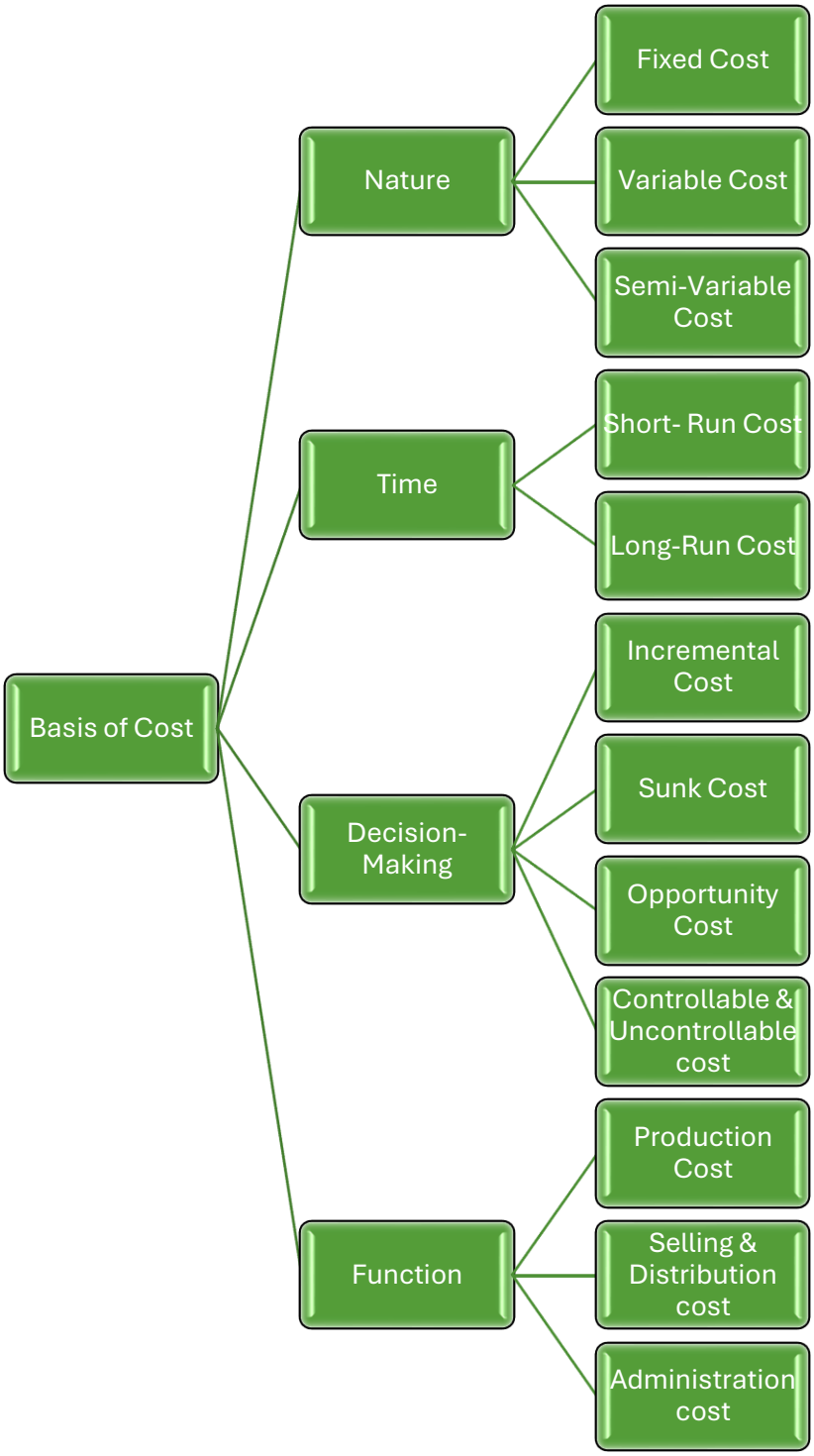
“Cost is the amount of expenditure, actual or notional, incurred on or attributable to a specified thing or activity.”

**2. Types of Costs**

**Why Cost Classification is Important?**

- Helps in pricing decisions.
- Assists in profitability analysis.
- Guides budgeting and cost control.
- Aids in choosing between alternative production methods.

Costs can be classified on various bases as follows:




**a) According to Nature**

1. **Fixed Cost** – Costs which remain constant irrelevant of output (e.g., rent, insurance).
2. **2. Variable Cost:** These are costs that vary directly with the level of output, such as expenses on raw materials and labour.
3. **Semi-variable Cost** – Costs containing both fixed & variable elements (e.g., telephone charges).

**b) According to Time**

1. **Short-Run Costs** – Some factors are fixed and others variable.
2. **Long-Run Costs** – All factors become variable; firms can alter their scale of operation.

**c) According to Decision-Making**

1. **Incremental Cost** – Additional cost increse in activity or decision.
2. **Sunk Cost** – Past costs that cannot be recovered.
3. **Opportunity Cost** – Benefit forgone by choosing one alternative over another.
4. **Controllable and Uncontrollable Costs** – Costs that can or cannot be influenced by management decisions.

