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PREFACE

A highly skilled professional team of PW ONLY IAS works arduously to ensure that the students receive the best content for the UPSC exams. A plethora of UPSC Study Material is available in the market but PW ONLY IAS professionals are continuously working to provide supreme quality study material for our UPSC students.

From the beginning, the content team comprising Content Creators, Reviewers, DTP operators, Proofreaders, and others is involved in shaping the material to their best knowledge and experience to produce powerful content for the students.

Faculties have adopted a new style of presenting the content in easy-to-understand language and have provided the team with expert guidance and supervision throughout the creation of this book.

PW ONLY IAS strongly believes in conceptual and fun-based learning. PW ONLY IAS provides highly exam-oriented content to bring quality and clarity to the students.

This book adopts a multi-faceted approach to mastering and understanding the concepts by having a rich diversity of questions asked in the examination and equipping the students with the knowledge for this competitive exam.

The main objective of the study material is to provide short, crisp, concise, and high-quality content to our students.

- Holistic Coverage of 50+ NCERT Books
- Thinking Points in and as 'Points to Ponder'
- Intensive use of Maps, Diagrams and Flowcharts
- Subject-Specific Workbooks for Practice

Alakh Pandey

Every chapter consists of 'Points to Ponder,' where our leaders raise thinking points for the students to go beyond the confines of the book. The students are expected to think about and find out possible answers to these points. The Caricatures used are inspired by Alakh Pandey Sir and Sumit Rewri Sir.

Sumit Rewri

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Unit-I
Microeconomics

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Basics of Microeconomics

Bibliography: This chapter encompasses the summary of **Chapter 1 of Class XII** - "NCERT (Introductory Microeconomics)"

Introduction

People in society need various goods and services in their everyday lives including food, clothing, shelter, transport facilities like roads and railways, postal services and several other services like that of teachers and doctors. No individual as well as the society at large has unlimited resources (land, grains etc.) compared to their needs. Everyone faces **scarcity of resources**, and therefore, has to use the limited resources in the best possible way to fulfill "their" needs. Therefore, there has to be some **compatibility** between what people in society collectively want to have and what they produce. The allocation of **limited resources** and the distribution of the **final mix of goods and services** are two of the basic economic problems faced by society.

Core Challenges of an Economy

Production, exchange and consumption of goods and services are among the basic economic activities of life. In the course of these basic economic activities, every society has to face a scarcity of resources and it is the scarcity of resources that gives rise to the problem of choice.

Problems Related to Economics

- **Production and Quantity:** Every society has to decide on how to use its scarce resources. It raises a **trade-off** between food, clothing, housing and more luxury goods, agricultural goods and industrial products and services, using more resources in education and health or more resources in building military services, investing in consumption goods or having investment goods (like machines) which will boost production and consumption tomorrow.
- **Method of Production:** Every society has to decide on whether to use more labour or more machines and which technologies to adopt in the production of each of the goods.
- **Allocation of Scarce Resources:** Every economy faces the problem of allocating scarce resources to the production of different possible goods and services and of distributing the produced goods and services among the individuals within the economy. The allocation of scarce resources and the distribution of the final goods and services are the central problems of any economy.

Production Possibility Frontier

The collection of all possible combinations of the goods and services that can be produced from a given amount of resources and a given stock of technological knowledge is called the **production possibility set of the economy.** We can understand this concept taking the example of corn and cotton.

- Any point on or below the curve represents a **combination of corn and cotton** that can be produced with the economy's resources. The curve gives the maximum amount of corn that can be produced in the economy for any given amount of cotton and vice-versa. This curve is called the **production possibility frontier** (Refer to Figure 1.1). The production possibility frontier gives the combinations of corn and cotton that can be produced when the resources of the economy are fully utilised.

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➢ **Opportunity Cost:** There is always a cost of having a little more of one good in terms of the amount of the other good that has to be forgone. This is known as the **opportunity cost** of an additional unit of the goods.

Note: The concept of opportunity cost is applicable to the individual as well as the society. It is also called the **economic cost**

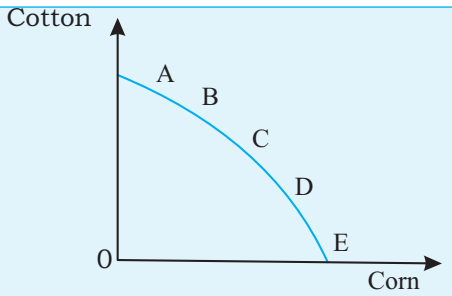

Figure 1.1: Production possibility frontier

Organisation of Economic Activities

Basic problems can be solved either by the free interaction of the individuals pursuing their own objectives as is done in the market or in a planned manner by some central authority like the government.

The Centrally Planned Economy

- In this, the government or the **central authority plans all the essential activities** in the economy.
- The Central government may make decisions regarding production, exchange and consumption of goods and services and their distribution which is thought to be **desirable for society as a whole**. For example: Education or health services.
- In this, the government might try to induce the individuals to produce an adequate amount of goods and services or may itself decide to produce that good or service or may intervene and try to achieve an equitable distribution of the final mix of goods and services to the needy.

The Market Economy

- In a market economy, all economic activities are organised through the market.
  - In market economy, interaction between buyers and sellers can occur in various situations: from open village chowk to super bazaar or through telephone or internet and conduct the exchange of commodities.
- The arrangements which allow people to buy and sell commodities freely are the defining features of a market.
- In a market system, all goods or services come with a **price (which is mutually agreed upon by the buyers and sellers)** at which the exchanges take place. The price reflects, on average, the society's valuation of the good or service in question.
- If the buyers demand more of a certain good, the price of that good will rise. This in turn will influence producers to increase their production.
- In this way, prices of goods and services send important information to all the individuals across the market and help achieve coordination in a market system and the central problems regarding how much and what to produce are solved through the **coordination of economic activities** brought about by the price signals.

Market
A market in economics, is an institution which organises the **free interaction of individuals** pursuing their respective economic activities. In other words, it is a set of arrangements where economic agents can freely exchange their endowments or products with each other.

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The Mixed Economy

- A mixed economic system blends elements of both **capitalism** and **socialism**. It preserves private property and economic freedom but permits government intervention to achieve social goals.
- In reality, all economies are mixed economies where some important decisions are taken by the government and the economic activities are by and large conducted through the market.
- The only difference is in terms of the extent of the role of the government in deciding the course of economic activities. For example,
  - **United States of America (USA):** Here, the role of the government is minimal.
  - **China:** It followed a centrally planned economy for the major part of the twentieth century.
  - **India:** Since Independence, the government has played a major role in planning economic activities. However, the role of the government in the Indian economy has been reduced considerably in the last couple of decades.

Positive and Normative Economics

- In economics, we try to analyse the different mechanisms and figure out the outcomes which are likely to result under each of these mechanisms. We also try to evaluate the mechanisms by studying how desirable the outcomes resulting from them are.
- Often a distinction is made between **positive economic analysis and normative economic analysis** depending on whether we are trying to figure out how a particular mechanism functions or we are trying to evaluate it.
  - **Positive economic analysis:** In this, we study how the different mechanisms function.
  - **Normative economic analysis:** In this, we try to understand whether these mechanisms are desirable or not.
- However, this distinction between positive and normative economic analysis is not very sharp and the study of the central economic problems are very closely related to each other and a proper understanding of one is not possible in isolation from the other.

Microeconomics and Macroeconomics

Microeconomics

- In this, we study the behavior of **individual economic agents** in the markets for different goods and services and try to figure out how prices and quantities of goods and services are determined through the interaction of individuals in these markets.

Macroeconomics

- In this, we try to get an understanding of the economy as a whole by focusing our attention on **aggregate measures** such as total output, employment and aggregate price level.
- In this, we try to study the behavior of aggregate or macro measures of the performance of the economy.
- Some of the topics that are studied in macroeconomics are as follows:
  - The level of total output in the economy,
  - Method of measuring total output,
  - Output growth over time,

POINTS TO PONDER

Microeconomics deals with understanding the behavior of **individual economic agents** in the markets for different goods and services. It concentrates on the economy of the unit be it individual or a firm. However Macroeconomics deals with understanding of the economy as a whole by focusing our attention on **aggregate measures** such as total output, employment and aggregate price level. Which approach do you think is more suitable to study the economy of the country and how does it help us?

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- ✧ Employability of the resources of the economy (e.g. labour),
- ✧ Reasons behind the unemployment of resources and
- ✧ Reasons for price rise.

Conclusion

In this chapter, we have discussed the problem of managing the resources of an economy and the opportunity cost associated with them. We have also discussed various methods of managing and distributing these resources among people either through the involvement of the government or on a free market basis. The idea of micro and macroeconomics is also discussed here.

Glossary

- ➢ **Production Potential Frontier:** The collection of all possible combinations of the goods and services that can be produced from a given amount of resources and a given stock of technological knowledge.
- ➢ **Opportunity Cost:** A cost of having a little more of one good in terms of the amount of the other good that has to be forgone.
- ➢ **Centrally Planned Economy:** The government or the **central authority plans all the essential activities.**
- ➢ **Market Economy:** All economic activities are organised and managed through the market.
- ➢ **Mixed Economy:** Economies in which the government and market both have a say in deciding economic activities.
- ➢ **Positive Economic analysis:** In this, we study how the different mechanisms function.
- ➢ **Normative Economics:** In this, we try to understand whether these mechanisms are desirable or not.
- ➢ **Microeconomics:** In this, we study the behavior of **individual economic agents** in the markets.
- ➢ **Macroeconomics:** In this, we try to get an understanding of the economy as a whole by focusing our attention on **aggregate measures.**

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2 Consumer Behaviour and Their Rights

Bibliography: This chapter encompasses the summary of Chapter 2 of Class XII NCERT (Introductory Microeconomics) and Chapter 5 of Class X NCERT (Economics)

Introduction

The consumer must choose how to allocate her income among many goods. This is known as the **Problem of Choice in Economics**. Any buyer will, of course, want to purchase a set of things that will make her feel the happiest. This is dependent upon the consumer's tastes (preferences) and what the consumer can afford. Additionally, the pricing of the goods and the consumer's income determines what the consumer can afford to purchase.

Preliminary Notations and Assumptions

We shall consider the consumer's choice problem in a situation where there are only two goods: bananas and mangoes. In general, we shall use the variable x_1 to denote the quantity of banana and x_2 to denote the quantity of mangoes. x_1 and x_2 can be positive or zero. For example, the bundle (5,10) consists of 5 bananas and 10 mangoes; the bundle (10, 5) consists of 10 bananas and 5 mangoes.

Utility

- The utility of a commodity is its **want-satisfying capacity.** The more the need for a commodity, the greater the utility derived from the commodity.
- Utility is **subjective**. For instance, a person who enjoys chocolate will benefit significantly more from chocolate than a person who does not.
- Additionally, the utility that a given person derives from a given product can alter as time and place change.
- For instance, the benefit of using a room heater would vary depending on whether the user is in Chennai or Ladakh (location) and if it is summer or winter (season).

Cardinal Utility Analysis

Cardinal utility analysis assumes that the level of utility can be expressed in **numbers**.

Measures of Utility:

- **The total utility** of a fixed quantity of a commodity (TU) is the total satisfaction derived from consuming the given amount of some commodity x. $\mathbf{TU_n}$ refers to total utility derived from consuming n units of a commodity x.

Table 2.1: Values of marginal and total utility derived from consumption of various amounts of a commodity

Units	Total Utility	Marginal Utility
1	12	12
2	18	6
3	22	4
4	24	2
5	24	0
6	22	–2

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- **Marginal Utility (MU)** is the change in total utility due to the consumption of one additional unit of a commodity:

$$MU_n = TU_n - TU_{n-1}$$

- Total utility and marginal utility can also be related in the following way:

$$TU_n = MU_1 + MU_2 + \ldots + MU_{n-1} + MU_n$$

- Table No. 2.1 and Figure 2.1 show an imaginary example of the values of marginal and total utility derived from the consumption of various amounts of a commodity.
- The rate of change in total utility due to a change in the quantity of commodity consumed is a measure of marginal utility.
- **The law of Diminishing Marginal Utility** states that marginal utility from consuming each additional unit of a commodity declines as its consumption increases while keeping the consumption of other commodities constant.
- MU becomes zero at a level when TU remains constant. In the example, TU does not change at the 5th unit of consumption and therefore $MU_5 = 0$. Thereafter, TU starts falling and MU becomes negative.

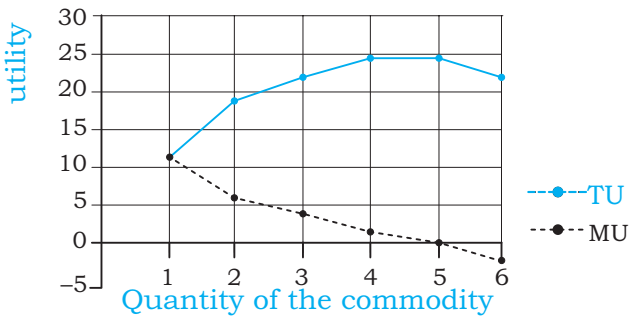

Figure 2.1: The values of marginal and total utility derived from consumption of various amounts of a commodity. The marginal utility diminishes with increase in consumption of the commodity.

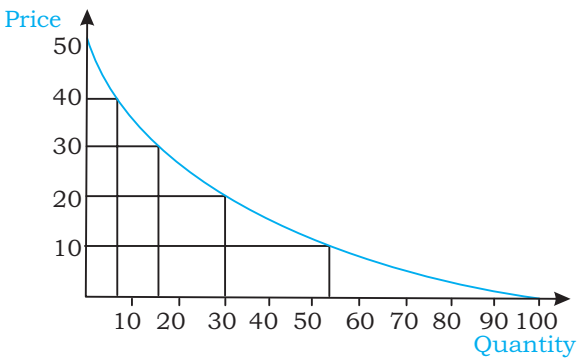

Figure 2.2: Demand curve of an individual for commodity x.

Derivation of Demand Curve in the Case of a Single Commodity (Law of Diminishing Marginal Utility)

- In addition to the price of the commodity itself, demand for a commodity x is influenced by prices of other commodities, consumer income, and consumer preferences and tastes.
- A demand curve is a visual representation of the varied quantities of a good that a consumer is willing to purchase at varying prices of the same good while maintaining constant prices of other goods that are similar to it.
- Figure 2.2 represents a hypothetical demand curve of an individual for commodity x at its different prices.
- An explanation for a **downward-sloping demand curve** rests on the notion of diminishing marginal utility.
- There is a negative relationship between the price of a commodity and the quantity demanded which is referred to as the **Law of Demand.**

Ordinal Utility Analysis

- The consumer does not measure utility in numbers, though she often ranks various **consumption bundles.**
- The points representing bundles which give the consumer equal utility can generally be joined to obtain a curve like the one in Figure 2.3.

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- The consumer is said to be indifferent to the different bundles because each point of the bundles gives the consumer equal utility. Such a curve joining all points representing bundles among which the consumer is indifferent is called an **indifference curve.**
- All the points such as A, B, C and D lying on an indifference curve provide the consumer with the same level of satisfaction.
- The amount of mangoes that the consumer has to forego, in order to get an additional banana, her total utility level being the same, is called the **marginal rate of substitution (MRS).**
- MRS is simply the rate at which the consumer will substitute bananas for mangoes so that her total utility remains constant. So, **MRS =|ΔY/ΔX|**[3]
- MRS diminishes with an increase in the number of bananas.

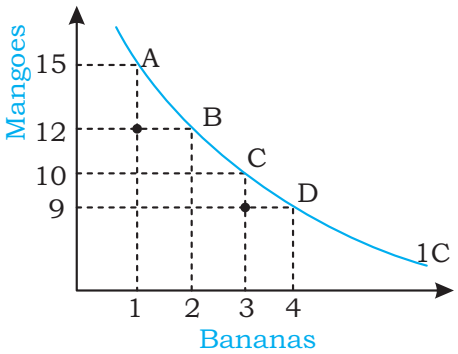

Figure 2.3: Indifference curve. An indifference curve joins all points representing bundles which are considered indifferent by the consumer.

- This tendency for the MRS to fall with an increase in the quantity of bananas is known as the **Law of Diminishing Marginal Rate of Substitution**.
- Consumers sacrifice smaller and smaller quantities of mangoes for each additional banana.

Table 2.2: Representation of Law of Diminishing Marginal Rate of Substitution

Combination	Quantity of Bananas(Qx)	Quantity of Mangoes(Qy)	MRS
A	1	15	-
B	2	12	3:1
C	3	10	2:1
D	4	9	1:1

Shape of an Indifference Curve

- The law of Diminishing Marginal Rate of Substitution causes an indifference curve to be convex to the origin. (Refer table 2.2 and 2.3)
- But in case of goods being perfect substitutes, the marginal rate of substitution does not diminish.

Table 2.3: Representation of Law of Diminishing Marginal Rate of Substitution

Combination	Quantity of five Rupees notes (Qx)	Quantity of five Rupees Coins (Qy)	MRS
A	1	8	-
B	2	7	1:1
C	3	6	1:1
D	4	5	1:1

- For instance, consider that consumers have a set of 5 rupee coins and 5 rupee notes.
- As long as the sum of the five rupee coins and five rupee notes stays the same, the consumer is unconcerned with any of these combinations.
- It barely matters to the consumer whether she receives a five rupee coin or a five rupee note.

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- The indifference curve that represents these two commodities as ideal alternatives for the consumer will be a straight line.
- In Figure. 2.4, it can be seen that the consumer sacrifices the same number of five-rupee coins each time he has an additional five-rupee note.

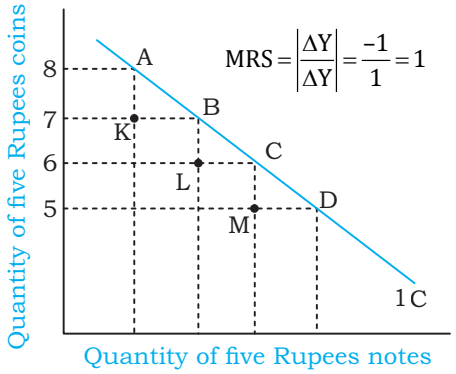

Figure 2.4: Indifference Curve for perfect substitutes. Indifference curve depicting two commodities which are perfect substitutes is a straight line.

Monotonic Preferences

- Consumer preferences are monotonic preferences, where a consumer prefers **a bundle with more of one good than another**, based on the presence of at least one good in both bundles.
- This preference is based on the bundle having more goods than the other.

Indifference Map

- An indifference map of the consumer represents consumer preferences over bundles, with points on it representing indifferent bundles.
- Monotonicity of preferences means bundles on the above curve are preferred. (Figure. 2.5)

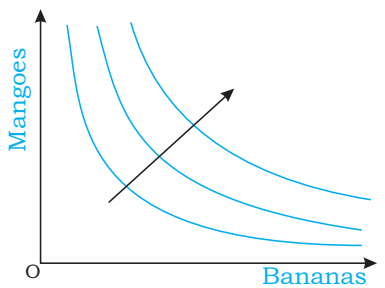

Figure 2.5: Indifference Map. A family of indifference curves. The arrow indicates that bundles on higher indifference curves are preferred by the consumer to the bundles on lower indifference curves.

Features of Indifference Curve

1. Indifference curve slopes downwards from left to right:

- An indifference curve slopes downwards, meaning a consumer needs to forego some mangoes to have more bananas.
- If the consumer doesn't forego mangoes, they'll have more bananas with the same number, causing a higher indifference curve.

2. A higher indifference curve gives a greater level of utility:

- As long as the marginal utility of a commodity is positive, an individual will always prefer more of that commodity, as more of the commodity will increase the level of satisfaction.

Table 2.4: Representation of different level of utilities from different combination of goods

Combination	Quantity of Bananas (Qx)	Quantity of Mangoes (Qy)
A	1	10
B	2	10
C	3	10

Table 2.4 and Figure 2.6 show three banana and mango combinations: A, B, and C. B has more bananas, indicating higher satisfaction, while C has more bananas, indicating higher satisfaction and a higher indifference curve.

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- Both combinations have equal mango quantities.
- Combinations that provide a higher level of enjoyment will have a higher indifference curve made up of combinations with more mangoes, bananas, or both.

3. Two indifference curves never intersect each other:

- Two indifference curves intersecting each other can result in conflicting results.
- For example, points A and B on the same indifference curve IC_1 and points A and C on the same curve IC_2 will yield the same level of satisfaction.
- The utility from point B and point C is not equal, as the consumer benefits more at point B than at point C, indicating that intersecting indifference curves will produce conflicting results.

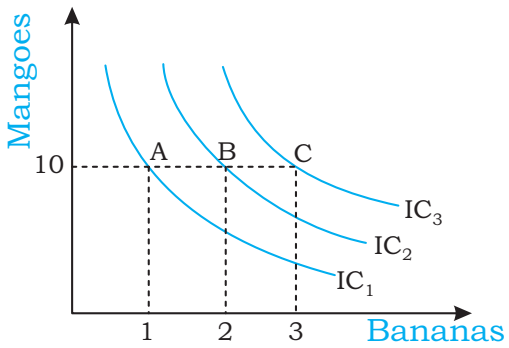

Figure 2.6: Higher indifference curves give greater level of utility.

The Consumer's Budget

- Consider a consumer who can buy only two items with a set quantity of money (income). The market sets the prices for the goods.
- The consumer is unable to purchase any and every possible combination of the two things she might desire to use, this is called the **consumer's budget constraint.**
- The consumer's possible consumption bundles are determined by the cost of the two commodities and their income.
- The consumer can only afford to purchase bundles that cost her less than or equal to her fixed income given the costs of the two commodities and her limited income.

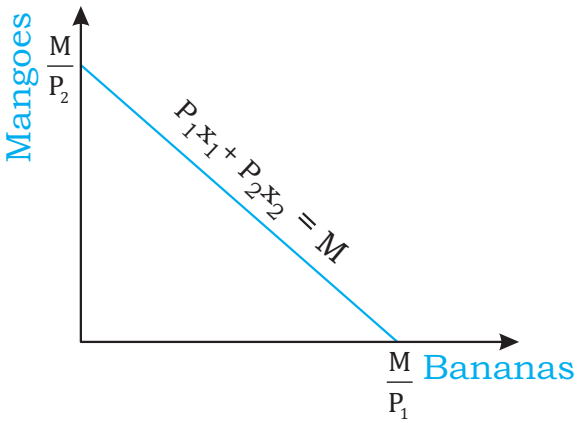

Figure 2.7: Budget Set. Quantity of bananas is measured along the horizontal axis and quantity of mangoes is measured along the vertical axis. Any point in the diagram represents a bundle of the two goods. The budget set consists of all points on or below the straight line having the equation $P_1 x_1 + P_2 x_2 = M$.

Budget Set and Budget Line

- Let us suppose, the consumer's income is M, and the prices of bananas and mangoes are P_1 and P_2 respectively.
- To buy a bundle of bananas (x_1) and mangoes (x_2), the consumer must spend $P_1 x_1 + P_2 x_2$ money (figure 2.7). The consumer can choose any bundle as long as it costs less than or equal to their income.
- This inequality is called the **consumer's budget constraint**, and the **budget set** is the collection of all bundles available to the consumer at market prices.
- The consumer's budget set includes all bundles (x_1, x_2) with numbers greater than or equal to 0 and $P_1 x_1 + P_2 x_2 \leq M$, represented in a diagram like Figure 2.9, with the equation $P_1 x_1 + P_2 x_2 = M$.
- The **budget line** represents bundles with cost equal to M, while points below it represent those with cost less than M.
- The budget line is a straight line with horizontal intercept M/p_1 and vertical intercept M/p_2. The horizontal intercept represents the bundle that the consumer can buy if she spends her entire

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income on bananas. Similarly, the vertical intercept represents the bundle that the consumer can buy if she spends her entire income on mangoes. The slope of the budget line is p_1/p_2.