**d) According to Function**

1. **Production Cost** – Costs of manufacturing.
2. **Selling & Distribution Cost** – Related to marketing and delivery.
3. **Administrative Cost** – Related to managerial and office functions.
4. **Short-Run and Long-Run Cost Behaviour**

**Meaning of Short-run**

In the **short run**, at least one factor of production, such as capital or plant size, remains fixed, while other inputs like labour and raw materials can be varied. Firms can increase output by employing more variable inputs, but the overall scale of production cannot be altered.

Components of Short-Run Costs

- **Fixed Costs (TFC):** Costs that remain constant regardless of the level of output.
- **Variable Costs (TVC):** Costs that change directly with the level of output.
- **Total Costs (TC):** The sum of fixed and variable costs:

TC=TFC+TVCTC = TFC + TVCTC=TFC+TVC

Cost Relationships in the Short Run

- **Average Fixed Cost (AFC):** Calculated as AFC=TFCQAFC = \frac{TFC}{Q}AFC=QTFC; it declines as output increases.
- Average Variable Cost (AVC) = $\frac{TVC}{Q}$– Typically U-shaped.
- Average Total Cost (ATC) = $\frac{TC}{Q}$or $AFC + AVC$– Also U-shaped.
- Marginal Cost (MC) = $\frac{\Delta TC}{\Delta Q}$– Falls initially, then rises.

**a) Short-Run Cost Behaviour**

| Output (Q) | TFC | TVC | TC | AFC | AVC | ATC | MC |
|---|---|---|---|---|---|---|---|
| 0 | 100 | 0 | 100 | - | - | - | - |

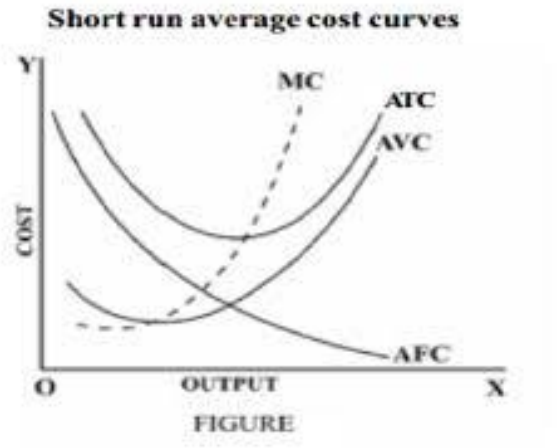
| Output (Q) | TFC | TVC | TC | AFC | AVC | ATC | MC |
|---|---|---|---|---|---|---|---|
| 1 | 100 | 50 | 150 | 100 | 50 | 150 | 50 |
| 2 | 100 | 90 | 190 | 50 | 45 | 95 | 40 |
| 3 | 100 | 120 | 220 | 33.3 | 40 | 73.3 | 30 |
| 4 | 100 | 140 | 240 | 25 | 35 | 60 | 20 |
| 5 | 100 | 165 | 265 | 20 | 33 | 53 | 25 |
| 6 | 100 | 200 | 300 | 16.7 | 33.3 | 50 | 35 |
| 7 | 100 | 250 | 350 | 14.3 | 35.7 | 50 | 50 |

1. Total Fixed Cost (TFC): Remains constant irrespective of output.
2. Total Variable Cost (TVC): Increases with increase in output.
3. Total Cost (TC): The sum of fixed & variable costs (TC = TFC + TVC).

**Average & Marginal Costs:**

- Average  Fixed Cost (AFC) = TFC / Output
- Average Variable Cost (AVC) = TVC / Output

**Diagram**




AFC Curve: Downward-sloping, never touches the horizontal axis.

AVC & ATC Curves: U-shaped because of law of variable proportion.

MC Curve: Intersects AVC and ATC at their minimum points.

The short-run cost curves are generally U-shaped because law of variable proportions.

**Reasons for U-shape of AVC & ATC**

Decreasing Phase: Increasing returns to the variable factor lower per-unit cost.

Increasing Phase:

**Long-Run Cost Behaviour**

**Meaning of Long-run**

In the **long run**, all factors of production are variable. Firms can modify plant size, adopt new technologies, and restructure their production processes. Because all inputs can be adjusted, there are no fixed costs in the long run—every cost is treated as variable.

**Long-run Total Cost (LRTC)**

TC incurred when a firm adjusts all inputs to produce a given level of output.

**Long-run Average Cost (LAC)**

- Also called the Planning Curve or Envelope Curve.
- Shows the minimum average cost at which any level of output can be produced provided all inputs are variable.
- Derived from various short-run average cost curves (SACs).

**Diagram Explanation:**

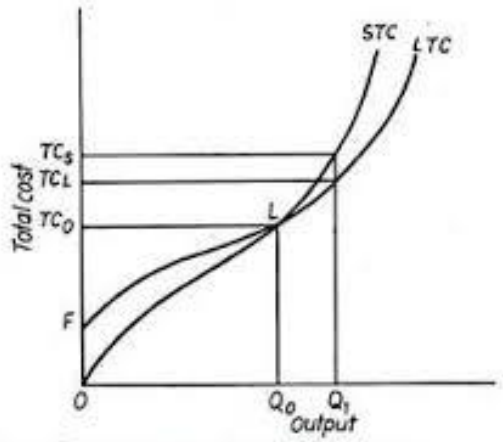



**Figure 14.10 Long-run and short-run total cost curves**

- The LAC curve is typically U-shaped.
- Each SAC is tangent to the LAC at the optimal output for that plant size.
- LAC is called an envelope curve because it "wraps around" the SAC curves.
- The long-run cost curve is derived as an envelope of short-run cost curves and is also U-shaped due to economies and diseconomies of scale.

**Economies of Scale (Reasons for Falling LAC in Initial Phase)**

1. **Technical Economies –** Specialisation of machinery and processes**.**
2. **Managerial Economies –** Specialised management reduces inefficiency**.**
3. **Purchasing Economies –** Bulk buying of raw materials reduces costs**.**

4. **Financial Economies –** Easier access to loans at lower interest rates**.**
5. **Marketing Economies –** Spreading marketing costs over larger output**.**

**Diseconomies of Scale (Reasons for Rising LAC Beyond a Point)**

1. **Managerial Inefficiency –** Difficulty in coordination as size grows.
2. **Communication Problems –** Slower decision-making in large organisations**.**
3. **Labour Problems –** Lower morale and productivity in very large firms**.**
4. **Supply Constraints –** Scarcity of certain inputs at high production levels**.**

**Table – Economies vs Diseconomies of Scale**

| **Economies of Scale** | **Diseconomies of Scale** |
|---|---|
| Technical specialisation | Managerial complexity |
| Bulk purchasing | Communication breakdown |
| Better financing | Declining worker motivation |
| Specialised managers | Supply shortages |

**4. Revenue Concepts**

In economics, revenue is the income a firm generates from the sale of its goods or services. It is calculated by multiplying the price per unit by the quantity sold.

$$\text{Revenue} = \text{Price} \times \text{Quantity}$$

**Types of Revenue**

1. **(TR)**
   - Total income from sales of a given quantity of goods.
   - Formula: $TR = P \times Q$
   - Example Selling 100 units at ₹50 each → TR = ₹5,000
2. **Average Revenue (AR)**
   - Revenue per unit sold.
   - Formula: $AR = \frac{TR}{Q}$
   - Under perfect competition, AR = Price.
3. **(MR)**
   - Formula:

$$MR = \frac{\Delta TR}{\Delta Q}$$

## Break-Even Analysis

**Break-Even Analysis** is a key tool in cost–volume–profit (CVP) analysis. It studies the relationship between a firm's costs, output, and profits, and identifies the level of production or sales at which **total revenue equals total cost**—meaning the firm neither makes a profit nor incurs a loss. This level is called the **Break-Even Point (BEP)**.

At the BEP, a business covers all its costs, so total revenue matches total cost, resulting in **zero profit** and **zero loss**.

**Mathematical Condition:**

Break-even point occurs when: Total Cost (TC) = Total Revenue (TR)\text{Break-even point occurs when: Total Cost (TC) = Total Revenue (TR)}Break-even point occurs when: Total Cost (TC) = Total Revenue (TR)

At this level, all fixed and variable costs are recovered. Any output beyond the BEP generates profit, while producing below it leads to a loss.

---

## Definitions

- **CIMA:** "Break-even point is that level of activity at which total cost equals total sales revenue."
- **Prof. Howard and Brown:** "Break-even analysis is a system of analysis that determines the level of sales at which a company neither earns profit nor incurs loss."

---

## Objectives of Break-Even Analysis

- To determine the minimum output required to avoid losses.
- To assist in profit planning and managerial decision-making.
- To study the impact of changes in cost, price, or sales volume on profits.
- To assess a firm's **margin of safety**.
- To serve as a tool for managerial control and budgeting.

---

## Assumptions of Break-Even Analysis

- Selling price per unit remains constant.
- Fixed costs do not change within the relevant production range.
- Variable cost per unit remains constant.
- Output equals sales, meaning no inventory changes.

- Analysis applies to a single product or a fixed sales mix.
- Production efficiency and technology remain unchanged.

---

## Break-Even Point (BEP)

The **Break-Even Point** is the sales level at which total revenue equals total cost. It can be expressed in **units sold**, **sales value**, or as a **percentage of production capacity**.

**Formulas:**

- **Break-Even Point (Units):**

BEP (units)=Fixed CostSelling Price per Unit – Variable Cost per Unit\text{BEP (units)} = \frac{\text{Fixed Cost}}{\text{Selling Price per Unit – Variable Cost per Unit}}BEP (units)=Selling Price per Unit – Variable Cost per UnitFixed Cost

- **Break-Even Point (Sales Value):**

BEP (₹)=Fixed CostContribution Margin Ratio\text{BEP (₹)} = \frac{\text{Fixed Cost}}{\text{Contribution Margin Ratio}}BEP (₹)=Contribution Margin RatioFixed Cost

Where,

Contribution Margin Ratio (C/S Ratio)=ContributionSales×100\text{Contribution Margin Ratio (C/S Ratio)} = \frac{\text{Contribution}}{\text{Sales}} \times 100Contribution Margin Ratio (C/S Ratio)=SalesContribution×100