Example

For a consumer with Rs 20, the available bundles are (0, 0, 1, 0, 2), (0, 3), (0, 4), (1, 0), (2, 1), (3, 1), and (4, 0). However, bundles like (3, 3) and (4, 5) cost more than Rs 20 due to their higher prices.

$x_2 = (M/P_2) - (P_1/P_2)x_1$

Price Ratio and the Slope of the Budget Line

- A consumer's budget line represents a bundle of goods that costs the consumer their entire budget.
- To buy one more banana, the consumer must reduce their expenditure on mangoes by p_1 amount.
- This means they must give up p_1/p_2 quantities of mangoes to have an extra quantity of bananas.

Changes in the Budget Set

- The set of available bundles depends on the prices of goods and the consumer's income. If the consumer's income changes from M to M′, they can afford to buy all bundles with prices $p_1 x_1 + p_2 x_2 \leq M'$.
- Now the equation of the budget line is $p_1x_1 + p_2x_2 = M'$
- Also $x_2 = (M'/p_2) - (p_1/p_2)x_1$
- The new budget line slope remains the same as before income change, but the vertical intercept changes.

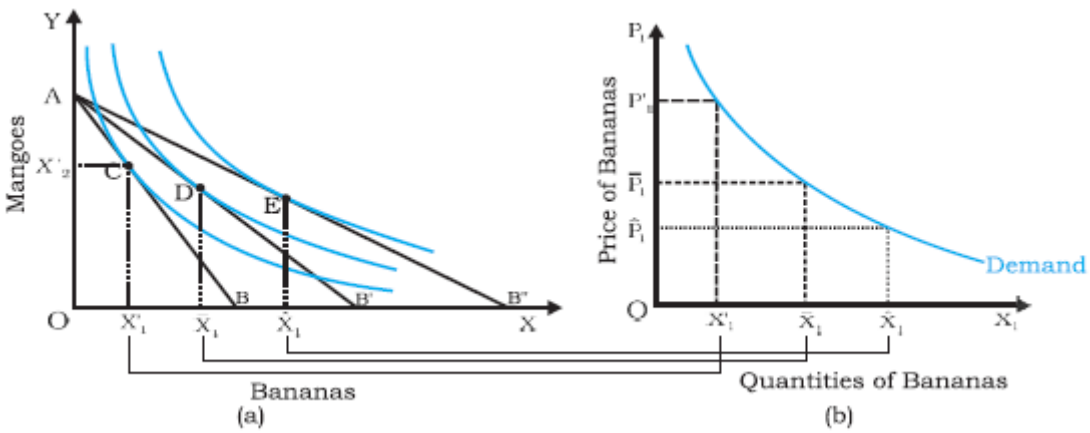

Figure 2.8

- Increased income leads to an outward shift in the budget line, allowing consumers to buy more goods at market prices. Conversely, decreased income decreases both intercepts, causing an inward shift.
- Now suppose the price of bananas change from p_1 to p'_1 but the price of mangoes and the consumer's income remain unchanged. At the new price of bananas, the consumer can afford to buy all bundles (x_1,x_2) such that $p'_1x_1 + p_2x_2 \leq M$. The equation of the budget line is $p'_1x_1 + p_2x_2 = M$
- Also $x_2 = (M'/p_2) - (p'_1/p_2)x_1$
- The vertical intercept of the new budget line remains the same as before the change in banana prices.

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- However, the slope and horizontal intercept change after the price change. If banana prices increase, the budget line becomes steeper, while if they decrease, it becomes flatter.
- The budget set changes when only one commodity changes, and a change in mango prices results in similar changes.

Optimal Choice of the Consumer

- Normally, the amount of a good that the consumer chooses optimally, depends on the price of the good itself, the prices of other goods, the consumer's income and her tastes and preferences.
- The budget set contains all available bundles for consumers to choose their consumption bundle.
- Consumers choose their bundles based on their preferences and tastes, with well-defined preferences over all possible bundles. In other words, between any two bundles, they either prefer one to the other or are indifferent between the two.
- In economics, a rational consumer has well-defined preferences over available bundles and acts according to them.
- The consumer's problem is to move to the highest possible indifference curve given their budget set.
- The optimum point is located on the budget line, where the consumer's preferences are **monotonic**.
- Points below the budget line are preferred, and points above the line are not available.
- The optimum bundle is located at the point where the budget line is tangent to an indifference curve, as any point on the line other than the point where it touches the indifference curve lies on a lower indifference curve and cannot be the consumer's optimum.
- Figure 2.9 shows the consumer's optimum, where the budget line is tangent to the black indifference curve.

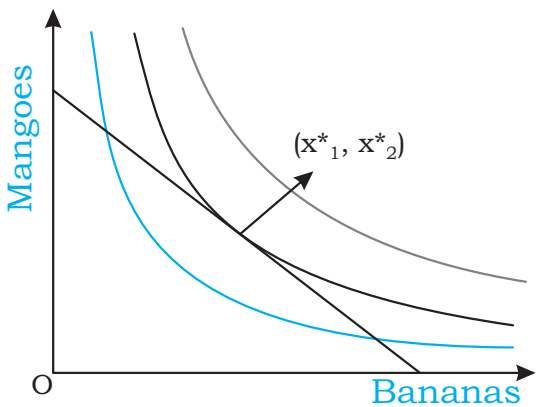

Figure 2.9: Consumer's Optimum. The point (x^*_1 , x^*_2), at which the budget line is tangent to an indifference curve represents the consumers.

- The highest possible indifference curve is at the budget line, while points above, below, and below it are not affordable. Therefore, (x_1,x_2) is the consumer's optimum bundle.

Equality of the Marginal Rate of Substitution and the Ratio of the Prices

- The optimum consumer bundle is at a point where the budget line is tangent to an indifference curve.
- At this point, the slope of the indifference curve (MRS) and the budget line (price ratio) should be the same.
- However, if the MRS is greater than the price ratio, the consumer cannot substitute one good for another in the market, leading to a preference bundle.

Demand

- The quantity of a commodity that a consumer is willing to buy and is able to afford is called **demand for the commodity.**
- This demand is mainly dependent on prices of goods, consumer's tastes and preferences**.**
- Whenever one of these changes, the quantity of goods consumers are willing to buy also changes.

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Demand Curve and the Law of Demand

- The consumer's demand function is a crucial relationship between a good's price and its quantity, which determines the optimal choice of a good.
- It can be expressed as X = f(p), where X represents quantity and P represents price.
- The demand curve (Refer to Figure 2.10) represents this relationship graphically.
- In general, the consumer's demand for a good is negative, meaning the optimal choice increases with falling prices and decreases with rising prices.

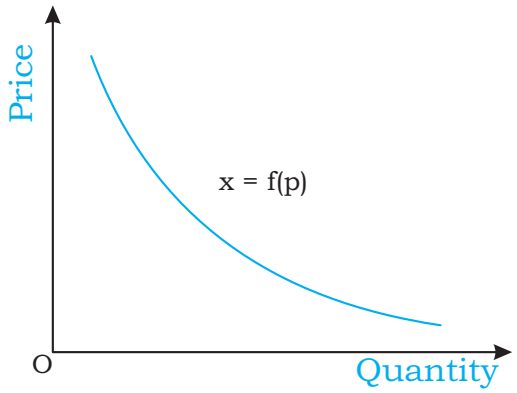

Figure 2.10: Demand Curve. The demand curve is a relation between the quantity of the good chosen by a consumer and the price of the good. The independent variable (price) is measured along the vertical axis and dependent variable (quantity) is measured along the horizontal axis. The demand curve gives the quantity demanded by the consumer at each price.

Deriving a Demand Curve from Indifference Curves and Budget Constraints

- The above-mentioned demand function can be understood with the above given example of banana consumption.
- The demand for bananas increases as their price drops, leading to a higher indifference curve at point D in Figure 2.11.

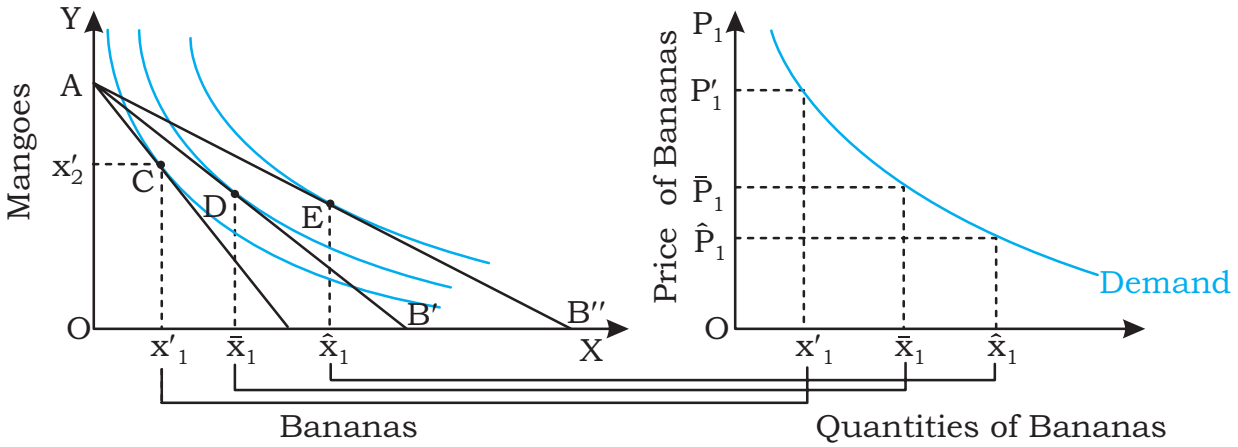

Figure 2.11: Deriving a demand curve from indifference curves and budget constraints

- This decrease in price results in an increase in banana consumption, resulting in a negatively sloped demand curve.
- This can be explained by the substitution effect and income effect, where consumers maximize their utility by substituting bananas for mangoes when prices change, resulting in an increase in demand for bananas.

Law of Demand

- Law of Demand states that other things being equal, there is a negative relation between demand for a commodity and its price.
- In other words, when the price of the commodity increases, demand for it falls and when the price of the commodity decreases, demand for it rises, other factors remaining constant.

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Linear Demand

- A linear demand curve can be written as

$$d(p) = a - bp; \leq p \leq \frac{a}{b} = 0; p > \frac{a}{b}$$

- The demand curve's slope, denoted by 'a', represents the change in demand with respect to price, with a unit increase in the price causing a' b' unit decrease in demand. This is called the **Linear Demand Curve** (Refer to Figure 2.12).

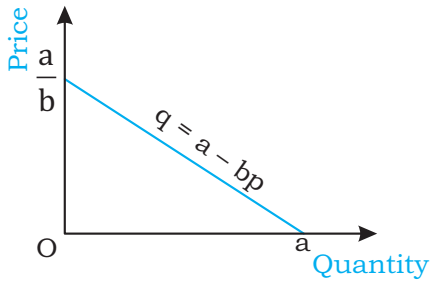

Figure 2.12: Linear demand curve: The diagram depicts the linear demand curve

Normal and Inferior Goods

- When it comes to the majority of items, a consumer's **quantity preference rises as income rises** and falls as income falls. These products are known as **Normal goods.**
- As a result, consumer's demand for typical goods moves in the same direction as consumer's income.
- There are some items, though, whose demand moves in the opposite direction from the consumer's income. These products are known as **inferior goods.**
- Desire for inferior goods **declines as consumer income rises**, but desire for them increases as consumer income decreases.
- Inferior products include **foods of poor quality,** such as **coarse grains**.
- Consumers' demand for normal goods increases with income, while for inferior goods, it decreases.
- For instance, at very low-income levels, demand for low-quality cereals may increase, but as income increases, consumers may switch to better-quality cereals.
- A rise in consumer income can lead to a decrease in consumption of a good, influenced by the substitution and income effects.
- The demand for such a good can be inversely or positively related to its price, such goods are called **Giffen goods**.

Substitutes and Complements

- The **quantity of a good** can increase or decrease with the price of a related good which may be **complementary or substitute** for each other.
- **Complementary goods** are those which are consumed together such as tea and sugar, pen and ink etc.
- For complementary goods, an increase in the price of one causes a decrease in demand for another. For instance, an increase in the price of sugar will lead to a decrease in demand for tea and vice versa.
- Hence, **demand for goods moves in the opposite direction** of the price of their complementary goods.
- In contrast, **substitute goods**, like tea and coffee, are not consumed together. If the price of tea increases, customers can shift to coffee.
- Hence, in case of an increase in the price of one good, customers can shift to its substitutes, which may increase their demand and subsequently price of the substitute.
- Thus, the **demand for a good usually moves in the direction** of the price of its substitutes.

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Shifts in the Demand Curve

- The demand curve is a model that shows how consumer's preferences and income affect the demand for goods.
- When income increases, the demand for normal goods shifts rightward, while for inferior goods, it shifts leftward (Refer to Figure 2.13).

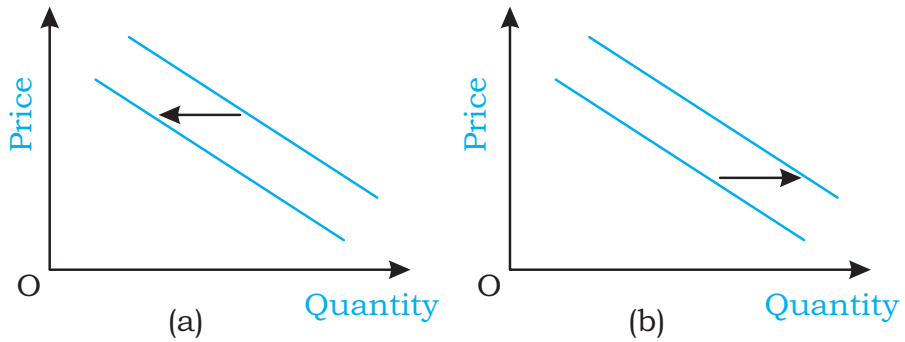

Figure 2.13: Shifts in Demand. The demand curve in panel (a) shifts leftward and that in panel (b) shifts rightward.

- Conversely, when the price of a related good changes, the demand for a good at each level changes.
- The demand curve can also shift due to consumer's preferences, such as increasing preference for ice creams in summer or revealing health risks to cold drinks, resulting in a leftward shift.
- These shifts occur when factors other than the commodity's price change.

Movements along the Demand Curve and Shifts in the Demand Curve

- Consumer's choice depends on the **price of goods, other goods, income, and preferences.**
- The demand function represents the relationship between the amount of a good and its price (Refer to Figure 2.14).

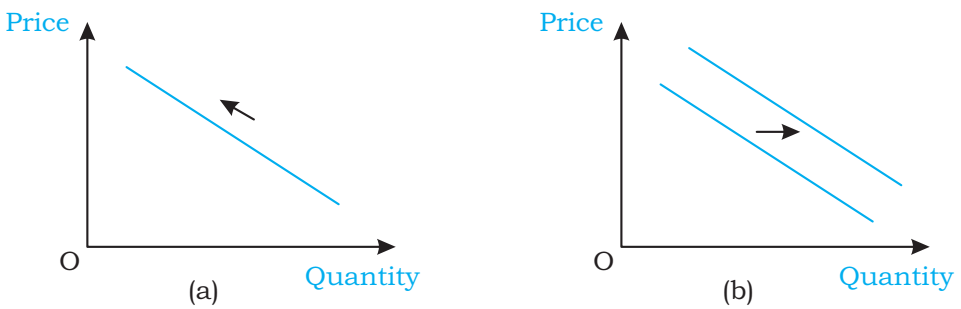

Figure 2.14: Movement along a Demand Curve and Shift of a Demand Curve. Panel (a) depicts a movement along the demand curve and panel (b) depicts a shift of the demand curve.

- The demand curve shows price changes leading to movement along the curve, while other changes cause a shift.

Market Demand

- Market demand for a good at a particular price is the total demand of all consumers taken together.
- Consider there are only 2 consumers in the market for a good (Refer to Figure 2.15).

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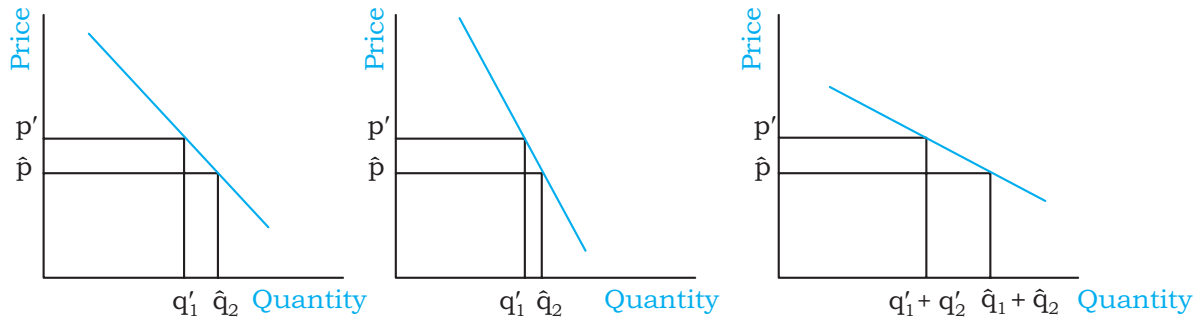

Figure 2.15: Derivation of the Market Demand Curve. The market demand curve can be derived as a horizontal summation of the individual demand curves.

- Suppose at price p′, the demand of consumer 1 is q'_1 and that of consumer 2 is q'_2 . Then, the market demand for the good at p′ is $q'_1 + q'_2$.
- Thus, the market demand for the good at each price can be derived by adding up the demands of the two consumers at that price
- For more than two consumers, the demand can be derived similarly.
- The market demand curve can also be graphically derived by horizontal summation.

Adding up Two Linear Demand Curves

- In a market with two consumers, demand curves d_1 (p) = 10 – p and d_2 (p) = 15 – p.
- At prices greater than 10, consumer 1 demands 0 units of the good, while consumer 2 demands 0 units of goods.
- Market demand can be derived by adding these equations.

Elasticity of Demand

The demand for a good fluctuates in response to price changes, with some goods experiencing significant changes even with small price changes, while others remain unaffected by price changes.

- **Price elasticity of demand is a measure of the responsiveness of the demand for a good to change in its price**.
- Price elasticity of demand for a good is defined as the percentage change in demand for the good divided by the percentage change in its price.

  e_D = (percentage change in demand for the good)/(percentage change in the price of the good)
- When the **percentage change in quantity demanded is less than the percentage change in market price**, is estimated to be less than one and the demand for the good is said to be inelastic at that price. Demand for essential goods is often found to be **inelastic**.(Refer to Figure 2.16)
- When the **percentage change in quantity demanded is more than the percentage change in market price,** the demand is said to be highly responsive to changes in market price and the estimated e_D is more than one. The demand for the goods is said to be **elastic** at that price.
- Demand for **luxury goods** is seen to be highly responsive to changes in their market prices and $e_D > 1$.

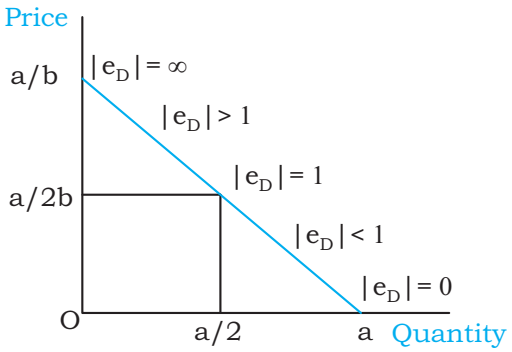

Figure 2.16: Elasticity along a Linear Demand Curve. Price elasticity of demand is different at different points on the linear demand curve.

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- The demand for a good is **unitary-elastic** when the change in quantity demanded equals the change in its market price.

Elasticity along a Linear Demand Curve

The Price elasticity of demand is different at different points on the linear demand curve.

Geometric Measure of Elasticity along a Linear Demand Curve

- The elasticity of a linear demand curve can easily be measured geometrically. The **elasticity of demand** at any point on a straight-line demand curve is given by the ratio of the lower segment and the upper segment of the demand curve at that point (Refer to Figure 2.17).
- Elasticity is 0 at the point where the demand curve meets the horizontal axis and it is ∝ at the point where the demand curve meets the vertical axis.
- At the midpoint of the demand curve, the elasticity is 1, at any point to the left of the midpoint, it is greater than 1 and at any point to the right, it is less than 1.

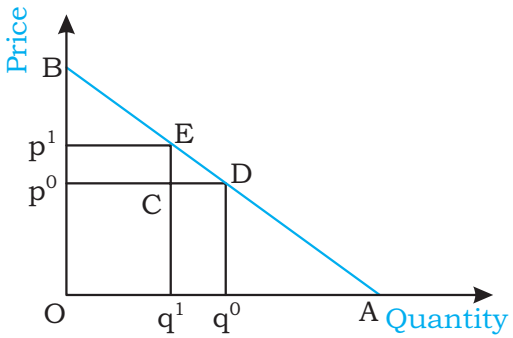

Figure 2.17: Geometric measure of elasticity on a linear demand curve

Constant Elasticity Demand Curve

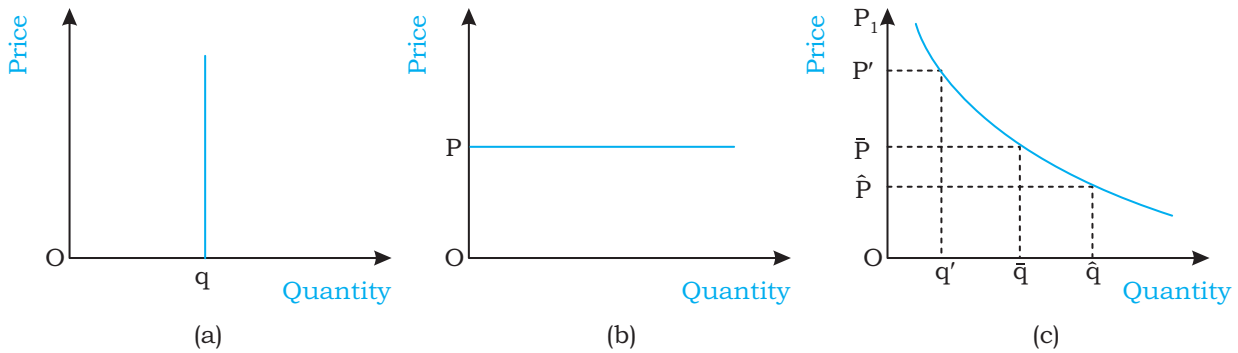

Figure 2.18: Constant Elasticity Demand Curves. Elasticity of demand at all points along the vertical demand curve, as shown in panel (a), is 0. Elasticity of demand at all point along the horizontal demand curve, as shown in panel (b) is ∞ . Elasticity at all points on the demand curve in panel (c) is 1

- The elasticity of demand on different points on a linear demand curve is different, varying from 0 to ∞ (Refer to Figure 2.18). But sometimes, the demand curves can be such that the elasticity of demand remains constant throughout.
- The figure 2.18c given above depicts a demand curve which has the shape of a **rectangular hyperbola.**
- This demand curve has a property that a percentage change in price along the demand curve always leads to an equal percentage change in quantity. Therefore, $|e_D| = 1$ at every point on this demand curve. This demand curve is called the **unitary elastic demand curve.**

Factors Determining Price Elasticity of Demand for a Good

- The price elasticity of demand for a good depends on its **nature and the availability of close substitutes.**

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- For instance, **necessities like food are inelastic,** while luxuries can be highly responsive to price changes.
- In contrast, **food demand is generally price inelastic,** while **luxury demand is price elastic.**
- However, specific food items, like pulses, can be more elastic if close substitutes are easily available.
- Inelastic demand is likely when close substitutes are not easily available, while elastic demand is when they are readily available.