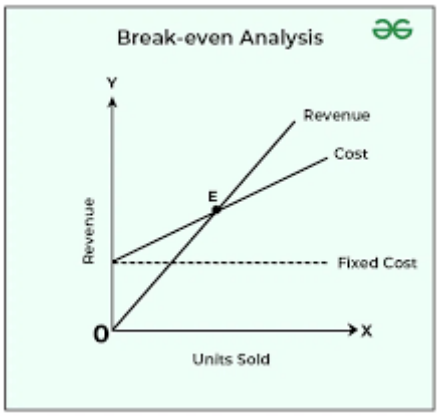
Contribution (per unit)=Selling Price per Unit – Variable Cost per Unit\text{Contribution (per unit)} = \text{Selling Price per Unit – Variable Cost per Unit}Contribution (per unit)=Selling Price per Unit – Variable Cost per UnitThus, the firm needs to sell **2,000 units** to reach the break-even point. Selling more than 2,000 units results in **profit**, while selling less leads to a **loss**.

**Graphical Representation**

## Break-Even Chart

A **break-even chart** visually represents the relationship between costs, revenue, and output. It includes:

- **Total Cost Line:** Begins at the level of fixed costs and rises as output increases.
- **Total Revenue Line:** Starts from the origin and rises with sales.
- **Break-Even Point:** The point where the total cost line and total revenue line intersect, indicating the output level at which the firm neither earns a profit nor incurs a loss.




**Uses and Importance of BEA**

1. **Profit Planning:** Assists management in determining the sales volume needed to achieve a targeted profit.
2. **Cost Control:** Helps evaluate how fixed and variable costs affect overall profitability.
3. **Decision-Making:** Aids in pricing, make-or-buy decisions, and determining production levels.
4. **Budgetary Control:** Helps in preparing flexible budgets**.**
5. **Evaluation of Alternatives:** Compares profitability under different cost and price conditions.

**Advantages**

1. Simple to understand and apply.
2. Provides clear insight into the cost–volume–profit relationship.
3. Useful for forecasting profits at different sales levels.
4. Assists in managerial decision-making and performance evaluation.
5. Acts as a basis for setting prices and controlling costs.

**Limitations**

1. Assumes linear relationships between cost, revenue, and volume — not realistic in practice.
2. Ignores changes in price levels, production efficiency, and technology.
3. Not suitable for multi-product firms with changing sales mix.
4. Difficult to segregate costs into fixed and variable categories accurately.
5. Assumes all produced goods are sold — ignores stock changes.

**Summary**

- **Break-even analysis** is a component of **cost–volume–profit (CVP) analysis**.

- □ It determines the level of output at which **total cost equals total revenue**, resulting in neither profit nor loss.
- 
- BEP = Fixed Cost / (Selling Price – Variable Cost).
- Above BEP → Profit, below BEP → Loss.
- It is a useful tool for decision-making, cost control, and budgeting but should be used with caution due to its assumptions.

**6. Limitations of Cost and Revenue Analysis**

1. Difficulty in measuring implicit and opportunity costs.
2. The assumption of perfect competition rarely exists.
3. Static analysis – ignores dynamic business conditions.
4. Assumes rational behaviour of producers and consumers.
5. Data limitations affect accuracy and reliability.

**Check Your Progress:**

1. Define cost and explain its components.
2. Distinguish between fixed & variable costs.
3. Explain the behaviour of short-run cost curves.
4. What are the differences between short-run and long-run costs?
5. Define total, average, and marginal revenue.
6. What is break-even analysis? Write its formula.
7. List out any three limitations of break-even analysis.
8. Define economies and diseconomies of scale

**7 .Use of Cost and Revenue Analysis in Managerial Decision-Making**

Cost and revenue analysis is an important tool for managers while making business decisions. **Cost** means the expenses incurred in producing goods or services, and **revenue** means the income earned from selling them. By studying both cost and revenue, managers can decide how much to produce, what price to charge, and how to earn maximum profit.

**1.Decision about Production Level**

Managers use cost and revenue analysis to decide the right level of production where profit is highest.

**Indian Example**

A biscuit manufacturing unit in **India** calculates the cost of producing each packet and the revenue earned from selling it. If producing 1,000 packets gives higher profit than producing 800 or 1,200 packets, the manager will choose 1,000 packets as the best production level.

**3.Pricing Decisions**

Cost and revenue analysis helps managers fix prices that cover costs and provide reasonable profit.

**Indian Example**

A **local restaurant in Mumbai** studies food costs, rent, and staff salaries before deciding menu prices. The manager ensures prices are high enough to earn profit but affordable for customers.

**4.Make or Buy Decisions**

Managers often face the decision of whether to produce a product in-house or buy it from outside suppliers. Cost analysis helps in choosing the cheaper option.

**Indian Example**

An **Indian automobile company** may decide whether to manufacture car seats itself or purchase them from another supplier. If buying is cheaper than producing, the company will prefer buying.

**4.Profit Planning and Forecasting**

Revenue analysis helps managers estimate future income, while cost analysis helps estimate future expenses. Together, they help in profit planning.