Elasticity and Expenditure

- The expenditure on a good is determined by its **demand multiplied by its price,** and its price and demand are inversely related. The change in expenditure depends on the responsiveness of the good's demand to price changes.
- If the percentage decline in quantity is less than the percentage increase in the price, the expenditure on the goods will go up.
- Consider an increase in the price of a good. If the percentage decline in quantity is greater than the percentage increase in the price, the expenditure on the goods will go down.
- Consider a decline in the price of goods. If the percentage increase in quantity is greater than the percentage decline in the price, the expenditure on the goods will go up.
- The expenditure on the good would remain unchanged if and only if the percentage change in quantity is equal to the percentage change in price, i.e., if the good is unit-elastic.

Consumer Rights

Consumer rights are very important within the context of the ways markets operate in our country. There are many aspects of unequal situations in a market and poor enforcement of rules and regulations. It is very important to **be a well-informed consumer**. There are also a **few organisations** that help consumers in different ways.

The Consumer in the Marketplace

People participate in the market **both as producers and consumers.** As producers of goods and services, people work in some of the sectors such as agriculture, industry, or services. Consumers participate in the market when they purchase goods and services that they need. It is the **final goods that people use as consumers**.

- Individual customers frequently discover themselves in a precarious position. Every time a customer has a complaint about a good or service they purchased, the vendor tries to place all the blame on the customer.
- Market exploitation can take a variety of forms. For instance, occasionally merchants engage in **unfair business practices**, such as selling products that are contaminated or defective or having merchants weigh their goods less accurately than they should.
- Markets are unjust due to the power **imbalance between large producers and small consumers,** leading to unethical practices and false information propagation by large corporations through advertising and spending.
- When producers are few and strong and customers are numerous and make tiny purchases, markets do not function fairly. This is especially true when these products are produced by **big businesses.**
- These businesses can manipulate the market in a number of ways due to their immense wealth, influence, and reach. False information is occasionally disseminated through the media and other channels in an effort to draw customers. For instance:
- For many years, a firm promoted **powdered milk** for infants as the most cutting-edge product, saying it was superior to breast milk. The corporation had to fight for years before being forced to admit that its assertions were untrue.

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- To get **cigarette** manufacturing businesses to concede that their product might cause **cancer**, a protracted legal struggle had to be waged.

Hence, there is a **need for rules and regulations** to ensure protection for consumers.

Consumer Movement

- The consumer movement emerged due to dissatisfaction with unfair practices by sellers and the lack of a legal system to protect them.
- Customers frequently shunned particular brands or stores because they felt it was their duty to exercise caution.It took organisations years to increase awareness.
- The consumer movement in India emerged as a social force to safeguard and advance consumer interests against **unethical and unfair trade practices.**
- In the 1960s, organized consumer movements emerged due to food shortages, hoarding, black marketing, and adulteration of food and edible oil.
- Consumer organisations in India have grown significantly since the 1970s, focusing on issues like ration shop malpractices and overcrowding in road passenger transport.
- The movement successfully pressured businesses and the Indian government to correct unfair business conduct, leading to the enactment of the **Consumer Protection Act 1986 (COPRA).**

Consumer International

In 1985, the **United Nations** issued the UN Guidelines for Consumer Protection. This was a way for governments to pass consumer protection legislation and for consumer advocacy organisations to put pressure on their governments to do so. Globally, this has served as the **cornerstone of consumer activism.**

Consumer Rights in India

Right to Safety

- While using various goods and services, consumers have the right to be protected from hazardous goods and services, including hazardous marketing and delivery.
- Producers must adhere to safety rules and regulations for various goods and services, **Example: Pressure cookers with defective safety valves can cause serious accidents.The manufacturers of the safety valve have to ensure high quality.**
- Public or governmental action is required to ensure quality, yet lax regulation and consumer activism are factors in the market's availability of subpar goods.

Right to be informed

- Consumers have the **right to be informed** about the details of their purchases and can file complaints or request compensation if the product is found defective.
- If a product is defective within its expiry period, customers can request a replacement.
- One can protest and complain if someone sells goods at more than the printed price on the packet. This is indicated by 'MRP' — maximum retail price. Consumers can bargain for a price less than MRP.
- The **Right to Information (RTI) Act,** enacted in 2005, extends citizens' right to information about government departments' functions, ensuring comprehensive coverage of government services.

Quality Standards

In the market, various commodities display logos such as **ISI, Agmark, Hallmark, or +F** to assure consumers of their quality. These logos are issued by organizations that monitor producers and grant them the right to use these symbols if they adhere to specific quality standards.

Importantly, compliance with these standards is not obligatory for all producers. However, for items that impact consumer health and safety or are widely consumed, like LPG cylinders, packaged drinking water, and food colors, certification is mandatory for producers.

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Right to Choose

- Any customer who uses a service in any capacity has the right to decide whether to keep using it, regardless of their age, gender, or the type of service they are using. This indicates that we are **not required to purchase a precise mix of items** but instead can get numerous items from diverse sources.
- For example, when you have a new connection, gas supply merchants may occasionally urge you to buy your cooker from them. It is not mandatory that you accept their offer.

Right to Seek Redressal

- If a consumer has been exploited by a producer, he has the right to seek a remedy, which means consumers have the **right to seek redressal** against unfair trade practices and exploitation.
- Consumers have the **right to compensation** for damage, and an effective public system is needed to facilitate this process.
- The consumer movement in India has led to the formation of various organisations, locally known as **consumer forums or consumer protection councils.** These voluntary organisations also receive financial support from the government for creating awareness among people.

Right to Represent

- Under **COPRA, a three-tier quasi-judicial machinery** at the district, state and national level was set up for the redressal of consumer disputes.
- The district-level authority called the **District Consumer Disputes Redressal Commission** deals with cases involving claims up to ₹1 crore, and the state-level Consumer Disputes Redressal Commission called the **State Commission** between ₹1 crore and ₹10 crore.
- The national-level commission — **National Commission** — deals with cases involving claims exceeding ₹ 10 crore. If a case is dismissed in a district-level commission, a consumer can also appeal in the state and then in national-level commissions.

Learn to be a Well-informed Consumer

- Consumers who are aware of their rights can make informed choices when purchasing goods and services, enabling them to discriminate and make informed choices.
- The enactment of COPRA has led to the setting up of separate **Departments of Consumer Affairs** in central and state governments.

Taking the Consumer Movement Forward

- India has been celebrating **National Consumers' Day on December 24**, marking the enactment of the **Consumer Protection Act in 1986.**
- India is one of the nations with exclusive jurisdiction over consumer disputes.
- In India, there has been some progress made in the consumer movement in terms of the number of organised groups and their activities.
- In the country today, there are more than 2000 consumer groups, but only 50 to 60 of them are effectively organised and respected for their efforts.
- However, the **procedure** for consumer complaints is growing more onerous, pricey, and **time-consuming**. Consumers frequently need to hire attorneys. These cases need additional time for filing, attending commission hearings, etc.
- Since cash memos are rarely issued during purchases, gathering evidence might be challenging. Additionally, the majority of market transactions are modest retail sales.
- To further bolster Indian consumers, the **COPRA was amended in 2019**. Internet shopping is now included under it.

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- The service provider or manufacturer is also held accountable and may face fine or even imprisonment if there is any product or service flaw.
- All three tiers of consumer commissions now support the use of mediators to resolve disputes with the aid of an impartial third party outside the Consumer Disputes Redressal Commission.
- After more than 30 years since COPRA's passage, consumer awareness is steadily growing in India.
- There is scope for consumers to realise their role and importance. It is often said that consumer movements can be effective only with the **consumers' active involvement.** It requires a voluntary effort and struggle involving the participation of one and all.

Conclusion

Consumer behaviour refers to the acquisition, consumption, and disposal of products, services, time, and ideas by decision-making units. **Neo liberal era,** after LPG reforms has shown the complexity of markets. The pricing of the goods and the consumer's income determine what the consumer can afford to purchase. A thorough understanding of consumer behaviour as well as consumer rights is very important along with the evolution of Consumer laws.

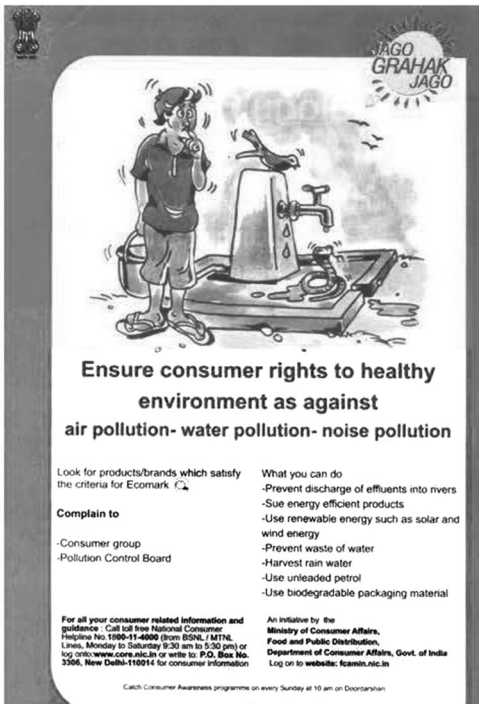

Figure 2.19: Awareness about Consumer Rights

Glossary

- **Budget Line:** It consists of all bundles which cost exactly equal to the consumer's income.
- **Consumer Rights:** The right to have information about the quality, potency, quantity, purity, price and standard of goods or services
- **Demand**: The consumer's desire and willingness to buy a product or service at a given period or overtime
- **Demand Curve:** It is a graphical representation of the demand function. It gives the quantity demanded by the consumer at each price.
- **Demand Function:** A consumer's demand function for a good gives the amount of the good that the consumer chooses at different levels of its price when the other things remain unchanged.
- **Inferior Good:** A good for which the demand decreases with an increase in the income of the consumer is called an inferior good.
- **Law of Demand:** If a consumer's demand for a good moves in the same direction as the consumer's income, the consumer's demand for that good must be inversely related to the price of the good.
- **Marginal Utility (MU):** It is the change in total utility due to the consumption of one additional unit of a commodity
- **Monotonic Preferences:** A consumer's preferences are monotonic if and only if between any two bundles, the consumer prefers the bundle which has more of at least one of the goods and no less of the other good as compared to the other bundles.
- **Normal Good:** A good for which the demand increases with an increase in the income of the consumer is called a normal good.
- **Price Elasticity of Demand for a Good:** It is defined as the percentage change in demand for the good divided by the percentage change in its price.
- **Price Elasticity of Supply:** It is the percentage change in quantity supplied due to a one per cent change in the market price of the good.

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Production and Costs

Bibliography: This chapter encompasses the summary of Chapter 3 of Class XII NCERT (Introductory Microeconomics)

Introduction

Production is the process by which inputs are transformed into 'output'. Production is carried out by producers or firms. A firm acquires **different inputs** like labour, machines, land, raw materials etc. It uses these inputs to produce output. In order to acquire inputs a firm has to pay for them. This is called the **cost of production**. Once output has been produced, the firm sells it in the market and earns revenue. The difference between the revenue and cost is called the firm's **profit**. We assume that the objective of a firm is to earn the **maximum profit** that it can. In this chapter, we will discuss the relationship between inputs and output and the cost structure of the firm to identify the output at which the firm's profits are maximum.

Production Function

- The production function of a firm is a relationship between inputs used and output produced by the firm. For various quantities of inputs used, it gives the maximum quantity of output that can be produced.
  - **Ex:** Suppose a farmer uses land and labour to produce wheat. A production function tells us the maximum amount of **wheat (Q)** he can produce for a given amount of **land (K)** that he uses, and a given number of hours of **labor (L)** that he performs i.e., **(Q = K × L)**.
- So, the production function tells us the exact relation between inputs and output. If either K or L increases, (Q) will also increase.
- It deals only with the efficient use of inputs. Efficiency implies that it is not possible to get any more output from the same level of inputs.
- **Technology Influence Production Function:** It is the technological knowledge that determines the maximum levels of output that can be produced using different combinations of inputs. If the technology improves, the maximum levels of output attainable for different input combinations increase.
- **Factors of Production:** The inputs that a firm uses in the production process are called factors of production. In order to produce output, a firm may require any number of different inputs. However, for the time being, here we consider a firm that produces output using only two factors of production, labour and capital.
  - For the maximum quantity of output (q) using two factors of production Labour (L) and Capital (K), we may write the production function as **q = f (L, K).** Refer to Figure 3.1, for different values of the two factors, the table shows the corresponding output levels.
  - It shows that both inputs are necessary for the production. If any of the inputs becomes zero, there will be no production. With both inputs positive, the output will be positive. As we increase the amount of any input, output increases.

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Factor		Capital						
		0	1	2	3	4	5	6
Labour	0	0	0	0	0	0	0	0
	1	0	1	3	7	10	12	13
	2	0	3	10	18	24	29	33
	3	0	7	18	30	40	46	50
	4	0	10	24	40	50	56	57
	5	0	12	29	46	56	58	59
	6	0	13	33	50	57	59	60

Figure 3.1: Production Function

Isoquant

Consider a production function with two inputs labour and capital. An isoquant is the set of all possible combinations of the two inputs that yield the same maximum possible level of output. Each isoquant represents a particular level of output and is labelled with that amount of output.

When marginal products are positive, with greater amount of one input, the same level of output can be produced only using lesser amount of the other. Therefore, isoquants are negatively sloped. Refer to figure 3.2.

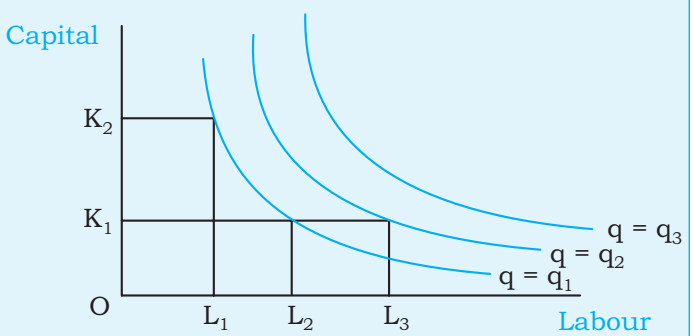

Figure 3.2: Isoquant

The Short Run and The Long Run

- **Short Run:** In the short run, at least one of the factors - labor or capital - cannot be varied, and therefore, **remains fixed**. In order to vary the output level, the firm can vary only the other factor. The factor that remains fixed is called the fixed factor whereas the other factor which the firm can vary is called the variable factor.
- **Long Run:** In the long run, all factors of production can be **varied.** A firm in order to produce different levels of output in the long run may vary both inputs simultaneously. So, in the long run, there is no fixed factor.

Total Product, Average Product and Marginal Product

Total Product

- When we vary a single input and keep all other inputs constant. Then for different levels of that input, we get different levels of output. This relationship between the variable input and output, keeping all other inputs constant, is often referred to as the **Total Product (TP) of the variable input.** This is also sometimes called total return to or total physical product of the variable input.

$$AP_L = \frac{TP_L}{L}$$

$$MP_L = \frac{\text{Change in output}}{\text{Change in input}}$$

$$= \frac{\Delta TP_L}{\Delta L}$$

Figure 3.3: Average Product and Marginal product

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Average Product

- It is defined as the output per unit of variable input. We calculate it as APL (Refer to Figure 3.3)

Labour	TP	MP_L	AP_L
0	0	-	-
1	10	10	10
2	24	14	12
3	40	16	13.33
4	50	10	12.5
5	56	6	11.2
6	57	1	9.5

Figure 3.4: Total Product, Marginal product and Average product

Marginal Product

- Marginal product of an input is defined as the change in output per unit of change in the input when all other inputs are held constant. When capital is held constant, the marginal product of labour (MPL) is (Refer to Figure 3.3).
- Since inputs cannot take negative values, marginal product is undefined at zero level of input employment. For any level of an input, the sum of marginal products of every preceding unit of that input gives the total product. So **total product** is the **sum of marginal products.**
- The average product of an input at any level of employment is the a**verage of all marginal products** up to that level. Average and marginal products are often referred to as **average and marginal returns**, respectively, to the variable input.

The Law of Diminishing Marginal Product and the Law of Variable Proportions

Factor proportions: It represent the ratio in which the two inputs are combined to produce output.

Law of Diminishing Marginal Product

Law of Diminishing Marginal Product states that if we keep increasing the employment of an input, with other inputs fixed, eventually a point will be reached after which the resulting addition to output (i.e., marginal product of that input) will start falling.

Law of Variable Proportions

- According to the law of variable proportion, the marginal product of a factor input initially rises with its employment level. But after reaching a certain level of employment, it starts falling.
- **Reason:** As we hold one factor fixed and keep increasing the other, the factor proportions change. Initially, as we increase the amount of the variable input, the factor proportions become more and more suitable for the production and marginal product increases. However, after a certain level of employment, the production process becomes

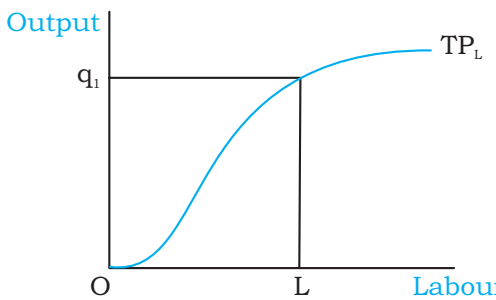

Fig. 3.5: Shapes of Total Product, Marginal Product and Average Product Curves are held constant, it shows the different output levels obtainable from different units of labour.

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too crowded with the variable input Both are closely related concepts and are often used interchangeably, but they are not precisely the same. Law of Diminishing Marginal Product is a specific aspect or a subset of the broader concept known as the Law of Variable Proportions. The Law of Variable Proportions includes the idea that as you change the proportions of inputs while holding some constant, you may encounter different outcomes (increasing, decreasing, or constant returns to scale), including diminishing marginal returns.

Shapes of Total Product, Marginal Product and Average Product Curves

- An increase in the amount of one of the inputs keeping all other inputs constant results in an increase in output. The total product curve in the input-output plane is a positively sloped curve. **Refer to Figure 3.5** which shows the shape of the total product curve for a typical firm.

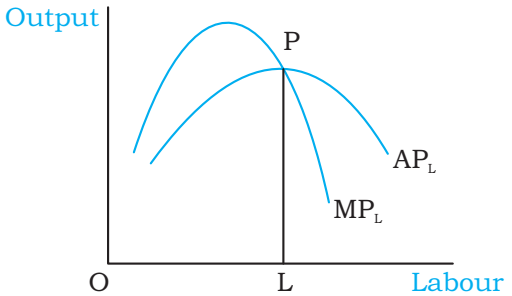

Figure 3.6: Average and Marginal Product. These are average and marginal product curves of labour

- According to the law of variable proportions, the marginal product of an input initially rises and then after a certain level of employment, it starts falling. The MP curve, therefore, looks like an **inverse 'U'-shaped** curve as in **Figure 3.6.**
- As we increase the amount of input, the MP rises. AP being the average of marginal products, also rises but rises less than MP. Then, after a point, the MP starts falling. However, as long as the value of MP remains higher than the value of the AP, the AP continues to rise. Once MP has fallen sufficiently, its value becomes less than the AP and the AP also starts falling. So the AP curve is also **inverse 'U'-shaped**.

POINTS TO PONDER

According to the Law of Diminishing Marginal Product, the tendency of the marginal product (MP) to **first increase and then fall** is called the **law of diminishing marginal product**. Can you think of the reasons why this happens? Can you also think of other similar examples where increased input after a point has no effect or negative effect?

Returns to Scale

- The law of variable proportions arises because factor proportions change as long as one factor is held constant and the other is increased. One special case in the long run occurs **when both factors are increased** by the same proportion, or factors are scaled up.
- There are three types of scale:
  - **Constant returns to scale (CRS):** When a proportional increase in all inputs results in an increase in output by the same proportion, the production function is said to display **Constant returns to scale (CRS).**
  - **Increasing Returns to Scale (IRS)**: When a proportional increase in all inputs results in an increase in output by a larger proportion, the production function is said to display **Increasing Returns to Scale (IRS)**.

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✧ **Decreasing Returns to Scale (DRS)** holds when a proportional increase in all inputs results in an increase in output by a smaller proportion.

✤ For example, suppose in a production process, all inputs get doubled. As a result, if the output gets doubled, the production function exhibits CRS. If output is less than doubled, the DRS holds, and if it is more than doubled, the IRS holds.

Cobb-Douglas Production Function

Consider a production function

$$q = x_1^{\alpha} x_2^{\beta}$$

where α and β are constants. The firm produces q amount of output using x_1 amount of factor 1 and x_2 amount of factor 2. This is called a **Cobb-Douglas production function**. Suppose with $x_1 = \bar{x}_1$ and $x_2 = \bar{x}_2$, we have q_0 units of output, i.e.

$$q_0 = \bar{x}_1^{\alpha}\, \bar{x}_2^{\beta}$$

If we increase both the inputs t ($t > 1$) times, we get the new output

$$q_1 = (t\bar{x}_1)^{\alpha}(t\bar{x}_2)^{\beta}$$
$$= t^{\alpha+\beta}\, \bar{x}_1^{\alpha}\, \bar{x}_2^{\beta}$$

When $\alpha + \beta = 1$, we have $q_1 = tq_0$. That is, the output increases t times. So the production function exhibits CRS. Similarly, when $\alpha + \beta > 1$, the production function exhibits IRS. When $\alpha + \beta < 1$ the production function exhibits DRS.

Costs

✤ In order to produce output, the firm needs to employ inputs. However a given level of output, typically, can be produced in many ways. For every level of output, a firm chooses the least cost input combination.

✤ Thus the cost function describes the least cost of producing each level of output given the prices of factors of production and technology.

Short Run Costs

✤ In the short run, some of the factors of production cannot be varied, and therefore, remain fixed. The cost that a firm incurs to employ these fixed inputs is called the **total fixed cost (TFC).** Whatever amount of output the firm produces, this cost remains fixed for the firm.

✤ To produce any required level of output, the firm, in the short run, can adjust only variable inputs. Accordingly, the cost that a firm incurs to employ these variable inputs is called the **total variable cost (TVC)**. Adding the fixed and the variable costs, we get the **total cost (TC)** of a firm i.e., **TC = TVC + TFC.**

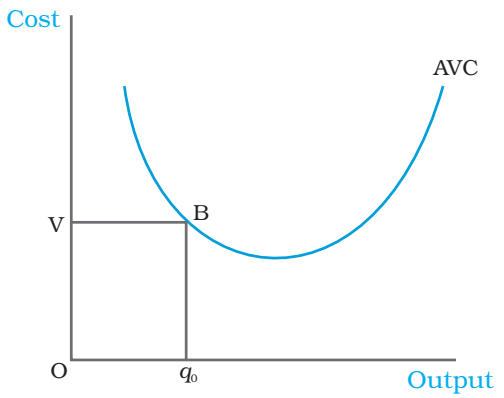

Figure: 3.7: The Average Variable Cost Curve.

✤ The **short-run average cost (SAC)** incurred by the firm is defined as the total cost per unit of output. We calculate it as SAC = TC/q.

✤ Similarly, the **average variable cost (AVC)** is defined as the total variable cost per unit of output. We calculate it as AVC = TVC/q.

✤ Also, the **average fixed cost (AFC)** is AFC = TFC/q. So, clearly **SAC = AVC + AFC**

✤ The short run marginal cost (SMC) is defined as the change in total cost per unit of change in output

$$SMC = \frac{change\ in\ total\ cost}{change\ in\ output} = \frac{\Delta TC}{\Delta q}$$

where Δ represents the change of the variable.

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Long Run Costs

- In the long run, all inputs are variable. There are no fixed costs. The total cost and the total variable cost, therefore, coincide in the long run. Long-run average cost (LRAC) is defined as cost per unit of output, i.e. LRAC = TC/q.
- **Long-run marginal cost (LRMC)** is the change in total cost per unit of change in output.
- Just like the short run, in the long run, the sum of all marginal costs up to some output level gives us the total cost at that level.

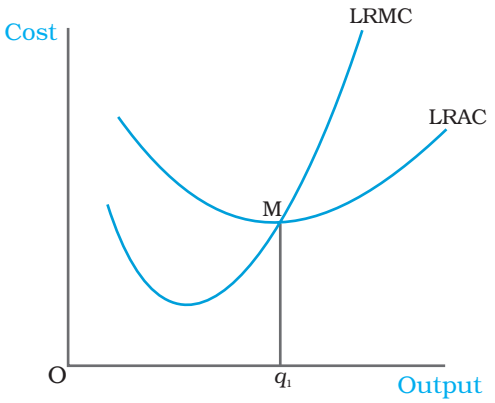

Figure: 3.8 Long Run Costs. Long run marginal cost and average cost curves.

Conclusion

In this chapter, we have discussed the problem of variable inputs, output and cost associated with a product in a firm. For different combinations of inputs, the production function shows the maximum quantity of output that can be produced. In the short run, some inputs cannot be varied and in the long run, all inputs can be varied. In order to produce output, the firm chooses least cost input combinations.

Glossary

- **Marginal Product:** The marginal product of an input is defined as the change in output per unit of change in the input when all other inputs are held constant.
- **Total product:** It is the relationship between a variable input and output when all other inputs are held constant.
- **Production function:** It refers to a relationship between inputs used and output produced by the firm.
- **Cost of production:** The cost incurred by the producer for inputs in a production process is called the cost of production.
- **Total cost:** It is the sum of total variable cost and the total fixed cost.
- **Average cost:** It is the sum of average variable cost and average fixed cost.
- **Profit:** The difference between the revenue and cost is called the firm's profit.
- **Isoquant:** An isoquant is the set of all possible combinations of the two inputs that yield the same maximum possible level of output.

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The Theory of Firm under Perfect Competition

Bibliography: This chapter encompasses the summary of Chapter 4 of Class XII NCERT (Introductory Microeconomics)

Introduction

This chapter pivots towards a distinct inquiry, how does a firm determine the quantity to produce? The exploration of this question is far from simple or uncontested, hinging on a critical, although somewhat unreasonable, assumption that a firm is a ruthless profit maximizer. Under this premise, a firm's production and sales in the market are tailored to the pinnacle of profit maximisation. It's also posited that whatever a firm produces is sold in the market, allowing for the terms 'output' and 'quantity sold' to be used interchangeably.

Perfect Competition

- In order to analyze a firm's profit maximization problem, the market environment in which the firm functions needs to be analysed. For this, a market environment called perfect competition needs to be studied.
- A perfectly competitive market has the following defining features:
  - The market consists of a large number of buyers and sellers.
  - Each firm produces and sells a homogenous product. i.e., The product of one firm cannot be differentiated from the product of any other firm.
  - Entry into the market as well as exit from the market are free for firms.
  - The information is perfect.

Revenue

- Revenue is the money that is produced by carrying out normal business operations and is calculated by multiplying the average sales price by the number of items sold.
- In a perfectly competitive market scenario, a firm's revenue dynamics are largely dictated by the prevailing market price.

Here is a detailed breakdown of the revenue concepts and their implications under perfect competition:

Price Setting Mechanism

- Firms can sell any quantity of their goods at or below the market price.
- However, setting a price below the market price is illogical as firms can sell all their produce at the market price.

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Total Revenue (TR)

- Total Revenue is derived from the product of the market price (p) and the quantity of the goods produced and sold (q), expressed as:

$$\mathbf{TR} = p \times q$$

- For example, in a perfectly competitive market for candles priced at Rs. 10 per box, the total revenue from selling two boxes is Rs. 20.

Total Revenue Curve

- The Total Revenue Curve, as illustrated in Figure 4.1, plots the quantity sold (on the x-axis) against revenue earned (on the y-axis).
- Three notable observations from the Total Revenue Curve:
  - At zero output, the total revenue is also zero, hence the curve passes through point O.
  - The curve represents a straight, upward-rising line, given the constant market price.
  - The slope of this line is equal to the market price (p), deduced from the ratio of vertical height (Aq_1) to horizontal distance (Oq_1) when the output is one unit.

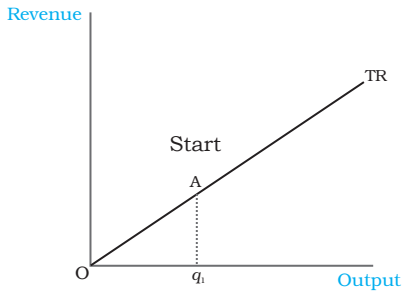

Figure. 4.1: Total Revenue curve. The total revenue curve of a firm shows the relationship between the total revenue that the firm earns and the output level of the firm. The slope of the curve. Aq_1/Oq_1, is the market price.

Average Revenue (AR)

- Average Revenue is defined as the total revenue per unit of output, expressed as AR = p.
- It's noted that for a price-taking firm, average revenue equates to the market price.
- Figure 4.2 visually represents the following key points in a perfectly competitive market.
- A horizontal Price Line intersects the y-axis at the market price (p), also representing the **Average Revenue (AR) curve**, indicating AR = p for any given output.
- This **Price Line** embodies a perfectly elastic demand curve, illustrating a firm's ability to sell any quantity at the market price.
- The consistency of the Price Line across different output levels emphasizes the constant market price, underscoring the price-taking behavior of firms in such a market setting.

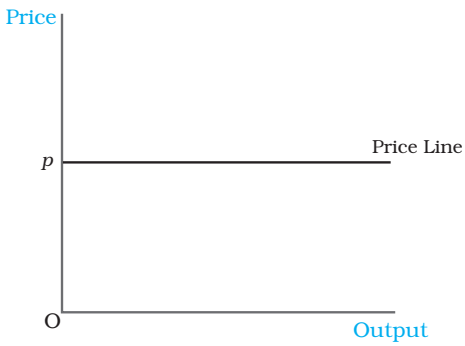

Figure. 4.2: Price Line. The price line shows the relationship between the market price and a firm's output level. The vertical height of the price line is equal to the market price, p.

Price Line and Demand Curve

- The Price Line, synonymous with the Average Revenue curve under perfect competition, is a horizontal straight line at the market price level on the y-axis, depicting a perfectly elastic demand curve faced by a firm.
- This suggests that a firm can sell any quantity of goods at the market price.

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Marginal Revenue (MR)

- The marginal revenue (MR) of a firm is defined as the increase in total revenue for a unit increase in the firm's output.
- It is calculated as the change in total revenue divided by the change in quantity, expressed as
  - Consider a situation where the firm's output is increased from q_0 to q_0 + 1. Given market price p, notice that MR = (TR from output q_0 + 1) – (TR from output q_0) = (p (q_0 + 1))–(p q_0) = p
  - In other words, for a price-taking firm, marginal revenue equals the market price. Thus, for the perfectly competitive firm, MR = AR = p
  - For instance, with total revenues of Rs 20 and Rs 30 from selling 2 and 3 boxes of candles respectively, the marginal revenue from selling an extra box is Rs 10, which equals the market price.
  - This is not coincidental but inherent to a perfectly competitive market, where MR = AR = p
- The alignment of Marginal Revenue with the market price is intuitive—when a firm sells an additional unit of output, the increase in total revenue, or the Marginal Revenue, is precisely the market price as each unit q_0 is sold at this fixed price.

Profit Maximisation

Profit maximization means increasing profits by business firms using a proper strategy to equal marginal revenue and marginal cost.

- Profit maximization is a fundamental goal for firms, driving their production and selling decisions. The profit of a firm is determined by the difference between its **Total Revenue (TR) and Total Cost of production (TC),** expressed as = TR − TC.
- This difference represents the firm's earnings net of costs. The objective is to find the quantity q_0 at which profits are maximized. Here's how the firm navigates this objective:
- At quantity profit maximization quantity (q_0), the firm's profit reaches its pinnacle. Any other quantity would result in lesser profits compared to q_0.

Conditions for Profit Maximisation

Three cardinal conditions must be satisfied at q_0 to achieve profit maximization:

- **Price Equals Marginal Cost:** The price (p) should be equal to the Marginal Cost (MC).
- **Non-Decreasing Marginal Cost:** Marginal Cost should be non-decreasing at q_0.
- **Price and Average Cost Relations**
  - **Short Run:** In the short run, the price should be greater than the Average Variable Cost (p>AVC).
  - **Long Run:** In the long run, the price should be greater than the Average Cost (p>AC).

Condition-1

Profits are defined as the difference between total revenue and total cost.

Relation Between Output, Revenue, and Cost

- Output is the amount of something that is produced by a person or thing, whereas cost is the price of something or the amount of money needed to pay for or buy something.
- Both total revenue and total cost are observed to increase as the level of output increases.
- The change in total revenue per unit increase in output is termed the marginal revenue (MR), while the change in total cost per unit increase in output is termed the marginal cost (MC).

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- **Case-1:** Profits will continue to increase as long as the marginal revenue (MR) is greater than the marginal cost (MC).
- **Case-2:** Conversely, profits will decrease when the marginal revenue (MR) is less than the marginal cost (MC).

Profit Maximisation Condition

- Profits are maximised at the level of output (denoted as q_0) where marginal revenue (MR) equals marginal cost (MC), i.e., MR=MC.

Perfect Competition Scenario

- In a perfectly competitive market scenario, it's established that marginal revenue (MR) is equal to the price (P) of the product.
- Therefore, the profit-maximizing output level is where the price (P) equals the marginal cost (MC), i.e., P=MC.

Condition-2

The second condition for profit maximisation is that the output level is positive. The focus is on the slope of the marginal cost curve at the profit-maximizing output level.

Marginal Cost Curve Slope Significance

- It's highlighted that a downward-sloping marginal cost curve at the profit-maximizing output level is not feasible.
- The output levels q_1 and q_4 refer to Figure 4.3. At both output levels q_1 and q_4, the market price equates to the marginal cost.
- However, at output level q_1, the marginal cost curve is downward sloping, which is argued to be incompatible with profit maximisation. For all output levels slightly left of q_1, the market price is found to be lower than the marginal cost.

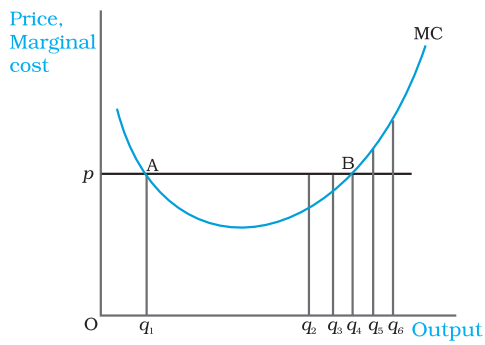

Figure. 4.3: Conditions 1 and 2 for profit maximisation. The figure is used to demonstrate that when the market price is p, the output level of a profit-maximising firm cannot be q_1 (marginal cost curve, MC, is downward sloping), q_2 and q_3 (market price exceeds marginal cost), or q_5 and q_6 (marginal cost exceeds market price).

Drawing from the argument in Condition-1, it's inferred that the firm's profit at an output level in Condition-2 slightly smaller than q1 surpasses the profit at output level q_1.

Condition-3

Condition 3 is crucial for determining the profit-maximizing output level when it's positive, with distinct implications in the short run and long run.

Short Run Scenario (Case-1):

Price ≥ Average Variable Cost (AVC) Refer to figure **4.4.** The assertion is that a profit-maximizing firm will avoid production at an output level where the market price falls below the AVC in the short run.

Analysis at Output Level q_1

- At output level q_1, the market price p is found to be lower than the AVC.
- Total Revenue (TR) at q_1 is calculated as Price × Quantity, visually represented by the area of rectangle $OpAq_1$.

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- Total Variable Cost (TVC) at q_1 is calculated as Average variable cost × visually represented by the area of rectangle $OEBq_1$.
- The firm's profit at q_1 is given by TR−(TVC+TFC), which translates to [area of rectangle $OpAq_1$] − [area of rectangle $OEBq_1$] − [area of rectangle $OpAq_1$] − [area of rectangle $OEBq_1$] −TFC.

Profit Comparison at Zero Output

- At zero output, both TR and TVC are zero, resulting in a profit of -TFC.
- However, at q_1, the area of rectangle $OpAq_1$ is strictly smaller than the area of rectangle $OEBq_1$, leading to a profit of [area EBA*p*] − [area EBA*p*] − TFC, which is less than the profit at zero output.

Long Run Scenario (Case 2): Price ≥ Average Cost (AC) Refer to Figure 4.5

- The assertion for the long-run scenario is that a profit-maximizing firm will not produce at an output level where the market price is lower than the AC.

Analysis at Output Level q_1

- At output level q_1, the market price p is found to be lower than the (long run) AC.
- Total Revenue (TR) at q_1 is calculated as Price × Quantity, visually represented by the area of rectangle $OpAq_1$.
- Total Cost (TC) at q_1 is calculated as Average cost × Quantity, visually represented by the area of rectangle $OEBq_1$.

Profit and Loss Analysis

- Since the area of rectangle $OEBq_1$ (representing TC) is larger than the area of rectangle $OpAq_1$ (representing TR), the firm incurs a loss at output level q_1.

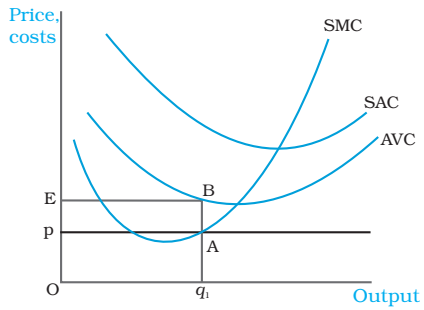

Figure. 4.4: Price-AVC Relationship with Profit Maximisation (Short Run). The figure is used to demonstrate that a profit-maximising firm produces zero output in the short run when the market price, p, is less than the minimum of its average variable cost (AVC). If the firm's output level is q_1, the firm's total variable cost exceeds its revenue by an amount equal to the area of rectangle pEBA.

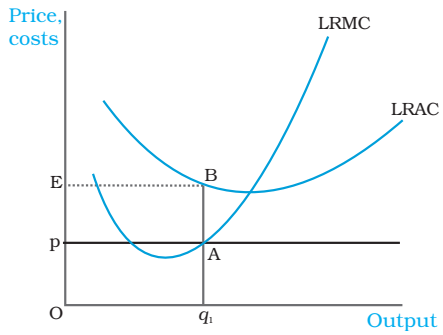

Figure. 4.5: Price-AC Relationship with Profit Maximisation (Long Run). The figure is used to demonstrate that a profit-maximising firm produces zero output in the long run when the market price, p, is less than the minimum of its long run average cost (LRAC). If the firm's output level is q_1, the firm's total cost exceeds its revenue by an amount equal to the area of rectangle pEBA.

- In the long run, a firm that ceases production achieves a profit of zero.

The Profit Maximisation Problem: Graphical Representation

- Utilising the insights from previous cases, a graphical representation is constructed to illustrate a firm's profit maximisation problem in the short run, as depicted in Figure 4.6.
- Market Price and Output Level q_0.

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- The market price is denoted as p.
- By equating the market price with the (short-run) marginal cost, the output level q_0 is obtained.
- At q_0, the Short Run Marginal Cost (SMC) is upward-sloping, and the market price *p* exceeds the Average Variable Cost (AVC).
- **Verification of Profit Maximization Conditions**
  - All three conditions discussed in previous conditions are satisfied at output level q_0, affirming q_0 as the profit-maximizing output level for the firm.
  - Revenue, Cost, and Profit Analysis at q_0:
  - Total Revenue (TR) at q_0 is represented by the area of rectangle $OpAq_0$, calculated as Price × Quantity.

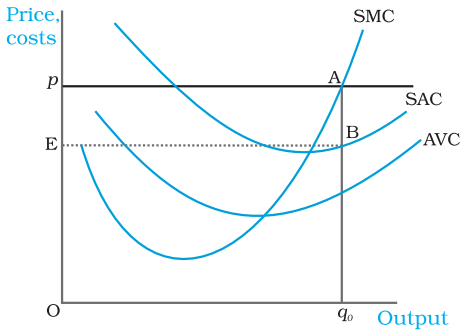

Figure. 4.6: Geometric Representation of Profit Maximisation (Short Run). Given market price p, the output level of a profit-maximising firm is q_0. At q_0, the firm's profit is equal to the area of rectangle EpAB.

  - Total Cost (TC) at q_0 is represented by the area of rectangle $OEBq_0$, calculated as the product of short-run average cost and quantity.
  - The profit earned by the firm at q_0 is equal to the area of the rectangle EpAB, which is the difference between the areas representing TR and TC.

Supply Curve of a Firm

- **Firm's Supply:** A firm supply refers to the quantity it opts to sell at a specified price, given the technology and the prices of production factors.
- **Supply Schedule:** A supply schedule is a table delineating the quantities a firm sells at various prices, with technology and prices of production factors held constant.
- **Supply Curve:** The supply curve is a graphical representation of the supply schedule. It displays the levels of output (plotted on the x-axis) that the firm decides to produce, corresponding to different market prices (plotted on the y-axis), with technology and prices of production factors remaining unchanged.

Distinguishing Between Short Run and Long Run Supply Curves

- The supply curve is bifurcated into short-run and long-run supply curves, catering to different time horizons.

Short Run Supply Curve of a Firm

- The derivation of a firm's short-run supply curve is illustrated in Figure 4.7 and is dissected into two scenarios based on the relationship between the market price and the minimum Average Variable Cost (AVC).

Case 1: Price ≥ Minimum AVC

- In this scenario, the market price, denoted as p_1, is greater than or equal to the minimum AVC.

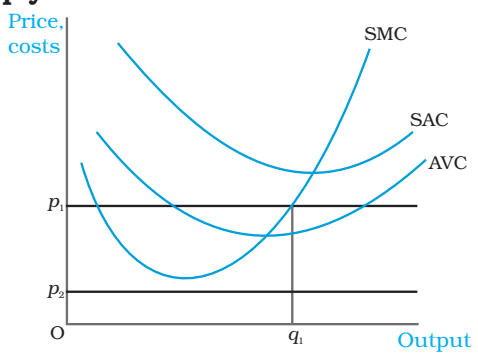

Figure. 4.7: Market Price Values. The figure shows the output levels chosen by a profit-maximising firm in the short run for two values of the market price: p_1 and p_2. When the market price is p_1, the output level of the firm is q_1; when the market price is p_2, the firm produces zero output.

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- **Derivation Process**
  - Initially, p_1 is equated with the Short Run Marginal Cost (SMC) on the ascending segment of the SMC curve, leading to the identification of output level q_1.
  - It's observed that at q_1, the AVC does not surpass the market price p_1, aligning with the conditions outlined in previous cases for profit maximisation.
  - Therefore, with the market price at p_1, the firm's short-run output level is established as q_1, satisfying all the requisite conditions for profit maximisation in the short run.

Case 2: Price < Minimum AVC

- In this scenario, the market price, denoted as p_2, is less than the minimum Average Variable Cost (AVC).
- **Analysis**
  - As per above condition, for a profit-maximizing firm to produce a positive output in the short run, the market price as p_2, must be greater than or equal to the AVC at that output level.
  - However, Figure 4.7 reveals that for all positive output levels, the AVC strictly surpasses p_2, implying that it's not feasible for the firm to supply a positive output.
  - Consequently, with the market price at p_2, the firm opts for zero output.

Combining Cases 1 and 2

- Integrating the insights from both cases leads to a significant conclusion regarding the firm's short-run supply curve.
- The firm's short-run supply curve comprises the ascending segment of the Short Run Marginal Cost (SMC) curve from and above the minimum AVC, coupled with zero output for all prices strictly below the minimum AVC.
- In Figure 4.8, the bold line delineates the short-run supply curve of the firm, encapsulating the derived relationship between market price, AVC, and the firm's output level in the short run.

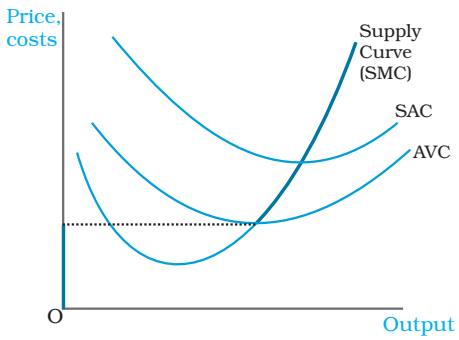

Figure. 4.8: The Short Run Supply Curve of a Firm. The short run supply curve of a firm, which is based on its short run marginal cost curve (SMC) and average variable cost curve (AVC), is represented by the bold line.

Long Run Supply Curve of a Firm

The derivation of a firm's long-run supply curve is illustrated in Figure 4.9 and is dissected into two scenarios based on the relationship between the market price and the minimum Long Run Average Cost (LRAC).

Case 1: Price ≥ Minimum LRAC

In this scenario, the market price, denoted as p_1, is greater than or equal to the minimum LRAC.

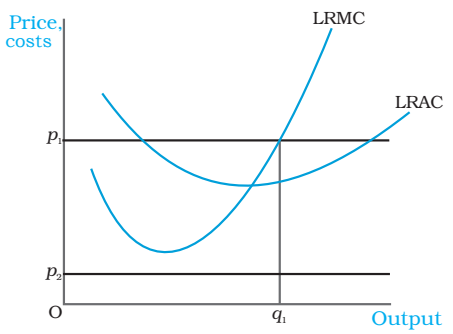

Figure. 4.9: Profit maximisation in the Long Run for Different Market Price Values. The figure shows the output levels chosen by a profit-maximising firm in the long run for two values of the market price: p_1 and p_2. When the market price is p_1, the output level of the firm is q_1; when the market price is p_2, the firm produces zero output.

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- **Derivation Process**
  - Initially, p_1 is equated with the Long Run Marginal Cost (LRMC) on the ascending segment of the LRMC curve, leading to the identification of output level q_1.
  - It's observed that at q_1, the LRAC does not surpass the market price p_1, aligning with the conditions outlined in previous discussions for profit maximization.
- **Conclusion for Case 1**
  - Therefore, with the market price at p_1, the firm's long-run output level is established as q_1, satisfying all the requisite conditions for profit maximisation in the long run.
  - The long-run supply curve of a firm is crucially dependent on the interplay between market price, LRAC, and LRMC.
  - The graphical representation in Figure 4.9 aids in visually understanding the derivation process and the conditions under which the firm decides its output level in the long run, particularly when the market price is favourable compared to the minimum LRAC.

Case 2: Price < Minimum LRAC

In this scenario, the market price, denoted as p_2, is less than the minimum Long Run Average Cost (LRAC).

- **Analysis**
  - According to previous discussions, for a profit-maximizing firm to produce a positive output in the long run, the market price, p_2, must be greater than or equal to the LRAC at that output level.
  - However, Figure 4.9 reveals that for all positive output levels, the LRAC strictly surpasses p_2, implying that it's not feasible for the firm to supply a positive output.
  - Consequently, with the market price at p_2, the firm opts for zero output.

Combining Cases 1 and 2

Integrating the insights from both cases leads to a significant conclusion regarding the firm's long-run supply curve.

Conclusion Related to Long run and Short Run Curve

- The firm's long-run supply curve comprises the ascending segment of the long-run marginal Cost (LRMC) curve from and above the minimum LRAC, coupled with zero output for all prices strictly below the minimum LRAC.
- In Figure 4.10, the bold line delineates the long-run supply curve of the firm, encapsulating the derived relationship between market price, LRAC, and the firm's output level in the long run.

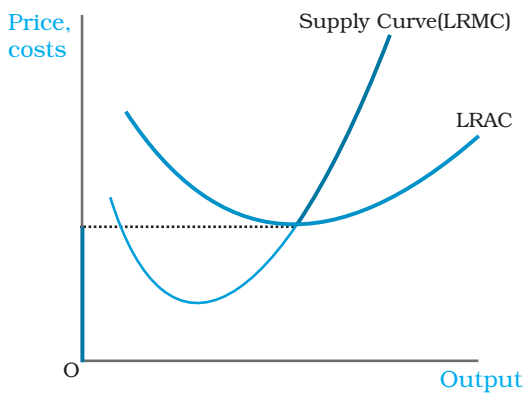

Figure. 4.10: The Long Run Supply Curve of a Firm. The long run supply curve of a firm, which is based on its long run marginal cost curve (LRMC) and long run average cost curve (LRAC), is represented by the bold line.