**Indian Example**

An **Indian startup** forecasts expected sales revenue and compares it with estimated costs before launching a new app or service.

**6.Expansion and Investment Decisions**

Before expanding a business, managers analyze whether additional revenue will be more than the additional cost.

**Indian Example** A **retail store in Bengaluru** analyzes expected revenue from opening a new branch and compares it with costs like rent, staff, and inventory before taking the decision.

**6. Cost Control and Efficiency**

By regularly analyzing costs, managers can identify unnecessary expenses and reduce them.

**Indian Example**

A **manufacturing company in Gujarat** may switch to energy-efficient machines after analyzing that electricity costs are too high, which helps increase profit.

**Let Us Sum Up**

- Cost represents the amount spent to produce goods or provide services.
- Costs may be fixed, variable, semi-variable, sunk, and opportunity.
- Break-even analysis identifies no profit and no loss point.
- Despite its utility, cost & revenue analysis has limitations due to assumptions and market variations.

**Glossary**

- **Cost:** Total expenditure incurred in production.
- **Fixed Cost:** Cost that not varies with output.
- **Variable Cost:** Cost that changes with production level.
- **Revenue:** Income earned out of sale of the goods & services.
- **Economies of Scale:** Cost advantages from increased production.
- **Diseconomies of Scale:** Rising costs from over-expansion.

**Solutions to Check Your Progress**

1. Cost is the total expenditure on production, including explicit and implicit expenses.
2. Fixed costs remain constant; variable costs change with output.
3. Short-run costs show U-shaped curves due to variable proportions.
4. Long-run costs allow adjustment of all inputs.
5. TR = Price × Quantity; AR = TR/Output; MR = ΔTR/ΔQ.
6. BEP = Fixed Cost / (Selling Price – Variable Cost).
7. Ignores external factors and assumes constant price and cost.
8. Economies of scale reduce cost per unit; diseconomies increase it.

**Suggested Reading**

1. Ahuja, H.L. – *Modern Microeconomics*, S. Chand & Co.
2. Jhingan, M.L. – *Microeconomic Theory*, Vrinda Publications.
3. Samuelson, P.A. & Nordhaus, W.D. – *Economics*, McGraw Hill.
4. Dwivedi, D.N. – *Managerial Economics*, Vikas Publishing.
5. Stonier and Hague – *A Textbook of Economic Theory*, Longman.

## CHECK YOUR PROGRESS

### PART A: MULTIPLE CHOICE QUESTIONS

**1.** Which cost remains unchanged regardless of output level?

a) Variable cost

b) Fixed cost

c) Marginal cost

d) Opportunity cost

**2.** The payment made to hired resources is called:

a) Implicit cost

b) Explicit cost

c) Sunk cost

d) Incremental cost

**3.** In the short run, which factor cannot be changed?

a) Labour

b) Raw materials

c) Plant size

d) Electricity

**4.** The curve that intersects AVC and ATC at their minimum points is:

a) AFC curve

b) Demand curve

c) Marginal cost curve

d) Total cost curve

**5.** Long-run average cost curve is also known as:

a) Planning curve

b) Demand curve

c) Supply curve

d) Indifference curve

**6.** When output increases and per-unit cost decreases, it is called:

a) Diseconomies of scale

b) Economies of scale

c) Constant returns

d) Diminishing returns

**7.** Average revenue under perfect competition equals:

a) Total cost

b) Price

c) Marginal cost

d) Fixed cost

**8.** At break-even point, total revenue is:

a) Greater than total cost

b) Less than total cost

c) Equal to total cost

d) Zero

**9.** Contribution margin per unit is calculated as:

a) Price + Variable cost

b) Price – Variable cost

c) Price × Variable cost

d) Price ÷ Variable cost

**10.** Which of the following is a limitation of break-even analysis?

a) It helps in profit planning

b) It assumes constant selling price

c) It assists in cost control

d) It aids in pricing decisions

**PART B: FILL IN THE BLANKS (1 mark each)**

**1.** The value of the next best alternative foregone is called _____ cost.

**2.** Costs that contain both fixed and variable elements are known as _____ costs.

**3.** In the long run, _____ costs do not exist as all factors become variable.

**4.** The U-shape of short-run cost curves is explained by the law of _____ proportions.

**5.** When a firm grows too large and faces coordination problems, it experiences _____ of scale.

**6.** The additional revenue from selling one more unit is called _____ revenue.

**7.** The point where total revenue equals total cost is known as the _____ point.

**8.** BEP (units) = Fixed Cost ÷ _____ per unit.

**ANSWER KEY**

**Part A:**

1-b, 2-b, 3-c, 4-c, 5-a, 6-b, 7-b, 8-c, 9-b, 10-b

**Part B:**

1. Opportunity
2. Semi-variable (or semi-fixed)
3. Fixed
4. Variable
5. Diseconomies
6. Marginal
7. Break-even
8. Contribution (or Price – Variable Cost)

**TRY IT YOURSELF**

**Activity 1:** Interview a local shopkeeper or small manufacturer. Identify their fixed costs, variable costs, and how they decide selling prices. Prepare a brief report.