The Shutdown Point

The concept of the shutdown point is crucial in understanding a firm's decision to continue production or halt it based on the prevailing market price and cost condition.

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Short Run Shutdown Point

- In the short run, a firm will continue to produce as long as the market price is greater than or equal to the minimum of the Average Variable Cost (AVC).
- The last price-output combination at which the firm produces positive output, as we traverse down the supply curve, is where the Short Run Marginal Cost (SMC) curve intersects the AVC curve at the minimum of AVC.
- This specific point is termed the short-run shutdown point of the firm, beyond which the firm ceases production as it becomes unviable.

Long Run Shutdown Point

- In the long run, the shutdown point shifts and is determined by the minimum of the Long Run Average Cost (LRAC) curve.
- This reflects the firm's assessment of long-term viability, where it will cease production if the market price falls below the minimum of LRAC.

Key Takeaways

- The shutdown point is a critical indicator of a firm's threshold for continuing production, which varies between the short run and the long run due to the differing cost structures and market conditions.
- Understanding the shutdown point is essential for analysing a firm's supply behaviour and its response to market price fluctuations over different time horizons.

The Normal Profit and Break-even Point

Normal Profit

- It is defined as the minimum level of profit necessary to keep a firm operational in its current business.
- It's crucial for a firm's sustainability; without achieving normal profits, a firm is unlikely to continue its operations.
- Normal profits are considered a part of the firm's total costs, representing an opportunity cost for entrepreneurship.

Super-Normal Profit

- Any profit earned over and above the normal profit is termed as super-normal profit.
- This extra profit signifies a firm's enhanced profitability beyond just sustaining its operations.

Long Run vs. Short Run Profitability

- In the long run, a firm will cease production if it earns anything less than the normal profit, emphasizing long-term sustainability.
- Conversely, in the short run, a firm may continue to produce even if the profits are below the normal profit level, indicating short-term operational flexibility.

Break-even Point

- The break-even point is a critical juncture on the supply curve where a firm earns only normal profit, neither gaining nor losing.
- It's identified at the point of minimum average cost where the supply curve intersects the Long Run Average Cost (LRAC) curve, or the Short Run Average Cost (SAC) curve in the short-run scenario.

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Key Takeaways

- Understanding the concepts of normal profit and super-normal profit is essential for analyzing a firm's financial health and sustainability.
- The break-even point serves as a benchmark for evaluating a firm's profitability and determining its operational viability in both short and long-term scenarios.
- These concepts are graphically represented on the firm's supply curve, providing a visual insight into the firm's profitability dynamics.

Opportunity Cost

Opportunity cost is a fundamental concept in economics representing the benefits foregone from the next best alternative activity when a particular decision is made.

Illustration of Opportunity Cost

In the given scenario, you have Rs 1,000 at your disposal which you choose to invest in your family business.

The alternative uses of this money could be:

Keeping it in a house-safe yielding zero return.

Depositing it in bank-1 to earn an interest of 10%.

Depositing it in bank-2 to earn an interest of 5%.

Calculating Opportunity Cost

The highest possible benefit from the alternative activities is the 10% interest that could be earned from depositing the money in bank-1.

Once the decision to invest in the family business is made, this opportunity to earn 10% interest is foregone.

Therefore, the opportunity cost of investing Rs 1,000 in the family business is the amount of interest that could have been earned from bank-1.

Determinants of a Firm's Supply Curve

A firm's supply curve is fundamentally linked to its marginal cost curve, implying that factors affecting the marginal cost curve will, in turn, influence the supply curve.

Factors Affecting Firm's Supply Curve

Technological Progress

- In the scenario provided, a firm utilises two factors of production - Capital and Labour, to produce a specific good.
- Organizational innovation is introduced, leading to enhanced productivity where the same levels of capital and labor now yield more units of output.
- Alternatively, this innovation allows the firm to use fewer units of input to produce the same level of output.
- **Impact on Marginal Cost**
  - The technological advancement is expected to reduce the firm's marginal cost at any given level of output.
  - This is represented by a rightward (or downward) shift of the Marginal Cost (MC) curve.

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- **Effect on Supply Curve**
  - Since the supply curve is a segment of the MC curve, technological progress translates to a rightward shift in the supply curve.
  - Consequently, at any given market price, the firm is now able to supply more units of output.

Input Prices

- The supply curve of a firm is directly influenced by the prices of inputs used in production.
- **Effect of Input Price Increase**
  - An increase in the price of an input, such as the wage rate of labour, leads to a rise in the cost of production.
  - This rise in production cost subsequently results in an increase in both the firm's average cost and marginal cost at any given level of output.
- **Shift in Marginal Cost (MC) Curve**
  - The increase in marginal cost is graphically represented by a leftward (or upward) shift of the MC curve.
- **Consequent Shift in Supply Curve**
  - Due to the shift in the MC curve, the firm's supply curve also shifts to the left.
  - This shift implies that at any given market price, the firm is now able to supply fewer units of output.

Unit Tax

- A unit tax is a tax that the government imposes per unit sale of output.
- For instance, a unit tax of Rs 2 means a firm selling 10 units will pay a total tax of Rs 20 to the government.
- **Effect on Long Run Marginal and Average Cost**
  - Before the imposition of a unit tax, the firm operates at Long Run Marginal Cost ($LRMC_0$) and Long Run Average Cost ($LRAC_0$). Refer to Figure 4.11.
  - Post imposition of a unit tax of Rs t, both the long-run average cost and long-run marginal cost increase by Rs t per unit of output, transitioning to $LRMC_1$ and $LRAC_1$ respectively.
- **Alteration in Long Run Supply Curve**
  - The long-run supply curve of a firm is derived from the rising part of the LRMC curve from and above the minimum LRAC, along with zero output for all prices below the minimum LRAC.

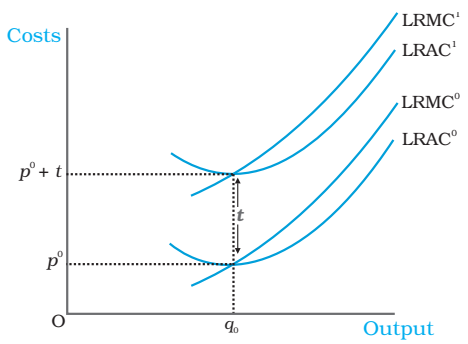

Figure. 4.11: Cost Curves and the Unit Tax. $LRAC_0$ and $LRMC_0$ are, respectively, the long run average cost curve and the long run marginal cost curve of a firm before a unit tax is imposed. $LRAC_1$ and $LRMC_1$ are, respectively, the long run average cost curve and the long run marginal cost curve of a firm after a unit tax of Rs t is imposed.

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- Upon imposition of the unit tax, the long-run supply curve shifts to the left, represented by the transition from S_0 to S_1 in Figure 4.12.
- This shift implies that at any given market price, the firm now supplies fewer units of output due to the unit tax.
- The graphical representation in Figures 4.11 and 4.12 elucidates the upward shift in cost curves and the leftward shift in the supply curve post-unit tax imposition, highlighting the tax's impact on a firm's long-run cost structure and supply behaviour.

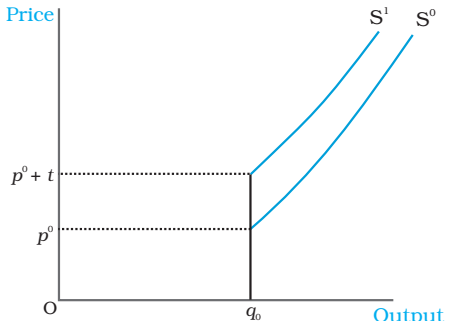

Figure. 4.12: Supply Curves and Unit Tax. S_0 is the supply curve of a firm before a unit tax is imposed. After a unit tax of Rs t is imposed, S_1 represents the supply curve of the firm.

Market Supply Curve

The market supply curve illustrates the aggregate output levels produced by firms in a market against different values of market price, with output levels on the x-axis and market prices on the y-axis.

Derivation of Market Supply Curve

- In a market with n firms, the aggregate output at a fixed market price p is the sum of the supplies of individual firms at that price.
- Geometric construction of the market supply curve can be illustrated with two firms having different cost structures.
- Firm 1 and Firm 2 have different threshold prices below which they will not produce, denoted as p_1 and p_2 respectively, with $2 > p_2 > p_1$. As shown in Figure 4.13.

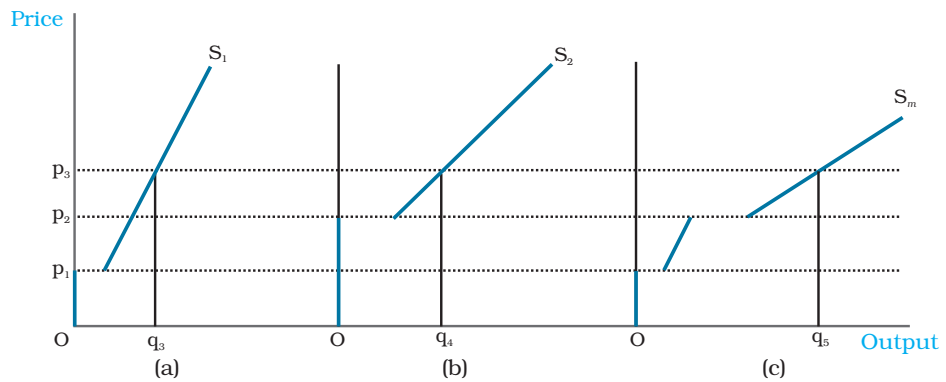

Figure. 4.13: The Market Supply Curve Panel. (a) shows the supply curve of firm 1. Panel (b) shows the supply curve of firm 2. Panel (c) shows the market supply curve, which is obtained by taking a horizontal summation of the supply curves of the two firms.

- Panels (a) and (b) show the supply curves of Firm 1 (S_1) and Firm 2 (S_2) respectively.
- Panel (c) illustrates the market supply curve (S_m) derived by horizontally summing the supply curves of the two firms.
- When the market price is below p_1, neither firm produces, hence the market supply is zero.

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- Between prices p_1 and p_2, only Firm 1 produces, making the market supply curve coincide with S_1.
- At prices equal to or above p_2, both firms produce, and the market supply is the sum of their individual supplies.

Market Supply Curve Dynamics

- The market supply curve is derived assuming a fixed number of firms.
- Changes in the number of firms shift the market supply curve: an increase in firms shifts it to the right, while a decrease shifts it to the left.
- A numerical example is mentioned to supplement the graphical analysis; it is as follows:

$$S_1(p) = \begin{cases} 0 & : p < 10 \\ p - 10 & : p \geq 10 \end{cases}$$

Notice that $S_1(p)$ indicates that (1) firm 1 produces an output of 0 if the market price, p, is strictly less than 10, and (2) firm 1 produces an output of (p – 10) if the market price, p, is greater than or equal to 10. Let the supply curve of firm 2 be as follows:

$$S_2(p) = \begin{cases} 0 & : p < 15 \\ p - 15 & : p \geq 15 \end{cases}$$

The interpretation of $S_2(p)$ is identical to that of $S_1(p)$, and is, hence, omitted. Now, the market supply curve, $S_m(p)$, simply sums up the supply curves of the two firms; in other words

$$S_m(p) = S_1(p) + S_2(p)$$

But, this means that $S_m(p)$ is as follows

$$S_m(p) = \begin{cases} 0 & : p < 10 \\ p - 10 & : p \geq 10 \text{ and } p < 15 \\ (p - 10) + (p - 15) = 2p - 25 & : p \geq 15 \end{cases}$$

Price Elasticity of Supply

- The price elasticity of the supply of goods measures the responsiveness of the quantity supplied to changes in the price of the good. More specifically, the price elasticity of supply, denoted by e_S, is defined as follows.

$$\text{Price elasticity of supply, } e_S = \frac{\text{Percentage change in quantity supplied}}{\text{Percentage change in price}}$$

$$= \frac{\frac{\Delta Q}{Q} \times 100}{\frac{\Delta P}{P} \times 100} = \frac{\Delta Q}{Q} \times \frac{P}{\Delta P}$$

Where ΔQ is the change in quantity of the good supplied to the market as market price changes by ΔP.

- When the supply curve is vertical, supply is completely insensitive to price and the elasticity of supply is zero. In other cases, when the supply curve is positively sloped, with a rise in price, supply rises, and hence, the elasticity of supply is positive. Like the price elasticity of demand, the price elasticity of supply is also independent of units.

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The Geometric Method

- The Geometric Method is used to analyse the price elasticity of supply on a straight-line supply curve. Figure 4.14 is referenced to explain the concept through three different panels (a), (b), and (c), each showing different scenarios of a supply curve and the corresponding price elasticity at point S on the curve.

Panel (a) Analysis

- The supply curve is a straight line intersecting the price axis in its positive range and extending to cut the quantity axis at point M in its negative range.
- Point S on the supply curve is analysed for price elasticity, calculated as the ratio $\frac{Mq_0}{Oq_0}$.
- The scenario demonstrates that $Mq_0 > Oq_0$, resulting in a price elasticity greater than 1 at any point on this supply curve.

Panel (b) Analysis

- In this panel, the supply curve is a straight line passing through the origin, implying point M coincides with the origin, making $Mq_0 = Oq_0$.
- The price elasticity at point S is calculated as $\frac{Oq_0}{Oq_0} = 1$.

This denotes that at any point on a straight-line supply curve passing through the origin, the price elasticity will be one.

Panel (c) Analysis

- A straight-line supply curve is considered, with point S it, intersecting the quantity axis at point M in its positive range.
- The price elasticity at point S is again given by the ratio $\frac{Mq_0}{Oq_0}$, but now $Mq_0 < Oq_0$, leading to a price elasticity $e_s < 1$.

This holds true for any point S on this supply curve, indicating a price elasticity of less than 1 at all points.

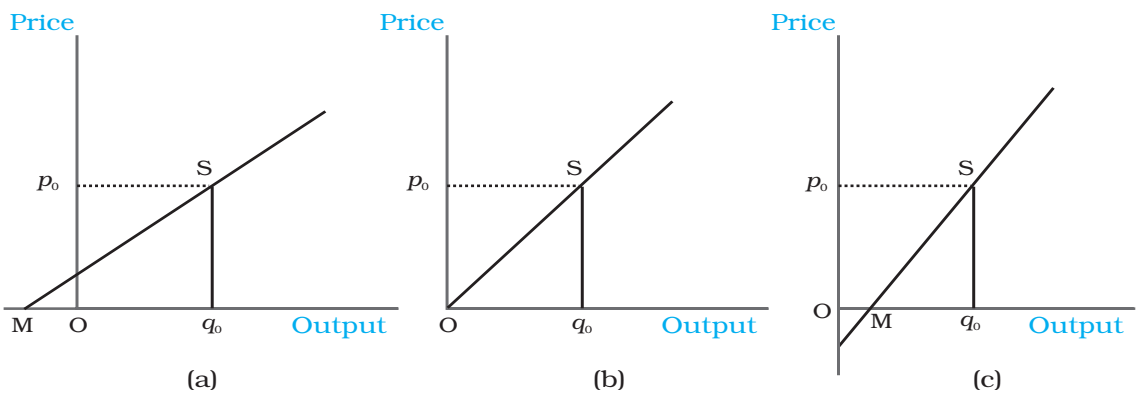

Figure.: 4.14: Price Elasticity Associated with Straight Line Supply Curves. In panel (a), price elasticity (e_s) at S is greater than 1. In panel (b), price elasticity (e_s) at S is equal to 1. In panel (c), price elasticity (e_s) at S is less than 1.

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Conclusion

In this chapter, we have discussed a firm's profit-maximizing behaviour and supply curve derivation in the short and long run, emphasising the importance of market price covering Average Variable Cost (AVC) in the short run and Average Cost (AC) in the long run. Factors like technological progress and input prices were identified as key determinants affecting the Marginal Cost (MC) curve and, consequently, the supply curve. The market supply curve was discussed as an aggregation of individual firm supply curves, shifting with changes in the number of firms in the market. Concepts of opportunity cost, normal and super-normal profits, break-even points, and shutdown points were also elucidated, providing insights into firm and market operational dynamics.

Glossary

- **Revenue:** It is the money that is produced by carrying out normal business operations and is calculated by multiplying the average sales price by the number of items sold.
- **Price mechanism:** It refers to the system where the forces of demand and supply determine the prices of commodities and the changes therein.
- **Total revenue:** It is the amount of money a business generates from the core activities, primarily sales or services.
- **Average Revenue (AR):** Average Revenue is defined as the total revenue per unit of output.
- **Marginal Revenue (MR):** Marginal Revenue is the increase in total revenue from selling an additional unit of output.
- **Marginal cost (MC)**: It is the additional cost of producing one more unit of a good or service.
- **Profit maximisation**: It means increasing profits by business firms using a proper strategy to equal marginal revenue and marginal cost.
- **Profit:** It refers to the revenue left over after expenses are accounted for.
- **Firm's Supply:** A firm's 'supply' refers to the quantity it opts to sell at a specified price, given the technology and the prices of production factors.
- **Average cost:** It is the per-unit cost of production. It's calculated by dividing the total cost of production by the total number of units produced.
- **Price elasticity:** It measures how much people react to a change in the price of an item.

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Market Equilibrium

Bibliography: This chapter encompasses the summary of Chapter 5 Class XII NCERT (Introductory Microeconomics).

Introduction

Previously, we learned about **individual demand curves**, which show how much a consumer is willing to buy at different prices. The **market demand curve** shows the total quantity consumers are willing to purchase at various prices. We also explored **individual firm supply curves**, indicating how much a profit-maximising firm wants to sell at different prices. The market supply curve reflects the total quantity all firms wish to supply at various prices.

In this chapter, we combine consumer and firm behaviour to analyze market equilibrium through demand and supply analysis. We will determine the price at which equilibrium occurs and investigate the impacts of shifts in demand and supply on this equilibrium. Additionally, we will examine **practical applications of demand and supply analysis**.

Equilibrium, Excess Demand, Excess Supply

- In a competitive market, both buyers and sellers pursue **self-interested goals**. Consumers aim to maximise their preferences, while firms seek to maximise profits. Importantly, these objectives align in **equilibrium**.
- Equilibrium occurs when all plans of all **consumers and firms coincide**, resulting in a **market-clearing state**.
- This means that the quantity all firms want to sell equals the quantity all consumers want to buy, making **market supply equal to market demand**.
- The price at which this equilibrium is reached is the **equilibrium price**, and the corresponding quantity bought and sold is the **equilibrium quantity**.
- Therefore, (p^*, q^*) is an equilibrium if,

  $$q^D(p^*) = q^S(p^*)$$

  where p^* is the equilibrium price, and $q^D(p^*)$ and $q^S(p^*)$ represent market demand and market supply at price p^*.
- When market supply surpasses market demand at a price, there's **excess supply**, while if market demand exceeds market supply at a price, there's **excess demand**.
- Therefore, an alternative definition of equilibrium in a perfectly competitive market is the **absence of excess demand or excess supply**.
- When market supply doesn't equal market demand, indicating a lack of equilibrium, there's a tendency for the price to change.

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Out-of-equilibrium Behaviour

- Throughout the history of economics, starting with **Adam Smith (1723-1790),** it has been argued that in a perfectly competitive market, an "**Invisible Hand**" operates to adjust prices whenever there is an imbalance in the market.
- Common intuition suggests that this "Invisible Hand" **should raise prices when there is excess demand and lower prices when there is excess supply.**
- In our analysis, we will maintain the concept of this "Invisible Hand" and assume that it effectively guides the market toward equilibrium by making these price adjustments.

Market Equilibrium: Fixed Number of Firms

We use market demand and supply curves to examine how supply and demand interact to determine market equilibrium when the number of firms is fixed.

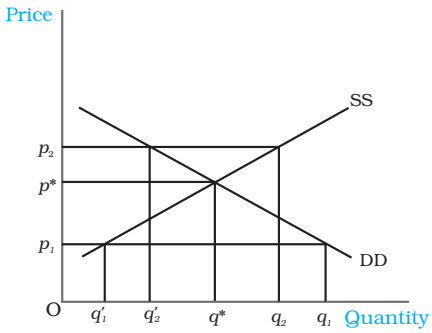

Figure 5.1: Market Equilibrium with Fixed Number of Firms

Equilibrium occurs at the intersection of the market demand curve DD and market supply curve SS. The equilibrium quantity is q* and the equilibrium price is p*. At a price greater than p*, there will be excess supply, and at a price below p*, there will be excess demand.

- Figure 5.1 depicts a perfectly competitive market with a fixed number of firms. The market supply curve (SS) shows firms' desired supply at various prices, while the demand curve (DD) represents consumers' willingness to purchase at different prices. **Equilibrium occurs where these two curves intersect**, signifying that market demand equals market supply.
- At any other point, there is either excess supply or excess demand.
- If the current price is p_1, market demand is q_1, but market supply is only q_1', resulting in excess demand equal to q_1' q_1.
- This **drives the price up** because some consumers are willing to pay more.
- **As the price rises, quantity demanded decreases, and quantity supplied increases**, gradually moving the market toward equilibrium at price p*.
- Similarly, if the price is p_2, market supply (q_2) exceeds market demand (q_2'), leading to excess supply of q_2' q_2 .
- To sell their desired output, some firms lower their prices. **As the price falls, quantity demanded rises, and quantity supplied decreases** until equilibrium is reached at price p*, where market demand matches market supply, resulting in an equilibrium price p* and the equilibrium quantity is q*.

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Let us consider the example of a market consisting of identical farms producing the same quality of wheat,

Example: Suppose the market demand curve and the market supply curve for wheat are given by:

$q^D = 200 - p$ for $0 \leq p \leq 200$

$= 0$ for $p > 200$

$q^S = 120 + p$ for $p \geq 10$

$= 0$ for $0 \leq p < 10$

Where q^D and q^S denote the demand for and supply of wheat (in kg) respectively and p denotes the price of wheat per kg in rupees. Since at equilibrium price market clears, we find the equilibrium price (denoted by p*) by equating market demand and supply and solve for p*.

$q^D(p^*) = q^S(p^*)$

$200 - p^* = 120 + p^*$

Rearranging terms,

$2p^* = 80$

$p^* = 40$

Therefore, the equilibrium price of wheat is Rs 40 per kg. The equilibrium quantity (denoted by q*) is obtained by substituting the equilibrium price into either the demand or the supply curve's equation since in equilibrium quantity demanded and supplied are equal.

$q^D = q^* = 200 - 40 = 160$

Alternatively,

$q^S = q^* = 120 + 40 = 160$

Thus, the equilibrium quantity is 160 kg. At a price less than p*, say p1 = 25

$q^D = 200 - 25 = 175$

$q^S = 120 + 25 = 145$

Therefore, at p1 = 25, $q^D > q^S$ which implies that there is excess demand at this price.

Algebraically, excess demand (ED) can be expressed as

$ED(p) = q^D - q^S$

$= 200 - p - (120 + p)$

$= 80 - 2p$

Notice from the above expression that for any price less than p*(= 40), excess demand will be positive.

Similarly, at a price greater than p*, say $p_2 = 45$

$q^D = 200 - 45 = 155$

$q^S = 120 + 45 = 165$

Therefore, there is excess supply at this price since $q^S > q^D$. Algebraically, excess supply (ES) can be expressed as

$ES(p) = q^S - q^D = 120 + p - (200 - p) = 2p - 80$

Notice from the above expression that for any price greater than p*(= 40), excess supply will be positive. Therefore, at any price greater than p*, there will be excess supply, and at any price lower than p*, there will be excess demand.

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Wage Determination in Labour Market

- In a perfectly competitive labor market, **wage determination follows the principles of supply and demand analysis.** Unlike markets for goods, households supply labor, and firms demand it. The wage rate is set where the labor supply and demand curves intersect.
- To analyze the demand for labor by a single firm, we assume that labor is the only variable input, the labor market is perfectly competitive, and the firm takes the wage rate as given. The firm operates under profit maximization and adheres to the law of diminishing marginal product.
- The firm hires labor until the additional cost (wage rate) of hiring one more unit of labor equals the additional benefit, known as the **Marginal Revenue Product of Labor (MRP_L)**. Thus, while hiring labor, the firm employs labor up to the point where

$$w = MRP_L \text{ and } MRP_L = MR \times MP_L$$

- Since we are dealing with a perfectly competitive firm, marginal revenue is equal to the price of the commoditya and hence marginal revenue product of labour in this case is equal to the value of marginal product of labour (VMP_L).
- MRP_L is calculated as the product of marginal revenue (MR) and the marginal product of labor MP_L.
- As long as the Value of Marginal Product of Labor (VMPL) is greater than the wage rate, the firm will hire more labor, increasing profit.
- Conversely, if VMP_L is less than the wage rate, the firm can increase profit by reducing labor.
- Due to the law of diminishing marginal product, the firm's labor demand curve slopes downward. **When the wage rate increases, VMP_L must also rise**, which can only happen if MPL increases.
- However, because higher wages lead to diminishing returns, the firm employs less labor, resulting in a downward-sloping demand curve.

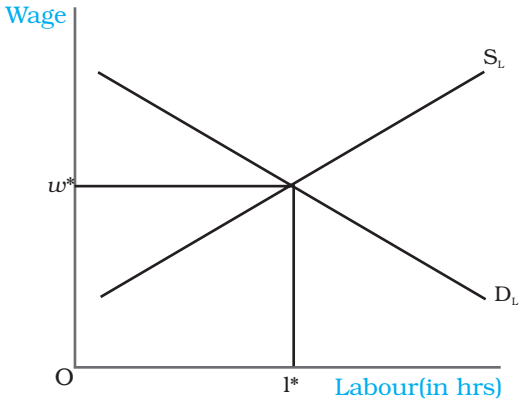

Figure 5.2: Wage is determined at the point where the labour demand and supply curves intersect.

- The market demand curve is derived by **aggregating individual firm demand curves**. Since each firm reduces labor demand as wages rise, the overall market demand curve also slopes downward.
- Turning to the supply side, households decide how much labor to provide at a given wage. This involves a trade-off between leisure and income. At low wages, people work more when wages rise, but at high wages, they work less. This leads to a **backwards-bending individual labor supply curve**.
- However, when we aggregate individual supply curves, we get an upward-sloping market supply curve for labor. Despite some individuals working less at higher wages, many others are attracted to supply more labor.
- The equilibrium wage rate is where the market supply curve intersects the market demand curve. This point signifies the balance between households' desired labor supply and firms' desired hiring, establishing market equilibrium.

Shifts in Demand and Supply

Until now, we examined market equilibrium while assuming that consumer preferences, prices of related goods, consumer incomes, technology, market size, input prices, and more remain unchanged.

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However, alterations in these factors can lead to **shifts in either the supply curve, the demand curve, or both**, consequently **influencing equilibrium price and quantity**.

Demand Shift

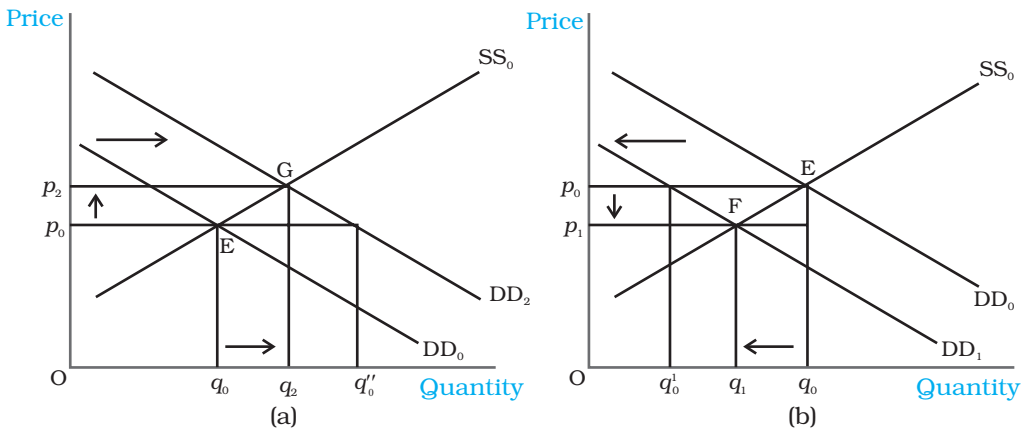

Figure 5.3: Shifts in Demand.

Initially, the market equilibrium is at E. Due to the shift in demand to the right, the new equilibrium is at G as shown in panel (a) and due to the leftward shift, the new equilibrium is at F, as shown in panel (b). With rightward shift the equilibrium quantity and price increase whereas with leftward shift, equilibrium quantity and price decrease.

- As shown in Figure 5.3, illustrating the impact of a demand shift in a fixed number of firms. Initially, the equilibrium point is E, where the market demand curve DD_0 intersects the market supply curve SS_0, resulting in equilibrium quantity q_0 and price p_0.
- Suppose the market demand curve shifts to the right, becoming DD_2 while the supply curve remains SS_0. This shift indicates increased quantity demanded at any price.
- Consequently, at price p_0, there is excess demand equal to q_0q_0''.
- To address this excess demand, some individuals are willing to pay higher prices, leading to a price increase.
- The new equilibrium is at point G, with quantity q2 greater than q0 and price p_0. p_2 greater than p_0.
- Conversely, if the demand curve shifts leftward to DD_1 , the quantity demanded at any price is now lower than before.
- Thus, at the initial equilibrium price p_0 there is excess supply equal to q_0' q_0 . In response, some firms lower their prices to sell their desired quantity.
- The new equilibrium is at point F, where the demand curve DD_1 intersects the supply curve SS_0 , resulting in a lower price p_1 and quantity q_1 compared to the initial values.
- The **direction of change in equilibrium price and quantity is the same** when there's a shift in the demand curve.

Now that we have established the general theory, let's examine how changes in specific factors affect the demand curve, equilibrium quantity, and price.

Changes in specific factors affecting demand curve, equilibrium quantity, and price: Increase in Consumers' Income:

- When consumers' incomes rise, they can spend more on certain goods.
- For normal goods (like clothes), an increase in income typically leads to increased demand, assuming constant prices and consumer preferences.

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- This increase in demand shifts the market demand curve rightward.
- However, the supply curve remains unaffected by changes in consumer income, as it primarily shifts due to factors related to technology or production costs.
- In Figure 5.3, this is illustrated by the shift of the demand curve from DD_0 to DD_2, while the supply curve (SS_0) remains unchanged.
- Consequently, the new equilibrium point (G) shows higher prices and greater quantities of clothes demanded and sold.

Increase in the Number of Consumers:

- If the number of consumers in the market for clothes increases, and other factors remain constant, the demand for clothes rises at each price level.
- This increase in demand causes a rightward shift in the demand curve.
- However, the supply curve remains unaffected by changes in the number of consumers; it typically shifts due to factors related to firms' behavior or changes in the number of firms.
- Again, the demand curve shifts from DD_0 to DD_2, while the supply curve (SS_0) remains unchanged. This leads to a new equilibrium point (G), where both price and quantity demanded and supplied increase compared to the previous equilibrium point (E).

Supply Shift

- Now, consider the scenario where, due to certain factors, the **market supply curve shifts leftward** to SS_2 while keeping the demand curve unchanged.
- This shift results in excess demand at the current price p_0, equal to q_0, $q_1''q_0$.

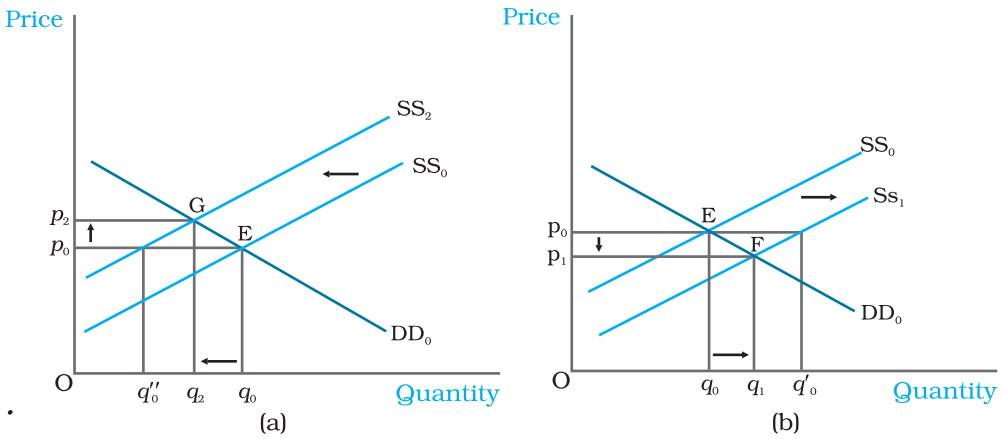

Figure 5.4: Shifts in Supply.

Initially, the market equilibrium is at E. Due to the shift in supply curve to the left, the new equilibrium point is G as shown in panel (a) and due to the rightward shift the new equilibrium point is F, as shown in panel (b). With rightward shift, the equilibrium quantity increases and price decreases whereas with leftward shift,equilibrium quantity decreases and price increases.

- Some consumers, unable to obtain the goods, are willing to pay more, driving the market price upward.
- The new equilibrium is established at point G, where the supply curve SS_2 intersects the demand curve DD_0 . This leads to a higher price p_2 and a lower quantity q_2 bought and sold.
- Conversely, when the supply curve shifts rightward, there will be an excess supply at the current price p_0, equal to q_0q_0' .
- In response, some firms lower their prices, leading to a new equilibrium at point F, where the supply curve SS1 intersects the demand curve DD_0.

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- This results in a lower price p_1 and a higher quantity q_1 bought and sold.
- Note that the directions of price and quantity changes are opposite when there is a shift in the supply curve.

Now, let's analyze the effects of changes in the market:

Changes in specific factors affecting supply curve, equilibrium quantity, and price:

Increase in Input Price:

- If the price of an input used in production rises while all other factors remain constant, the marginal cost of production for firms using this input increases.
- Consequently, at each price level, the market supply decreases, shifting the supply curve leftward.
- In Figure 5.4, this is depicted as a shift from SS0 to SS2 . However, this increase in input price does not directly affect consumer demand (represented by the unchanged DD_0 curve).
- The outcome is an increase in market price and a decrease in the quantity produced compared to the previous equilibrium.

Increase in the Number of Firms:

- When more firms enter the market, the supply curve shifts rightward because there are more suppliers at each price level.
- However, this change does not impact consumer demand (again represented by the unchanged DD_0 curve).
- In Figure 5.4, this is illustrated by the supply curve shifting from SS_0 to SS_1.
- Consequently, there will be a decrease in the price of the commodity and an increase in the quantity produced compared to the initial situation.

Simultaneous Shifts of Demand and Supply

Simultaneous shifts in both supply and demand curves can occur in four possible ways:

1. Both supply and demand curves shift rightwards.
2. Both supply and demand curves shift leftwards.
3. The supply curve shifts leftward, and the demand curve shifts rightward.
4. The supply curve shifts rightward, and the demand curve shifts leftward.

- The impact on equilibrium price and quantity for each of these scenarios is shown in Figure 5.5.

Shift in Demand	*Shift in Supply*	*Quantity*	*Price*
Leftward	Leftward	Decreases	May increase, decrease or remain unchanged
Rightward	Rightward	Increases	May increase, decrease or remain unchanged
Leftward	Rightward	May increase, decrease or remain unchanged	Decreases
Rightward	Leftward	May increase, decrease or remain unchanged	Increases

Figure 5.5: Impact of Simultaneous Shifts on Equilibrium.

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- Each row in the table outlines the expected direction of change in equilibrium price and quantity for a given combination of shifts in the supply and demand curves.
- For instance, in the second row of the table, when both supply and demand curves shift rightwards, the equilibrium quantity invariably increases.
- However, the equilibrium price may either increase, decrease, or remain unchanged, depending on the magnitudes of the shifts. You can verify this by adjusting the magnitudes of the shifts.
- In the next two cases (shown in the last two rows), the effect on price is clear, while the effect on quantity depends on the magnitude of shifts in the two curves.

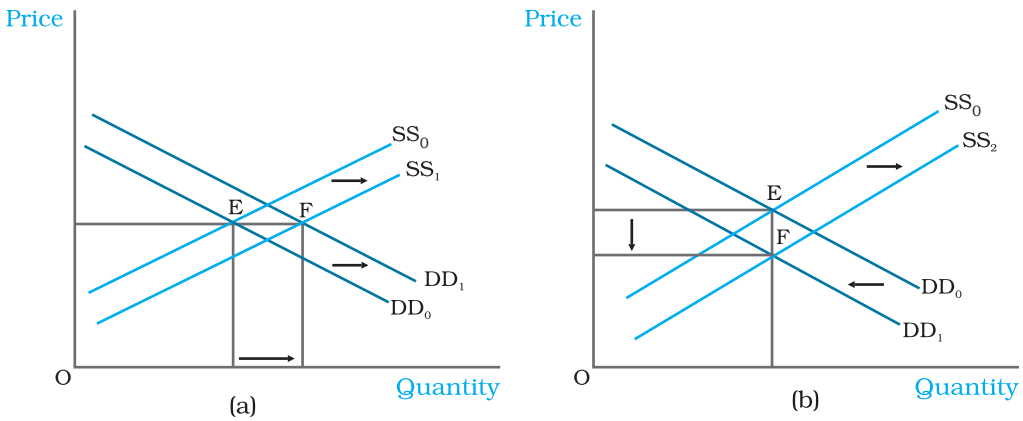

Figure 5.6: Simultaneous Shifts in Demand and Supply.

Initially, the equilibrium is at E where the demand curve DD_0 and supply curve SS_0 intersect. In panel (a), both the supply and the demand curves shift rightward leaving price unchanged but a higher equilibrium quantity. In panel (b), the supply curve shifts rightward and demand curve shifts leftward leaving quantity unchanged but a lower equilibrium price.

- As shown in the first two rows, the impact on equilibrium quantity is clear, but the equilibrium price may change in either direction depending on the magnitude of the shifts.
- In Figure 5.6 (left), we depict the scenario where both the demand and supply curves shift rightward simultaneously.
- **The equilibrium quantity increases, but the equilibrium price remains the same.**
- In Figure 5.6 (right), we illustrate a situation where the demand curve shifts leftward, and the supply curve shifts rightwards simultaneously.
- In this case, **the equilibrium quantity remains the same, but the equilibrium price decreases** due to a leftward shift in the demand curve and a rightward shift in the supply curve.

Market Equilibrium: Free Entry and Exit

- Earlier, we explored market equilibrium with a fixed number of firms. Now we will delve into market equilibrium when firms can freely enter and exit the market, assuming all firms are identical.
- The implication of this entry and exit assumption is that in equilibrium, no firm will earn a supernormal profit (profits exceeding the normal rate of return) or incur losses while staying in production.
  - In other words, the **equilibrium price will equal the minimum average cost of the firms**.

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Supernormal Profit Scenario:

- If, at the current market price, each firm is making supernormal profits, this attractive prospect **will draw new firms into the market.** As these new firms enter, the **market supply curve shifts rightward.**
- However, the **demand remains unchanged.** This influx of supply leads to a decline in market price.
- As prices drop, supernormal profits gradually disappear. At this point, with all firms in the market making only normal profits (the minimum required to cover costs), there's no longer an incentive for more firms to enter.

Below Normal Profit Scenario:

- Conversely, if firms are earning less than normal profit at the current price, some firms will exit the market. This reduction in the number of firms **increases the market price.**
- Once again, no firm will want to leave, as they are earning normal profit at this point. Hence, with the freedom for firms to enter and exit, each firm in the market will always earn normal profit at the prevailing market price. This dynamic ensures that **firms are neither earning excessive profits nor suffering losses in the long run**.
- With fewer firms, the remaining ones can now earn higher profits, eventually reaching the level of normal profit.

Equilibrium in a Market: Free Entry and Exit of Firms

- As we've discussed earlier, firms experience supernormal profits when prices exceed their minimum average costs and below-normal profits when prices fall below this cost threshold.
- Consequently, when prices are higher than the minimum average cost, new firms are incentivized to enter the market, while existing firms consider exiting when prices dip below this level.
- At the specific price where firms earn normal profits, there's no motivation for new firms to enter, and those currently operating remain in the market since they aren't incurring losses.
- This price level becomes the prevailing market price.
- Therefore, the concept of firms freely entering and exiting implies that the **market price always equals the minimum average cost,** represented as:

$$p = min\ AC$$

- In equilibrium, the quantity supplied aligns with market demand at this price, ensuring they are equal. Graphically, this equilibrium is illustrated in Figure 5.7, where the market achieves balance at point E. Here, the demand curve DD intersects with the line representing:

$$p_0 = \text{min AC}$$

- This results in the market price p_0 and a total quantity demanded and supplied equal to q_0.
- At p_0 = min AC each firm supplies the same amount of output, say $q_{0\ f}$. Therefore, the

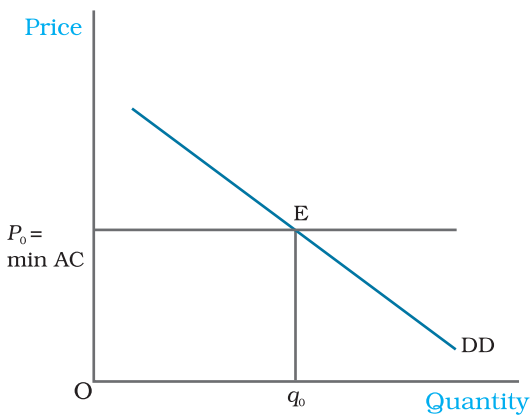

Figure 5.7: Price Determination with Free Entry and Exit. With free entry and exit in a perfectly competitive market, the equilibrium price is always equal to min AC and the equilibrium quantity is determined at the intersection of the market demand curve DD with the price line p = min AC.

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equilibrium number of firms in the market is equal to the number of firms required to supply q_0 output at p_0, each in turn supplying q_{0f} amount at that price. If we denote the equilibrium number of firms by n_0, then

$$n_0 = q_0 / q_{0f}$$

To understand the equilibrium price and quantity determination more clearly, let us look at the following example:

Example: Consider the example of a market for wheat such that the demand curve for wheat is given as follows

$q^D = 200 - p$ for $0 \leq p \leq 200$

$= 0$ for $p > 200$

Assume that the market consists of identical firms. The supply curve of a single firm is given by

$q_f s = 10 + p$ for $p \geq 20$

for $0 \leq p$ 20

The free entry and exit of firms would mean that the firms will never produce below minimum average cost because otherwise they will incur loss from production in which case they will exit the market.

As we know, with free entry and exit, the market will be in equilibrium at a price which equals the minimum average cost of the firms. Therefore, the equilibrium price is

$$p_0 = 20$$

At this price, the market will supply that quantity which is equal to the market demand. Therefore, from the demand curve, we get the equilibrium quantity:

$$q_0 = 200 - 20 = 180$$

Also at $p_0 = 20$, each firm supplies

$$q_0 = 10 + 20 = 30$$

Therefore, the equilibrium number of firms is

$$n_0 = q_0 / q_0 = 180 / 30 = 6$$

Thus, with free entry and exit, the equilibrium price, quantity and number of firms are Rs 20, 180 kg and 6 respectively.

Shifts in Demand

- Let's explore how a shift in demand affects equilibrium price and quantity in a market where firms can freely enter and exit.
- In this setting, the equilibrium price always matches the minimum average cost of existing firms, ensuring price stability.

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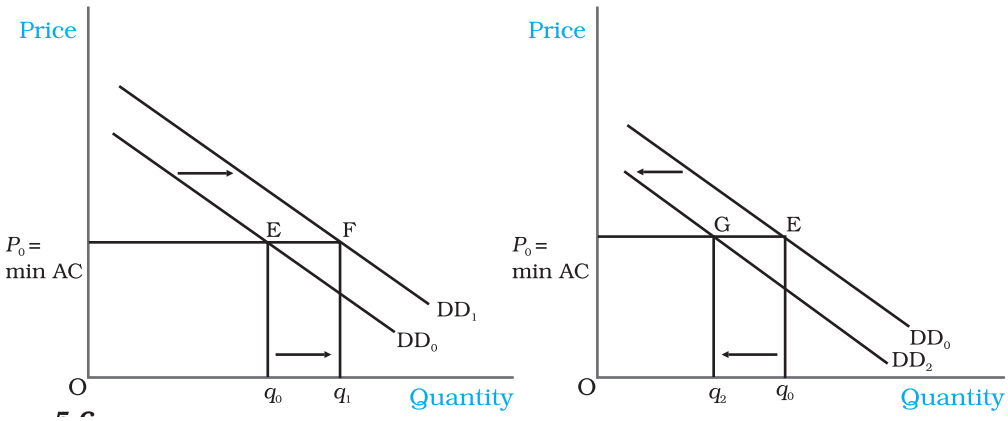

Figure 5.8: Shifts in Demand

Initially, the demand curve was DD_0, the equilibrium quantity and price were q_0 and p_0 respectively. With rightward shift of the demand curve to DD_1, as shown in panel (a), the equilibrium quantity increases and with leftward shift of the demand curve to DD_2, as shown in panel (b), the equilibrium quantity decreases. In both the cases, the equilibrium price remains unchanged at p_0.

- **Initial Equilibrium:** At point E, demand curve DD_0 intersects the p_0= minAC line, resulting in equilibrium price p_0 and quantity q_0, with n_0 firms.
- **Rightward Demand Shift:** If demand shifts rightward, creating excess demand, prices rise, attracting new firms. Competition brings prices back to p0, but with increased supply, we reach a new equilibrium (p_0, q_1), where $p_0 > q_0$, and n1 firms due to new entries.
- **Leftward Demand Shift:** A leftward demand shift leads to excess supply, causing price drops and some firms to exit. Prices stabilize at p_0 , but the equilibrium quantity decreases to q_2, with n_2 firms as some exit
- **Key Difference:** Unlike a fixed-firm scenario, shifts in demand have a more significant impact on quantity but no effect on equilibrium price when firms can freely enter and exit.

POINTS TO PONDER

In the chapter, we analyzed the various demand-supply situations which ultimately arrive at the market equilibrium. However, we considered an ideal situation where the various variables like number of firms, technology, consumer incomes, market size etc. remained constant. Can you think of several other variable factors which impact the market demand-supply?

Applications of Market Equilibrium

Government Intervention: Price Controls in Perfectly Competitive Markets

Governments often step in to regulate prices when they are deemed too high or too low compared to the desired levels. We analyze these interventions within the framework of perfect competition to understand their impact on the affected markets.

POINTS TO PONDER

The neo-liberal economic policy believes in market fundamentalism. These economists believe that the 'invisible hand' is the best and most efficient regulator of the market and demand for state non-intervention. Can you think of the need for the state and a welfare state in a fairly competitive market economy?

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Price Ceiling

- It is not uncommon for governments to set a maximum allowable price for certain goods, known as a price ceiling.
- These price ceilings are typically **imposed on essential items** like wheat, rice, kerosene, and sugar, and they are set **below the market-determined prices** to ensure affordability for a section of the population.

Let's examine the effects of a price ceiling on market equilibrium using the example of the wheat market.