**Activity 2:** Collect price and output data for any Indian company from annual reports. Calculate approximate break-even point and comment on the company's profitability position.

**CASE STUDY ANALYSIS**

Kiran Textiles operates a medium-sized garment unit in Surat. Currently producing 5,000 units monthly, the company enjoys economies of scale with low per-unit costs. The management considers expanding to 15,000 units by opening a new facility. However, past experience shows that beyond 10,000 units, coordination problems increase, worker productivity drops, and per-unit costs begin rising.

**Questions:**

- a) Identify the economic concepts illustrated in this case. (2 marks)
- b) What advice would you give Kiran Textiles about expansion? Justify. (3 marks)

## Unit – V: Market Structure Analysis

**Structure**

Overview

1. Meaning and Definition of Market
2. Basics of Markets
3. Types of Markets
4. Perfect Competition
5. Monopoly
6. Monopolistic Competition
7. Oligopoly
8. Contemporary Market Practices and Digital Pricing Strategies.
8. Check Your Progress
9. Let Us Sum Up
10. Glossary
11. Answers to Check Your Progress
12. Suggested Reading

**Overview: Market – Basics and Types of Markets**

- A market is a system or environment where buyers and sellers interact to exchange goods and services. Markets are essential for the economy as they help determine prices, allocate resources efficiently, and enable trade. They can be physical, such as local stores or stock exchanges, or virtual, like online platforms and e-commerce websites. The structure of a market depends on factors like the number of sellers, the nature of the product, and the level of competition. Economists typically classify markets into four main types:
- Perfect Competition – Many sellers selling identical products with no control over price.
- Monopoly – Single seller dominating the market with no close substitutes.
- Monopolistic Competition – A market in which numerous sellers offer **differentiated products** and have **some control over prices**.
- Oligopoly – Few large sellers whose decisions influence one another; products may be similar or differentiated.

Understanding market types is essential for:

- Businesses to plan pricing, production, and marketing strategies.
- Policymakers to regulate markets and ensure consumer welfare.
- Students to grasp how competition and market forces shape the economy.

This unit explores the characteristics, advantages, and disadvantages of each market type, helping students understand how markets function and impact economic decisions.

**Learning Objectives**

By the end, learners will be able to:

1. Understand the concept and definition of a market.
2. Explain the basic features and functions of markets.
3. Identify and differentiate between types of markets.
4. Analyze characteristics, advantages, and disadvantages of different market structures:
5. Apply knowledge of market structures to real-world business scenarios.

**1. Meaning and Definition of Market**

A market is a place or platform where buyers and sellers come together to trade goods and services. It is not limited to a physical location; modern markets can also exist virtually. The primary purpose of a market is to facilitate trade by establishing prices and distributing resources efficiently.

**Definitions:**

- Marshall**:** "A market is a set of arrangements by which buyers and sellers are in touch with one another and goods are exchanged."
- H.L. Ahuja**:** "A market is a place where demand and supply of a commodity meet to determine its price."

**Essential Features of Market:**

**Price Determination**

Markets help to determine prices on the basis of the forces of demand and supply.

**Efficient Allocation of Resources**

Markets guide resources to their most valued use.

**Facilitates Exchange**

Provides a platform for trading goods and services.

**Encourages Competition**

Healthy competition promotes innovation and better quality products.

**2. Basics of Markets**

- Markets perform the function of allocating resources efficiently through price mechanisms.
- They provide information regarding demand, supply, and prices to producers and consumers.
- Markets can be classified based on competition level, geographical area, or nature of goods.

**Functions of Markets**

1. Facilitate exchange of goods and services.
2. Determine price through demand-supply interaction.
3. Encourage production and specialization.
4. Serve as a mechanism for risk-sharing and credit.

**3. Types of Markets**

Markets are primarily classified by **the degree of competition**:

1. Perfect Competition
2. Monopoly
3. Monopolistic Competition
4. Oligopoly

**4. Perfect Competition**

Perfect competition refers to a market structure in which many buyers and sellers trade identical products, there are no barriers to entry or exit, and prices are determined solely by the forces of demand and supply.

**Characteristics**

A Large Number of Buyers and Sellers **-** Individual participants are too small to influence price.

Homogeneous Products **-** All products are identical and interchangeable.

Free Entry & Exit -

Perfect Knowledge –

Price Taker - Individual firms accept the market-determined price; they cannot influence it.

**Advantages and Disadvantages of Perfect Market**

| Advantages | Disadvantages |
|---|---|
| **Consumer Benefits:** Lowest possible price due to competition | **Unrealistic Model:** Perfect competition rarely exists in reality |

| | |
|---|---|
| **Resource Efficiency:** Firms operate at minimum cost, leading to productive efficiency. | **No Product Differentiation:** Lack of variety may limit consumer choice. |
| **No Exploitation:** Sellers cannot manipulate prices to exploit consumers. | **Low Profit for Firms:** Competitive pressure keeps profits minimal. |
| **Encourages Specialization:** Efficient allocation of resources promotes growth. | **Limited Incentive for Innovation:** No rewards for developing new products. |

**Example** Agriculture markets for commodities like wheat, rice, or sugar.

**5. Monopoly**

Monopoly describes a market condition where a single producer or seller dominates the entire supply of a product that has no close substitutes.