- In Figure 5.9, we have the market supply curve (SS) and the market demand curve (DD) for wheat. The equilibrium price and quantity are denoted as p* and q* respectively.
- When the government imposes a price ceiling at p_c, which is lower than the equilibrium price, there is excess demand for wheat at that price.
- Consumers demand qc kilograms of wheat, while firms supply q'_c kilograms.
- This government intervention, aimed at helping consumers, can lead to a wheat shortage.
- To distribute the quantity of wheat (q'_c) among consumers, a rationing system is often employed.
- Ration coupons are issued to consumers, limiting individual purchases to a certain amount of wheat. This stipulated amount of wheat is sold through ration shops, also known as fair price shops.

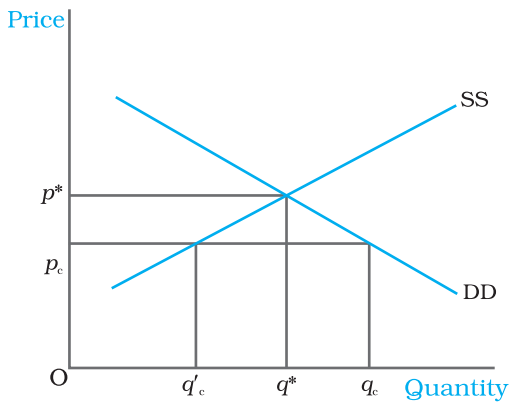

Figure 5.9: Effect of Price Ceiling in Wheat Market. The equilibrium price and quantity are p* and q* respectively. Imposition of price ceiling at pc gives rise to excess demand in the wheat market.

Price ceilings, when combined with rationing of goods, can lead to various adverse consequences for consumers:

- **Long Queues:** Consumers may be required to stand in long queues at ration shops to purchase the goods.
- **Dissatisfaction and Black Market:** Since the rationed quantity may not satisfy the needs of all consumers, some may be willing to pay a higher price to obtain additional goods. This situation can create a black market where goods are sold at prices above the government-imposed ceiling.

Price Floor

- Price floors are **government-imposed lower limits** on the prices of certain goods and services.
- Two common examples of price floors are **agricultural price support programs and minimum wage legislation.**
- They are set to ensure that the prices do not fall below a specific level, which is typically higher than the market-determined price for these goods.

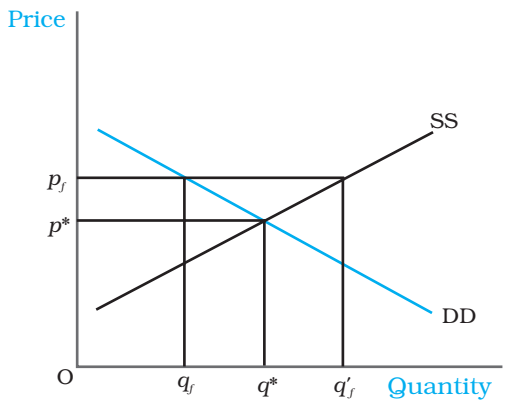

Figure 5.10: Effect of Price Floor on the Market for Goods The market equilibrium is at (p*, q*). Imposition of price floor at pf gives rise to an excess supply.

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Agricultural Price Support Programs

- In agricultural price support programs, the government sets a floor price for agricultural goods, ensuring that farmers receive a minimum price for their produce.
- This floor price is usually **higher than the market price.**
- The government may need to purchase the surplus quantity of goods at the predetermined price to prevent prices from falling due to excess supply.

Minimum Wage Legislation

- Similarly, minimum wage legislation establishes a minimum wage rate for laborers, guaranteeing that their wages do not fall below a certain level, typically above the equilibrium wage rate.
  - When a price floor is imposed, it can lead to an excess supply in the market. For example, if the floor price (p_f) is set higher than the equilibrium price (p^*), consumers demand q_f units of the commodity, while producers are willing to supply q'_f units, resulting in an excess supply of $q_f - q'_f$ units.
  - This intervention aims to support farmers by ensuring they receive a minimum income for their produce.

Key points to remember about market equilibrium in a perfectly competitive market

- Equilibrium occurs where market **demand equals market supply.**
- **Equilibrium price and quantity** are determined at the intersection of the market demand and market supply curves when the number of firms is fixed.
- Each firm employs labor until the marginal revenue product of labor equals the wage rate.
- When the demand curve shifts rightward (leftward) with the supply curve remaining unchanged, the equilibrium quantity increases (decreases), and the equilibrium price increases (decreases) with a fixed number of firms.
- When the supply curve shifts rightward (leftward) with the demand curve remaining unchanged, the equilibrium quantity increases (decreases), and the equilibrium price decreases (increases) with a fixed number of firms.
- When both demand and supply curves shift in the same direction, the effect on equilibrium quantity can be determined, but the effect on equilibrium price depends on the magnitude of the shifts.
- When demand and supply curves shift in opposite directions, the effect on equilibrium price can be determined, but the effect on equilibrium quantity depends on the magnitude of the shifts.
- **In a perfectly competitive market** with identical firms and free entry and exit, the equilibrium price is always equal to the minimum average cost of the firms.
- With **free entry and exit,** a shift in the demand curve has no impact on equilibrium price but changes the equilibrium quantity and the number of firms in the same direction as the change in demand.
- Compared to a market with a fixed number of firms, the impact of a shift in the demand curve on equilibrium quantity is more pronounced in a market with free entry and exit.
- Imposing a **price ceiling** below the equilibrium price leads to excess demand.
- Imposing a **price floor** above the equilibrium price leads to excess supply.

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Conclusion

The concept of market equilibrium is a fundamental pillar of economics, offering valuable insights into how supply and demand interact to determine prices and quantities in a competitive marketplace. As we've explored in this chapter, market equilibrium represents a state of balance where the forces of supply and demand align, resulting in stable prices and optimal allocation of resources.

Understanding market equilibrium is essential for businesses, policymakers, and consumers alike. It provides a framework for predicting price changes, assessing market efficiency, and making informed decisions. However, it's important to recognize that markets are dynamic and constantly evolving, which means that achieving and maintaining equilibrium is an ongoing process.

Glossary

- **Equilibrium:** is a situation where the plans of all consumers and firms in the market match.
- **Excess demand:** If at a price market, demand exceeds market supply, it is said that excess demand exists in the market at that price.
- **Excess supply:** If at a price market, supply is greater than market demand, it is said that there is excess supply in the market at that price.
- **Firm's supply curve:** shows the levels of output that a profit maximising firm will choose to produce at different values of the market price.
- **Fixed input:** An input which cannot be varied in the short run is called a fixed input.
- **Marginal cost:** Change in total cost per unit of change in output.
- **Marginal product:** Change in output per unit of change in the input when all other inputs are held constant.
- **Marginal revenue:** Change in total revenue per unit change in the sale of output.
- **Market supply curve:** shows the output levels that firms in the market produce in aggregate corresponding to different values of the market price.
- **Opportunity cost:** of some activity is the gain foregone from the second best activity.
- **Perfect competition:** A market environment wherein (i) all firms in the market produce the same good and (ii) buyers and sellers are price-takers.
- **Price ceiling:** The government-imposed upper limit on the price of a good or service is called the price ceiling.
- **Price elasticity of demand** for a good is defined as the percentage change in demand for the good divided by the percentage change in its price.

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Unit-II
Macroeconomics

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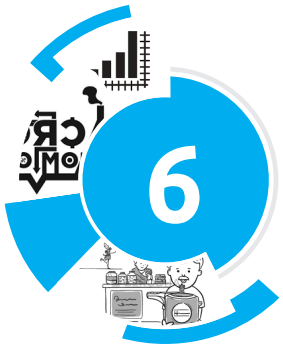

6 Basics of Macroeconomics

Bibliography: This chapter encompasses the summary of Chapter 1 and Chapter 2 of Class XII NCERT (Introductory Macroeconomics).

Introduction

Macroeconomics differs from microeconomics as the former focuses on the economy as a whole. It deals with questions like overall price trends, employment conditions, and indicators of economic health. Macroeconomics is simplified by using a single representative commodity to analyze aggregate effects, although it may consider distinct sectors when necessary. It aims to understand and influence the economy's performance through policies pursued by the State or statutory bodies, which are distinct from individual decision-makers. These policies often address societal goals, such as reducing unemployment, improving education, and ensuring defense, serving the welfare of the country and its people as a whole.

Adam Smith is regarded as the founding father of modern economics (it was known as political economy at that time). He is well-known for his work "An Enquiry into the Nature and Cause of the Wealth of Nations (1776)", is regarded as the first major comprehensive book on the subject. The Physiocrats of France were prominent thinkers of political economy before Smith.

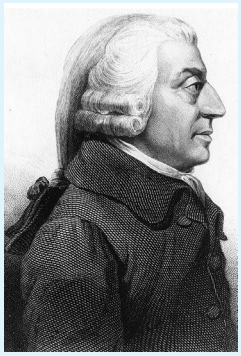

Figure 6.1 Adam Smith

Microeconomics vs Macroeconomics

- In **microeconomics**, the **focus is on individual economic agents**, including consumers and producers, who aim to maximize their profits or personal satisfaction within specific markets. These agents operate at a micro, or small, level. Even large companies act in the interest of their shareholders rather than the overall national interest.
- Microeconomics largely ignores macroeconomic phenomena like inflation and unemployment, treating them as given or not within the control of individual agents.
- The closest microeconomics gets to macroeconomics is when examining supply and demand equilibrium in individual markets.
- In contrast, **macroeconomics looks at the economy as a whole**. It originated from **Adam Smith's** idea that individual buyers and sellers pursuing self-interest would collectively benefit the nation. However, economists soon realized the need to consider broader societal goals and macroeconomic issues.
- Macroeconomics aims to address these larger economic challenges, such as inflation and unemployment, by analyzing the aggregate behavior of the economy and the policies required to achieve societal welfare beyond individual interests.

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- Macroeconomics shows two simple characteristics - (a) **Macroeconomic Decision Makers** and (b) **Objectives of Macroeconomic Decision Makers**.
- Macroeconomic decisions are made by entities such as the government and statutory bodies like the Reserve Bank of India (RBI) and Securities and Exchange Board of India (SEBI). These decision-makers are guided by public goals mandated by law or the Constitution, distinguishing them from individual economic agents driven by private profit or welfare maximization.
- Macroeconomic decision-makers prioritize public welfare over individual self-interest. They aim to allocate economic resources to address societal needs, such as inflation control, unemployment reduction, and economic stability. Their actions are directed towards promoting the well-being of the entire nation and its citizens, transcending narrow individual objectives.

Emergence of Macroeconomics

- Macroeconomics emerged as a distinct field of economics with the publication of **John Maynard Keynes' influential book, "The General Theory of Employment, Interest and Money," in 1936.** Before Keynes, the prevailing economic belief, known as the school of the classical tradition, held that all willing laborers would find employment, and all factories would operate at full capacity.
- The **Great Depression of 1929** and the subsequent years had a profound impact on the economies of Europe and North America, as well as other parts of the world. It led to a sharp decline in output and employment levels. Many factories remained idle, and a significant number of workers lost their jobs.
- In the United States, for example, the unemployment rate surged from 3 percent to 25 percent between 1929 and 1933, accompanied by a 33 percent drop in aggregate output.

John Maynard Keynes, a British economist, was actively involved in international diplomacy during the years following the First World War. He prophesied the break down of the peace agreement of the War in the book **"The Economic Consequences of the Peace (1919)"**. His book **"General Theory of Employment, Interest and Money (1936)"** is regarded as one of the most influential economics books of the twentieth century.

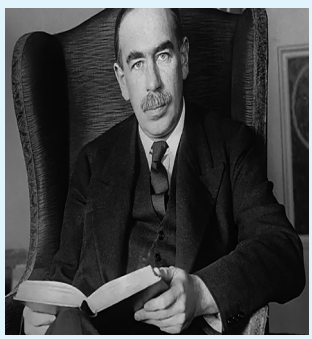

Figure 6.2 - John Maynard Keynes

- These unprecedented events prompted economists to rethink how economies functioned. The notion that economies could experience prolonged periods of high unemployment needed to be explored and explained.
- John Maynard Keynes' book represented a groundbreaking effort in this direction. Unlike previous economists, Keynes approached the subject by examining the entire economy and analyzing the interdependence of its various sectors.
- This marked the birth of macroeconomics, a field dedicated to understanding and addressing such large-scale economic challenges.

Context of the Macroeconomics

- We study macroeconomics while focusing discussion mainly on a capitalist economy characterized by private ownership of production means, production for market sale, and the employment of wage labor.
- Capital, land, and labor are essential factors of production. Entrepreneurs play a central role in production and profit-making.
- In a capitalist economy, revenue from sales is divided into rent for land, interest for capital, wages for labor, and profit for entrepreneurs. Profits can be reinvested as investment expenditure.
- Investment in machinery or factories to expand production capacity is a common practice.

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Historical Context

- Capitalist economies emerged over the last few centuries, primarily in North America, Europe, and parts of Asia.
- Many underdeveloped countries have different economic systems, such as peasant-based agriculture or tribal societies, where capitalist principles do not apply.

Economic Players

- **Firms:** Private entrepreneurs or firms play a key role in capitalist economies. They hire wage labor, use capital and land, and produce goods and services for profit.
- **Government:** The state enforces laws, provides public infrastructure, runs schools, and delivers public services. It may also undertake production and taxation.
- **Household Sector:** Households consist of individuals or groups that make consumption decisions, save, and pay taxes. They earn income through work (wages, salaries, or profits).

External Trade

- The external sector involves international trade, including exports (selling goods to other countries) and imports (buying goods from other countries).
- Capital flows may occur between countries as foreign capital investment or capital export.

Some Basic Concepts of Macroeconomics

- Economics is the study of how societies allocate their limited resources to meet their unlimited wants and needs. It delves into the mechanisms and patterns that govern the production, distribution, and consumption of goods and services. A central question in economics is understanding what generates economic wealth in a nation and why some countries are rich while others remain poor.
- Adam Smith, a Scottish economist and philosopher, is considered one of the pioneers of economics. His most influential work, **"An Enquiry into the Nature and Cause of the Wealth of Nations", published in 1776**, laid the foundation for modern economics. Smith explored several fundamental questions in this groundbreaking book that continue to shape economic thought and policy today.

What Generates Economic Wealth?

- **Smith's** inquiry sought to understand the underlying factors that lead to the accumulation of wealth within nations.
- Smith observed that some resource-rich regions, such as Africa and Latin America, did not necessarily translate their natural wealth into prosperity.
- He emphasized that economic wealth is not solely dependent on the natural resources a country possesses but rather on how efficiently those resources are utilized in the production process.

The Flow of Production

- Smith introduced the concept of the **"flow of production",** which describes how people combine their labor with natural and man-made resources within a social and technological framework to generate economic output.
- In the modern economic context, this flow of production results in the creation of commodities, including both goods and services, by a multitude of enterprises, ranging from small businesses to large corporations.

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Final Goods and their Use

- **Final goods** are products meant for ultimate consumption and do not undergo further transformation in the economic process. Example - food, tea leaves, clothing, etc.
- Final goods can be divided into consumption goods (goods consumed directly) and capital goods (durable goods used in production).

Intermediate Goods

- **Intermediate goods** are products used by producers as inputs in the production of other commodities.
- They are not considered final goods and do not enter the consumption stream directly.
- Examples are steel sheets used for making automobiles and copper used for making utensils.

The Role of Money

- **Money** is used as a common measuring rod to quantify the total value of final goods and services produced in an economy.
- Money allows for the aggregation of the monetary value of different goods and services, providing a quantitative measure of final output.

Stocks and Flows

- **Stocks** are assets or goods existing at a specific point in time, while flows represent quantities over a period.
- Capital goods, such as machinery, are stocks, while changes in capital goods over time are flows.

Gross Investment

- **Gross investment** encompasses capital goods and infrastructure like machinery, buildings, roads, and bridges within an economy's final output, indicating its commitment to future development.

Depreciation and Net Investment

- **Depreciation** is an annual allowance for the wear and tear of capital goods over their useful life.
- **Net investment** measures the new additions to the capital stock, accounting for depreciation.

Consumption vs. Investment

- Economies face a trade-off between producing consumer goods and capital goods.
- Increased production of capital goods can lead to higher future production capacity and, ultimately, more consumer goods.

Circular Flow of Income

- **The circular flow of income** connects production and consumption.
- Firms pay income to **factors of production (wages, profits, rents, and interests)**, which enable individuals to purchase goods and services.

Interconnectedness of Production and Consumption

- The **production process** generates factor payments, which creates purchasing power for consumers.
- Capital goods play a role in this cycle by facilitating production and generating incomes.

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Circular Flow of Income in the Economy

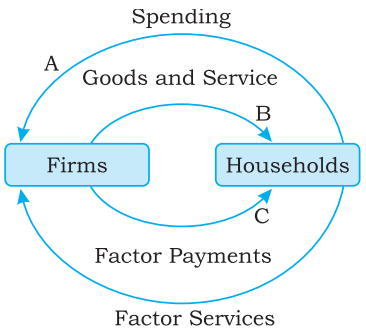

Figure 6.3: Circular flow of money in a simple economy.

- The description of the economy provides a simplified model without government intervention, external trade, or savings.
- In this model, households receive income from firms for their productive activities, and there are **four types of contributions: labor (wage), capital (interest), entrepreneurship (profit), and natural resources (rent)**. Refer Figure 6.3 to understand the circular flow of income in a simple economy.
- Households spend their entire income on goods and services produced by domestic firms, and there are no taxes or imports.

Circular Flow of Income

- In this simple economy, there is a circular flow of income between households and firms.
- Households spend their income on goods and services produced by firms, and firms pay remuneration to factors of production.
- The circular flow continues year after year, with aggregate income flowing through both sectors.

Methods of Calculating National Income

Measurement of Aggregate Income

- **Aggregate income** can be measured through three methods: **expenditure method, product method, and income method.** Refer to Figure 6.4 to understand the GDP by three methods.
- The **expenditure method** calculates aggregate income by measuring the spending firms receive for final goods and services produced.
- The **product method** measures aggregate income by calculating the aggregate value of final goods and services produced by all firms.
- The **income method** calculates aggregate income by summing up all factor payments (wages, interest, profit, rent).

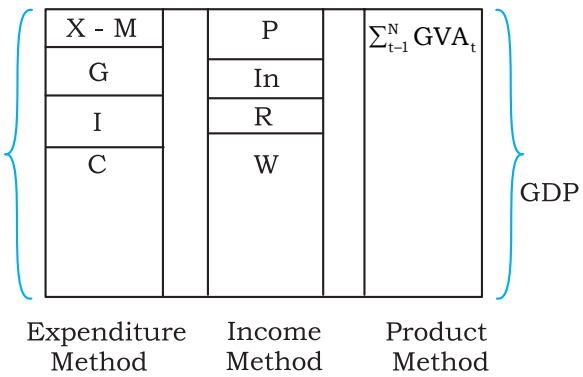

Figure 6.4: GDP by three Methods

Simplified Economic Models

- The described model is a simplified representation of an economy and serves as a macroeconomic model.
- Models aim to highlight essential features of economic systems, but they do not capture every detail.
- Economists use various models to analyze different real-life situations, selecting the most appropriate one for a given context.

The Paradox of Higher Spending

- ➢ If households decide to spend more than their current income level, firms will produce more to meet the demand.
- ➢ The additional factor payments made by firms to support higher production will eventually lead to a rise in household income.
- ➢ This illustrates how an economy's income can adjust to higher aggregate spending.

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The Impact of Savings

- The introduction of savings into the simple model does not fundamentally change the conclusion that the aggregate estimate of income remains the same.
- The annual production of goods and services, estimated through the three methods, remains consistent even in more complex economies.

The Product or Value Added Method

- The product method is **used to calculate the aggregate annual value of goods and services produced in an economy**. It involves summing up the value added by all the firms in the economy.
- **Example:** The example involves two types of producers - wheat producers (farmers) and bread makers (bakers). In a year, farmers produce wheat with a total value of Rs 100, out of which they sell Rs 50 worth of wheat to bakers. The bakers use this wheat to produce bread with a value of Rs 200.

POINTS TO PONDER

The GDP calculation requires authentic documentation. Given the huge informal economy in India which fails to register and record the economic transactions, how do you think India calculates its GDP? What are the processes? Which all methods are used?

Value Added

- The term that is used to denote the **net contribution made by a firm** is called its value added. Value added by a firm is **calculated as the value of production minus the value of intermediate goods used (**Refer Table 6.1**)**. For the farmers, their value added is Rs 100 (the entire value of their wheat production). For the bakers, their value added is Rs 200 (bread production) minus Rs 50 (the value of wheat they bought from the farmers), which equals Rs 150.

Table 6.1: Production, Immediate Goods and Value Added

	Farmer	Baker
Total production	100	200
Intermediate goods used	0	50
Value added	100	200 – 50 = 150

Gross Value Added and Net Value Added

- If we **include depreciation in value added** then the measure of value added that we obtain is called **Gross Value Added**.
- If we **deduct the value of depreciation** from gross value added we obtain **Net Value Added**.
- Unlike gross value added, net value added does not include wear and tear that capital has undergone.
- For example, let us say a firm produces Rs 100 worth of goods per year, Rs 20 is the value of intermediate goods used by it during the year and Rs 10 is the value of capital consumption. The gross value added of the firm will be Rs 100 – Rs 20 = Rs 80 per year. The net value added will be, Rs 100 – Rs 20 – Rs 10 = Rs 70 per year.

Inventory

- Inventory in economics refers to the stock of unsold finished or raw goods a firm holds from one year to the next, with changes indicating accumulation (increase) or decumulation (decrease) in value over time. It's a crucial variable for assessing a company's production and sales dynamics.
- **The change of inventories of a firm during a year = production of the firm during the year – sale of the firm during the year.** (= means identity. Unlike equality ('='), an identity always holds irrespective of what variables we have on the left-hand and right-hand sides of it.)

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- **For example**, let us suppose that a firm had an unsold stock worth Rs 100 at the beginning of a year. During the year it had produced Rs 1,000 worth of goods and managed to sell Rs 800 worth of goods. Therefore, Rs 200 is the difference between production and sales. This Rs 200 worth of goods is the change in inventories. This will add to the Rs 100 worth of inventories the firm started with. Hence the inventories at the end of the year is, Rs 100 + Rs 200 = Rs 300.
- Notice that change in inventories takes place over a period of time. Therefore it is a **flow variable**.
- Inventories are treated as capital and addition to the stock of capital of a firm is known as investment. Therefore, a change in the inventory of a firm is treated as an **investment**.
- Three major categories of investment are as follows:
  - **Inventory Investment:** This involves the increase in the value of a firm's inventories over a year, considered as an investment expenditure made by the firm.
  - **Fixed Business Investment:** It comprises investments in machinery, factory buildings, and equipment by firms to enhance their production capabilities.
  - **Residential Investment:** This category relates to investments made in housing facilities, such as construction and improvement of residential properties.
- Change in inventories can be planned or unplanned. **Unplanned accumulation of inventories** occurs when sales fall unexpectedly, resulting in unsold goods beyond expectations. Conversely, **unplanned decumulation of inventories** happens when there's an unexpected increase in sales, reducing inventories more than anticipated.
- **For Example -** Suppose a firm produces shirts. It starts the year with an inventory of 100 shirts. During the coming year, it expects to sell 1,000 shirts. Hence, it produces 1,000 shirts, expecting to keep an inventory of 100 at the end of the year. However, during the year, the sales of shirts turned out to be unexpectedly low. The firm is able to sell only 600 shirts. This means that the firm is left with 400 unsold shirts. The firm ends the year with 400 + 100 = 500 shirts. The unexpected rise of inventories by 400 will be an example of the unplanned accumulation of inventories. If, on the other hand, the sales had been more than 1,000 we would have unplanned decumulation of inventories. For example, if the sales had been 1,050, then not only the production of 1,000 shirts would be sold, but the firm would have to sell 50 shirts out of the inventory. This 50 unexpected reduction in inventories is an example of unexpected decumulation of inventories.