Definition:

A monopoly is a market structure in which one firm is the only producer and seller of a product with no close alternatives, giving it full control over both the price and the quantity of output.

**Characteristics**

1. **Single Seller:** Only one firm will control the entire market.
2. **Unique Product:** close substitutes are not available.
3. **Price Maker:** The firm can set prices based on demand.
4. **Barriers to Entry:** New firms cannot enter due to legal, financial, or technological barriers.
5. **High Market Power:** Monopoly can influence quantity, price, and terms of trade.

**Advantages and Disadvantages of Monopoly market**

| Advantages | Disadvantages |
|---|---|
| **Economies of Scale:** Large-scale production reduces costs. | **Higher Prices:** Consumers pay more due to lack of competition. |
| **Stable Production:** Monopoly ensures consistent supply, especially in essential sectors. | **Lower Product Variety:** Limited innovation leads to fewer choices. |
| **Encourages Investment:** Firms can invest in long-term projects without competitive pressure. | **Inefficiency:** No incentive to minimize cost or improve quality. |

| | |
|---|---|
| **Standardization of Products:** In some cases, monopoly ensures uniform quality and standards of products or services. | **Consumer Exploitation:** Market power may be misused. |

**Example** State electricity boards, water supply companies, or Indian Railways.

**6. Monopolistic Competition**

Meaning:

This is a market structure where many firms sell products that are similar but not identical. Each firm has some control over its prices, and entry or exit from the market is relatively easy.

**Characteristics:**

1. Large number of firms.
2. Product differentiation (quality, branding, packaging).
3. Free entry and exit.
4. Some control over price due to differentiation.
5. Heavy emphasis on advertising and marketing.

**Advantages:**

- Encourages product variety and innovation.
- Consumer choice increases.
- Firms earn short-run profits.

**Disadvantages:**

- Excessive expenditure on advertising.
- Allocative and productive inefficiency.
- Prices higher than perfect competition.

**7. Oligopoly**

**Meaning:**

An oligopoly is a market structure where a few large firms dominate the industry, producing either similar or differentiated products, and their pricing and output decisions are interdependent.

**Characteristics:**

1. Few dominant sellers.
2. High barriers to entry.
3. Mutual interdependence among firms.
4. Price rigidity; firms avoid price wars.

5. Possibility of collusion or cartels.

**Advantages:**

- Stability in price and output.
- Can lead to economies of scale.

**Disadvantages:**

- Risk of collusion and price-fixing.
- May reduce innovation due to lack of competitive pressure.

Table shows a comparison of various types of markets:

| **Feature** | **Perfect Competition** | **Monopoly** | **Monopolistic Competition** | **Oligopoly** |
|---|---|---|---|---|
| Number of Sellers | Many | One | Many | Few |
| Product Type | Homogeneous | Unique | Differentiated | Homogeneous/Differentiated |
| Price Control | None (Price taker) | High (Price maker) | Some | Interdependent |
| Entry/Exit | Free | Restricted | Free | Restricted |
| Example | Agricultural markets | Local electricity supply | Clothing brands | Automobiles |

**8. Contemporary Market Practices and Digital Pricing Strategies**

In today's fast-changing business environment, markets have become more competitive and digital. Companies use modern market practices and digital pricing strategies to attract customers, increase sales, and stay ahead of competitors. Digital technology helps businesses change prices quickly based on demand, competition, and customer behavior.

1. Online and Platform-Based Selling

Many businesses now sell products through online platforms instead of only physical stores. This helps them reach more customers and reduce costs.

Example

Companies like Amazon India, Flipkart, and Meesho allow sellers to reach customers across the country. Small Indian businesses can sell products online without opening physical shops.

2. Dynamic Pricing

Dynamic pricing means changing prices based on demand, time, or customer behavior. Prices may go up during high demand and come down during low demand.

Example

Ola and Uber increase ride prices during peak hours or heavy rain due to high demand and limited drivers. When demand is low, prices become cheaper.

3. Discount and Festival Pricing

Digital platforms use heavy discounts, cashbacks, and special offers to attract customers, especially during festivals and sales events.

Example

During Diwali and Big Billion Days, Flipkart and Amazon offer huge discounts on mobiles, clothes, and electronics to boost sales.

4. Personalized Pricing and Offers

Digital tools allow companies to study customer data and provide personalized prices and offers.

Example

Food delivery apps like Swiggy and Zomato give different discount coupons to different users based on their ordering habits.

5. Competitive Pricing through Price Comparison

Customers can easily compare prices online. As a result, businesses keep prices competitive and transparent.

Example

Indian consumers often compare mobile prices on Amazon, Flipkart, and Croma before buying. Sellers adjust prices to remain competitive.

6. Subscription and Freemium Pricing

Many digital businesses offer free basic services and charge for premium features.

Example

Apps like Hotstar (Disney+ Hotstar) and Spotify India provide free access with ads and charge users for ad-free premium plans.

**CHECK YOUR PROGRESS**

**PART A: MULTIPLE CHOICE QUESTIONS**

1. In which market structure are products identical and interchangeable?
   a) Monopoly
   b) Oligopoly
   c) Perfect competition
   d) Monopolistic competition
2. A single seller with no close substitutes describes:
   a) Perfect competition
   b) Monopoly
   c) Monopolistic competition
   d) Oligopoly
3. Which market has many sellers offering differentiated products?
   a) Perfect competition
   b) Monopoly
   c) Monopolistic competition
   d) Oligopoly
4. Mutual interdependence among firms is a feature of:
   a) Perfect competition
   b) Monopoly
   c) Monopolistic competition
   d) Oligopoly
5. A firm that cannot influence market price is called:
   a) Price maker
   b) Price taker
   c) Price leader
   d) Price discriminator

6. Which of the following has free entry and exit?
   a) Monopoly only
   b) Perfect competition and monopolistic competition
   c) Oligopoly only
   d) Monopoly and oligopoly
7. Indian Railways is an example of:
   a) Perfect competition
   b) Natural monopoly
   c) Monopolistic competition
   d) Duopoly
8. Heavy advertising expenditure is typical of:
   a) Perfect competition
   b) Monopoly
   c) Monopolistic competition
   d) None of the above
9. Dynamic pricing is commonly used by:
   a) Local vegetable vendors
   b) Ride-hailing apps like Ola and Uber
   c) Government ration shops
   d) Agricultural mandis
10. Price rigidity is associated with:
   a) Perfect competition
   b) Monopoly
   c) Oligopoly
   d) Monopolistic competition

**PART B: FILL IN THE BLANKS**

**1.** A market with many buyers and sellers trading identical products is called _____ competition.

2. The market structure where one firm controls the entire supply is known as _____.

3. Product _____ allows firms some control over price in monopolistic competition.

4. In an oligopoly, firms are _____ dependent in their pricing decisions.

5. A monopolist is a price _____, while a firm in perfect competition is a price _____.

6. _____ pricing means changing prices based on demand and time.

7. During festive seasons, e-commerce platforms use heavy _____ to attract customers.

8. Hotstar's free basic plan with paid premium features follows the _____ pricing model.

**PART C: MATCH THE FOLLOWING**

| Column A | Column B |
|---|---|
| 1. Many sellers, identical product | a. Monopoly |
| 2. Single seller, no substitutes | b. Oligopoly |
| 3. Few sellers, mutual dependence | c. Perfect competition |
| 4. Many sellers, differentiated product | d. Monopolistic competition |
| 5. Price taker | e. Kinked demand curve |
| 6. Price maker | f. Firm in perfect competition |

**ANSWER KEY:**

**PART A: MULTIPLE CHOICE QUESTIONS**

| Q.No. | Answer | Explanation |
|---|---|---|
| 1 | **c) Perfect competition** | Products are homogeneous and identical in perfect competition |
| 2 | **b) Monopoly** | Single seller with unique product, no close substitutes |
| 3 | **c) Monopolistic competition** | Many sellers with differentiated products through branding, quality, etc. |
| 4 | **d) Oligopoly** | Few firms dominate; each firm's decision affects others |
| 5 | **b) Price taker** | Firms in perfect competition accept market price, cannot influence it |
| 6 | **b) Perfect competition and monopolistic competition** | Both markets allow free entry and exit of firms |
| 7 | **b) Natural monopoly** | Indian Railways is government-owned with no close substitutes |
| 8 | **c) Monopolistic competition** | Heavy advertising needed to create product differentiation |
| 9 | **b) Ride-hailing apps like Ola and Uber** | They change prices based on demand, time, and availability |
| 10 | **c) Oligopoly** | Firms avoid price wars; prices remain sticky or rigid |

**PART B: FILL IN THE BLANKS**

| Q.No. | Answer |
|---|---|
| 1 | **Perfect** |
| 2 | **Monopoly** |
| 3 | **Differentiation** |
| 4 | **Inter** (or **Mutually**) |

| Q.No. | Answer |
|---|---|
| 5 | **Maker**, **Taker** |
| 6 | **Dynamic** |
| 7 | **Discounts** (or **Offers** / **Cashbacks**) |
| 8 | **Freemium** |

**PART C: MATCH THE FOLLOWING**

| Column A | Answer (Column B) |
|---|---|
| 1. Many sellers, identical product | **c. Perfect competition** |
| 2. Single seller, no substitutes | **a. Monopoly** |
| 3. Few sellers, mutual dependence | **b. Oligopoly** |
| 4. Many sellers, differentiated product | **d. Monopolistic competition** |
| 5. Price taker | **f. Firm in perfect competition** |
| 6. Price maker | **a. Monopoly** (or any firm with market power) |

**Let Us Sum Up**

- Monopolistic competition features product differentiation with many sellers.
- Oligopoly is a market with few dominant firms and interdependent pricing.
- Understanding market structures helps in analyzing pricing, output decisions, and consumer welfare.

**Suggested Reading**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4. Jhingan, M.L. – *Microeconomic Theory*, Vrinda Publications.
5. Salvatore, D. – *Microeconomics: Theory and Applications*, Oxford University Press.