Note - If we sum the gross value added of all the firms of the economy in a year, we get a measure of the value of the aggregate amount of goods and services produced by the economy in a year (just as in the wheat-bread example). Such an estimate is called **Gross Domestic Product (GDP)**.

Thus **GDP ≡ Is the total gross value added of all the firms in the economy.**

Expenditure Method

An **alternative approach to calculating GDP** is through the expenditure method, which **focuses on the demand side of products**. For Example - The Rs 50 worth of wheat that the bakers buy from the farmers counts as intermediate goods, hence it does not fall under the category of final expenditure. Therefore the aggregate value of output of the economy is Rs 200 (final expenditure received by the baker) + Rs 50 (final expenditure received by the farmer) = Rs 250 per year.

In the example of the farmer-baker economy described earlier, the aggregate value of the output in the economy using the expenditure method is determined as follows:

- Calculate the final expenditures made by each firm. Final expenditure refers to spending, not for intermediate purposes.
- Sum up the revenues earned by each firm from final consumption (C), investment (I), government spending (G), and exports (X). This is represented as RVi for each firm.

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- For the entire economy, calculate the aggregate final consumption expenditure (C), which includes spending on domestic firms but excludes spending on imported consumption goods (Cm).
- Calculate the aggregate final investment expenditure (I), which includes spending on domestic firms but excludes spending on foreign investment goods (Im).
- Determine the aggregate final government expenditure (G) for the economy, which includes spending on domestic firms but excludes spending on imports (Gm).
- Calculate the aggregate exports (X) received by the economy from foreign buyers.
- Subtract the aggregate imports expenditure (M), which includes spending on imports of consumption goods (Cm), imports of investment goods (Im), and government spending on imports (Gm).
- Express GDP using the expenditure method as **GDP = C + I + G + X – M.**

This equation provides a way to calculate GDP based on final expenditures on consumption, investment, government spending, exports, and imports. It is worth noting that investment expenditure (I) is often the most variable component in this calculation.

Income Method

The income **method of calculating GDP focuses on the incomes received by all the factors of production**, such as labor, capital, entrepreneurship, and land. It establishes a relationship between the sum of final expenditures in the economy and the incomes earned by households and factors of production.

Here's how the income method is applied:

- Consider there are M households in the economy, and let Wi represent the wages and salaries received by the i-th household, Pi for gross profits, Ini for interest payments, and Ri for rents in a specific year.
- GDP is calculated as the sum of these various income components: **GDP = Σ(Wi) + Σ(Pi) + Σ(Ini) + Σ(Ri)**. (The symbol Σ is a notation – it is used to denote summation.)
- The total income earned by all households is expressed as GDP.
- This method essentially states that the revenues earned by all firms in the economy should be distributed among the factors of production such as salaries, wages, profits, interest earnings, and rents.

POINTS TO PONDER

We studied three methods of calculating GDP, in terms of Product method, Expenditure method and Income method. A single method isn't sufficient for calculating GDP for the whole country. Different methods are used for different sectors. Can you think of 2 sectors each for these 3 different methods?

When considering the income method along with the value-added method and expenditure method, they all provide different expressions of the same GDP variable. These methods represent the relationship between production, expenditure, and income.

Factor Cost, Basic Prices, and Market Prices

- The Central Statistics Office (CSO) of the Government of India has been reporting the GDP at factor cost and at market prices. In its revision in January 2015 the CSO replaced GDP at factor cost with the GVA at basic prices, and the GDP at market prices, which is now called only GDP, is now the most highlighted measure.

Market prices: Market prices represent the final prices of goods and services that consumers pay. To calculate market prices, one needs to add product taxes (like excise tax, service tax, export and import duties) and subtract product subsidies from basic prices.

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- The measurement of national income in India involves various concepts such as GDP at factor cost, GDP at market prices, GVA at basic prices, and the distinction between production taxes and product taxes, as well as subsidies.

GDP at Factor Cost	This is a measure that focuses on the value of total output produced in the economy. considering only the payment to factors of production (like wages, rent, interest, and profits) and excluding any taxes, In India, GDP at factor cost was widely used as a measure of national income.
GVA at Basic Prices	GVA (Gross Value Added) at basic prices is a concept that considers the value of total output produced in the economy minus the value of intermediate consumption (goods used in further production, not for final consumption). It includes net production taxes (production taxes minus production subsidies).
The **relationships among these concepts** are as follows. **GVA at factor cost + Net production taxes = GVA at basic prices** **GVA at basic prices + Net product taxes = GDP at market prices**	

In recent years, the Central Statistics Office (CSO) of the Government of India has shifted its focus from GDP at factor cost to GVA at basic prices as a key measure of national income (Refer Table 6.2). This change highlights the importance of understanding the distinction between various taxes and subsidies related to production and products in calculating national income.

Table 6.2: GVA and GDP for India at constant (2011-2012) price

S.No.	Item	PE (Provisional Estimates) 2020-21 (Rs. Lakh Crore)
1.	GVA at basic prices	124.53
2.	Net production taxes	10.59
3.	GDP (1+2)	135.13

Some Macroeconomic Identities

There are various macroeconomic identities and concepts related to national income measurement, including Gross National Product (GNP), Net National Product (NNP), National Income (NI), Personal Income (PI), and Personal Disposable Income (PDI). These identities help in understanding how income is distributed within an economy and how it is affected by various factors like depreciation, taxes, subsidies, and transfers.

- **Gross National Product (GNP):** GNP represents the total economic output produced within a country, including income earned by domestic factors of production abroad minus income earned by foreign factors of production within the country. It is calculated as GDP plus net factor income from abroad.

GNP = GDP + Net Factor Income from Abroad

- **Net National Product (NNP):** NNP is obtained by subtracting depreciation (wear and tear of capital) from GNP. Depreciation does not contribute to anyone's income, so it is deducted to obtain a more accurate measure of income.

NNP = GNP - Depreciation

- **National Income (NI):** NI is NNP evaluated at market prices, taking into account indirect taxes and subsidies. It represents the income that accrues to factors of production within the country.

NI = NNP at Market Prices - Net Indirect Taxes (Indirect Taxes - Subsidies)

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Note

All these variables are evaluated at market prices. We get the value of NNP evaluated at market prices. But market price includes **indirect taxes**. When indirect taxes are imposed on goods and services, their prices go up. Indirect taxes accrue to the government. We have to deduct them from NNP evaluated at market prices in order to calculate the part of NNP that actually accrues to the factors of production. Similarly, there may be **subsidies** granted by the government on the prices of some commodities (in India petrol is heavily taxed by the government, whereas cooking gas is subsidised). So we need to add subsidies to the NNP evaluated at market prices. The measure that we obtain by doing so is called Net National Product at factor cost or National Income.

Personal Income (PI): PI is the income received by households from NI. It is calculated by deducting undistributed profits, corporate tax, and net interest payments made by households, and adding transfer payments received from the government and firms.

- NI, which is earned by the firms and government enterprises, a part of profit is not distributed among the factors of production. This is called Undistributed Profits (UP).
- The households receive transfer payments from the government and firms (pensions, scholarships, prizes, for example) which have to be added to calculate the Personal Income of the households.

National Disposable Income = Net National Product at market prices + Other current transfers from the rest of the world

The idea behind National Disposable Income is that it gives an idea of what is the maximum amount of goods and services the domestic economy has at its disposal. Current transfers from the rest of the world include items such as gifts, aids, etc.

Private Income = Factor income from net domestic product accruing to the private sector + National debt interest + Net factor income from abroad + Current transfers from government + Other net transfers from the rest of the world.

PI = NI - Undistributed Profits - Net Interest Payments Made by Households - Corporate Tax + Transfer Payments to Households

Personal Disposable Income (PDI): PDI is the income available to households after deducting personal tax payments (such as income tax) and non-tax payments (like fines) from PI. It represents the income that households have at their disposal for consumption or savings.

PDI = PI - Personal Tax Payments - Non-Tax Payments

- **NFIA:** Net Factor Income from Abroad
- **D:** Depreciation
- **ID:** Indirect Taxes
- **Sub:** Subsidies
- **UP:** Undistributed Profits
- **NIH:** Net Interest Payments by Households
- **CT:** Corporate Taxes
- **TrH:** Transfers received by Households
- **PTP:** Personal Tax Payments
- **NP:** Non-Tax Payments.

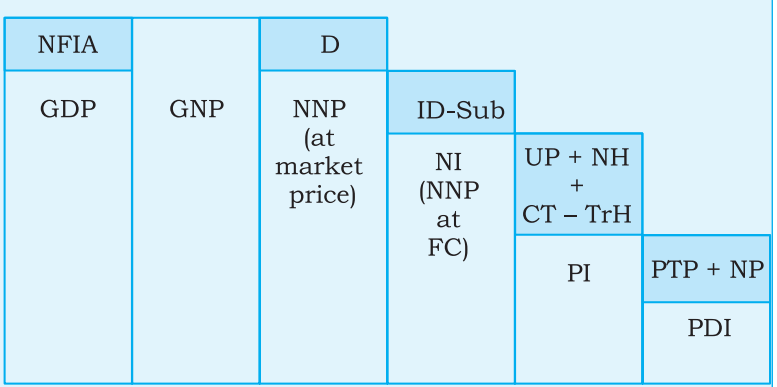

Figure 6.5: Diagrammatic representation of the relations between these major macroeconomic variables

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Nominal And Real GDP

Nominal GDP

- **Nominal GDP** is the total value of goods and services produced in an economy **at current market prices.** It does not account for changes in prices over time.
- **For example,** suppose a country only produces bread. In the year 2000 it had produced 100 units of bread, price was Rs 10 per bread. GDP at current price was Rs 1,000. In 2001 the same country produced 110 units of bread at price Rs 15 per bread. Therefore nominal GDP in 2001 was Rs 1,650 (=110 × Rs 15). Real GDP in 2001 calculated at the price of the year 2000 (2000 will be called the base year) will be 110 × Rs 10 = Rs 1,100.

Real GDP

- **Real GDP** is a measure of economic output that adjusts for changes in prices. It evaluates goods and services at constant (base-year) prices, allowing for a comparison of production volumes across different years.
- Real GDP helps eliminate the impact of price changes, making it a useful tool for assessing actual changes in economic production.

Real GDP = (Nominal GDP / GDP Deflator)

GDP Deflator

- The **GDP deflator** is an index that measures the average change in prices of all goods and services included in GDP over time.
- It is calculated as the ratio of nominal GDP to real GDP, expressed as a percentage.

GDP Deflator = (Nominal GDP / Real GDP) × 100

- A GDP deflator of 150% implies that prices have increased by 50% compared to the base year.

Consumer Price Index (CPI)

The **CPI** measures changes in the prices of a fixed basket of goods and services typically purchased by a representative consumer. It quantifies the inflation experienced by consumers. CPI is expressed as a percentage change in prices from a base year.

CPI = (Cost of Basket in Current Year / Cost of Basket in Base Year) × 100

Wholesale Price Index (WPI)

The **WPI** is an index that tracks changes in the prices of goods at the wholesale level. It is used to assess inflation in the early stages of production and distribution. In some countries, it may be referred to as the Producer Price Index (PPI).

Here, notice that CPI may differ from the GDP deflator because :

- The goods purchased by consumers do not represent all the goods which are produced in a country whereas the GDP deflator takes into account all such goods and services.
- CPI includes prices of goods consumed by the representative consumer, hence it includes prices of imported goods but the GDP deflator does not include prices of imported goods.
- The weights are constant in CPI – but they differ according to the production level of each good in the GDP deflator.

POINTS TO PONDER

We saw how the Consumer Price Index and Wholesale Price index are indicative of inflationary trends. Usually they are different and CPI is higher than WPI. Why do you think they both vary? Also can you think of any situation where CPI is less than WPI?

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GDP And Welfare

Using Gross Domestic Product (GDP) as a sole indicator of the welfare of a country's people has its limitations, and there are several reasons why GDP may not accurately reflect the overall well-being of a nation:

Income Distribution

- GDP measures the total economic output of a country, but it does not provide information about how that output is distributed among its citizens.
- If GDP increases, but the gains are concentrated in the hands of a few individuals or entities, the majority of the population may not experience improved welfare. Unequal income distribution can lead to disparities in well-being.

Non-Monetary Exchanges

- Many valuable activities in an economy are not monetized or included in GDP calculations.
- For instance, domestic work performed at home, volunteer activities, and barter exchanges (where goods and services are directly swapped without money) are not typically accounted for in GDP. This omission can result in an underestimation of economic activity and well-being.

Externalities

- GDP does not consider externalities, which are unintended side effects of economic activities, which can be positive or negative.
- For example, a factory may contribute to GDP growth, but if it also pollutes a nearby river, causing harm to local communities and ecosystems, this harm is not reflected in GDP. Conversely, positive externalities, such as education and research, may enhance well-being but are not directly captured by GDP.

Conclusion

Macroeconomics focuses on the study of aggregate economic variables and the inter-relationships among different sectors of an economy. It emerged in response to the Great Depression of the 1930s, with John Maynard Keynes playing a significant role in its development. Macroeconomics views an economy as consisting of households, firms, government, and the external sector, all interacting in a circular flow. Methods for calculating aggregate income, including income, product, and expenditure approaches, have been discussed, along with various economic indicators like GDP, GNP, and price indices. However, it is essential to recognize that GDP alone may not accurately represent the overall welfare of a country, considering factors such as income distribution and externalities.

Table 6.3: Basic National Income Aggregates

1.	**Gross Domestic Product at Market Prices (GDP_{MP})**	➢ GDP is the market value of all final goods and services produced within a domestic territory of a country measured in a year. ➢ All production done by the national residents or the non-residents in a country gets included, regardless of whether that production is owned by a local company or a foreign entity. ➢ Everything is valued at market prices. $GDP_{MP} = C + I + G + X - M$
2.	**GDP at Factor Cost (GDP_{FC})**	➢ GDP at factor cost is gross domestic product at market prices, less net product taxes. ➢ Market prices are the prices as paid by the consumers Market prices also include product taxes and subsidies. The term factor cost refers to the prices of products as received by the producers. Thus, factor cost is equal to market prices, minus net indirect taxes. GDP at factor cost measures the money value of output produced by the firms within the domestic boundaries of a country in a year. $GDP_{FC} = GDP_{MP} - NIT$

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3.	**Net Domestic Product at Market Prices (NDP_{MP})**	➢ This measure allows policy-makers to estimate how much the country has to spend just to maintain their current GDP. If the country is not able to replace the capital stock lost through depreciation, then GDP will fall. **$NDP_{MP} = GDP_{MP} - Dep$**
4.	**NDP at Factor Cost (NDP_{FC})**	➢ NDP at factor cost is the income earned by the factors in the form of wages, profits, rent, interest, etc., within the domestic territory of a country. **$NDP_{FC} = NDP_{MP}$ - Net Product Taxes - Net Production Taxes**
5.	**Gross National Product at Market Prices (GNP_{MP})**	➢ GNPMP is the value of all the final goods and services that are produced by the normal residents of India and is measured at the market prices, in a year. ➢ GNP refers to all the economic output produced by a nation's normal residents, whether they are located within the national boundary or abroad. ➢ Everything is valued at the market prices. **$GNP_{MP} = GDP_{MP} + NFIA$**
6.	**GNP at Factor Cost (GNP_{FC})**	➢ GNP at factor cost measures the value of output received by the factors of production belonging to a country in a year. **$GNP_{FC} = GNP_{MP}$ – Net Product Taxes – Net Production Taxes**
7.	**Net National Product at Market Prices (NNP_{MP})**	➢ This is a measure of how much a country can consume in a given period of time. NNP measures output regardless of where that production has taken place (in domestic territory or abroad). **$NNP_{MP} = GNP_{MP}$ – Depreciation** **$NNP_{MP} = NDP_{MP} + NFIA$**
8.	**NNP at Factor Cost (NNP_{FC})** **Or** **National Income (NI)**	➢ NNP at factor cost is the sum of income earned by all factors in the production in the form of wages, profits, rent and interest, etc., belonging to a country during a year. ➢ It is the National Product and is not bound by production in the national boundaries. It is the net domestic factor income added with the net factor income from abroad. **NI = NNP_{MP} – Net Product Taxes – Net Production Taxes** **= NDP_{FC} + NFIA = NNP_{FC}**
9.	**GVA at Market Prices**	➢ GDP at market prices
10.	**GVA at basic prices**	➢ GVA_{MP} - Net Product Taxes
11.	**GVA at factor cost**	➢ GVA at basic prices - Net Production Taxes

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Glossary

- **Economic Agents or Units:** Economic agents refers to individuals or institutions that make economic decisions. These agents can be consumers or producers of goods and services. Additionally, entities like the government, corporations, and banks also make economic decisions.
- **Great Depression:** A severe worldwide economic depression that took place in the 1930s, characterized by high unemployment and economic hardship.
- **Unemployment Rate:** The percentage of the labor force that is currently unemployed and seeking employment.
- **Four Factors of Production:** The essential resources required for production: land, labor, capital, and entrepreneurship.
- **Means of Production:** The facilities and resources used to produce goods and services, including machinery, factories, and land.
- **Inputs:** The resources, including labor, materials, and capital, used in the production of goods and services.
- **Entrepreneurship:** The innovative and managerial skills of individuals who take the initiative to start new businesses or improve existing ones.
- **Investment Expenditure:** Spending by firms or individuals on capital goods or assets, aimed at increasing future production or income.
- **Capitalist Country or Capitalist Economy:** An economic system characterized by private ownership of the means of production and free-market competition.
- **External Sector:** The part of the economy that interacts with foreign countries through trade, including exports and imports.
- **Final Goods:** Products that are ready for consumption by households or businesses.
- **Consumer/Consumption Goods:** Goods purchased by households for immediate use or consumption.
- **Consumer Durables:** Products that have a longer lifespan and are typically used repeatedly by households, such as appliances.
- **Capital Goods:** Goods used by businesses and organizations to produce other goods or services.
- **Intermediate Goods:** Products used as inputs in the production of other goods and services.
- **Depreciation:** The reduction in the value of capital assets over time due to wear and tear or obsolescence.
- **Circular Flow of Income:** A model that illustrates the flow of income and expenditure between households, firms, government, and the external sector within an economy.
- **Macroeconomic Model:** A simplified representation of an economy used by economists to analyze and predict economic trends and relationships.
- **Inventories:** Stocks of goods or materials held by firms to meet future demand or production needs.
- **Gross Domestic Product (GDP):** The total value of all final goods and services produced within a country's borders in a specific time period.
- **Net Domestic Product (NDP):** GDP minus depreciation, representing the net addition to the economy's capital stock.
- **Gross National Product (GNP):** The total value of goods and services produced by a country's residents, whether within the country or abroad.
- **Net National Product (NNP):** GNP minus depreciation, representing the net addition to the nation's capital stock.
- **NNP (at Factor Cost) or Undistributed Profits:** NNP minus net indirect taxes (indirect taxes minus subsidies).
- **National Income (NI):** The sum of all factor incomes earned by households and firms within an economy.

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Money and Banking

Bibliography: This chapter encompasses the summary of Chapter 3 of Class XII NCERT (Introductory Macroeconomics) and Chapter 3 of Class X NCERT (Economics)

Introduction

Money is the **commonly accepted medium of exchange.** In economies with multiple individuals, money facilitates market transactions. Money facilitates exchanges by allowing individuals to sell their produce for money, which is then used to purchase necessary commodities. It serves various functions in a modern economy, including the facilitation of exchanges, market transactions, and facilitating the exchange of goods and services. Once the money is in circulation, it is mainly the banking sector that gets involved in the transaction process.

Functions of Money

Money as a Medium of Exchange

- Money is a significant aspect of our daily lives, **used in various transactions** such as buying and selling goods, and exchanging services and hence acts as an effective **medium of exchange**.
- For instance, in a market system, if a shoe manufacturer needs to exchange his shoes in order to buy wheat, a process known as **double coincidence of wants** has to work. This requires both parties to agree to sell and buy each other's commodities.

Ever wondered why transactions are made in money?

The reason is simple. A person holding money can easily exchange it for any commodity or service that he or she might want.

- This happens in a barter system where goods are directly exchanged without the use of money, but transactions in terms of money make it all easier.
- Money serves as an intermediate step in an economy, eliminating the need for a double coincidence of wants.

Convenient Unit of Account

- Money acts as a **convenient unit of account.** For example, when we state that a certain wristwatch is worth Rs 500, we mean that the wristwatch is exchangeable for 500 units of money, with the rupee serving as the **unit of currency** in this instance.
- Money helps in calculating the **relative cost of an item**. For instance, if the price of a pencil is Rs. 2, and the price of a pen is Rs 10, then a pen is worth 10 ÷ 2 = 5 pencils.

POINTS TO PONDER

One of the major functions of money is that it acts as a medium of exchange. It facilitates the exchange of goods by being able to ascertain a value to them. Do you think cryptocurrencies like Bitcoin do similar functions? Why can't they be a legal medium of exchange?

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- This also helps in calculating the **worth of money** in relation to other commodities. A rupee is equivalent to 1÷ 2 = 0.5 pencils or 1÷10 = 0.1 pens in the example above.

Universal Acceptability

- A barter system has limitations, such as difficulty in carrying wealth forward due to perishable items and storage costs. Money, on the other hand, is **not perishable** and has **lower storage costs and universal acceptability.**

Store of Value

- It can act as a **store of value** for individuals, but its value must be stable to function effectively. Other assets like gold, landed property, houses, or bonds can also act as stores of value but **may not be easily convertible or universally acceptable.**

Dynamic in Nature

- When commodity **prices increase** in terms of money, the **purchasing power of money decreases,** allowing a unit of money to purchase less of any commodity.

Cashless nature

- Some countries are moving towards a **cashless society,** where financial transactions are made through digital information.
- For example, the Indian government has been investing in reforms like **Jan Dhan accounts, Aadhar-enabled payment systems, e-wallets, and National Financial Switch** to promote financial inclusion.

Modern forms of money

Money has served as a medium of exchange, with Indians using grains and cattle since ancient times. Metallic coins like gold, silver, and copper were introduced in the last century.

Currency

- Modern forms of money include **currency paper notes and** coins.
- Modern currency is not made of precious metals like gold, silver, or copper, nor is it everyday use like grain or cattle, but has its own unique use.
- It is accepted as a medium of exchange because the currency is **authorised by the government of the country.**
- The **Reserve Bank of India issues currency notes** on behalf of the central government in India, no other individual or organisation is allowed to issue currency.
- The law also legalises the use of the rupee as a non-rejectable payment medium in transactions.
- Hence, the rupee is widely accepted as a medium of exchange in India.

Early punch-marked coins (may be 2500 years old)

Gupta coins

Tughlaq coin

Money as Deposits with Banks

- People hold money in deposits with banks, as they need only some currency for their daily needs at a certain point in time.

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- People also have the **provision to withdraw** the money as and when they require it.
- Since the deposits in the bank accounts can be withdrawn on demand, these deposits are called **demand deposits.**
- For payment through cheque, the payer who has an **account with the bank,** makes out a cheque for a specific amount.
- A **cheque** is a paper instructing the bank to pay a specific amount from the person's account to the person in whose name the cheque has been issued (Refer to Figure 7.2).
- Demand deposits, along with currency, are widely accepted as a **means of payment** in the modern economy. Hence they share essential features of money.
- The **modern forms of money** — currency and deposits — are closely linked to the working of the modern banking system.

Gold Mohar from Akbar's reign

Modern coin

Figure 7.1: Coins of different time period

Cheque Payments

A shoe manufacturer, M. Salim has to make a payment to the leather supplier and writes a cheque for a specic amount. This means that the shoe manufacturer instructs his bank to pay this amount to the leather supplier. The leather supplier takes this cheque, and deposits it in his own account in the bank. The money is transferred from one bank account to another bank account in a couple of days. The transaction is complete without any payment of cash.

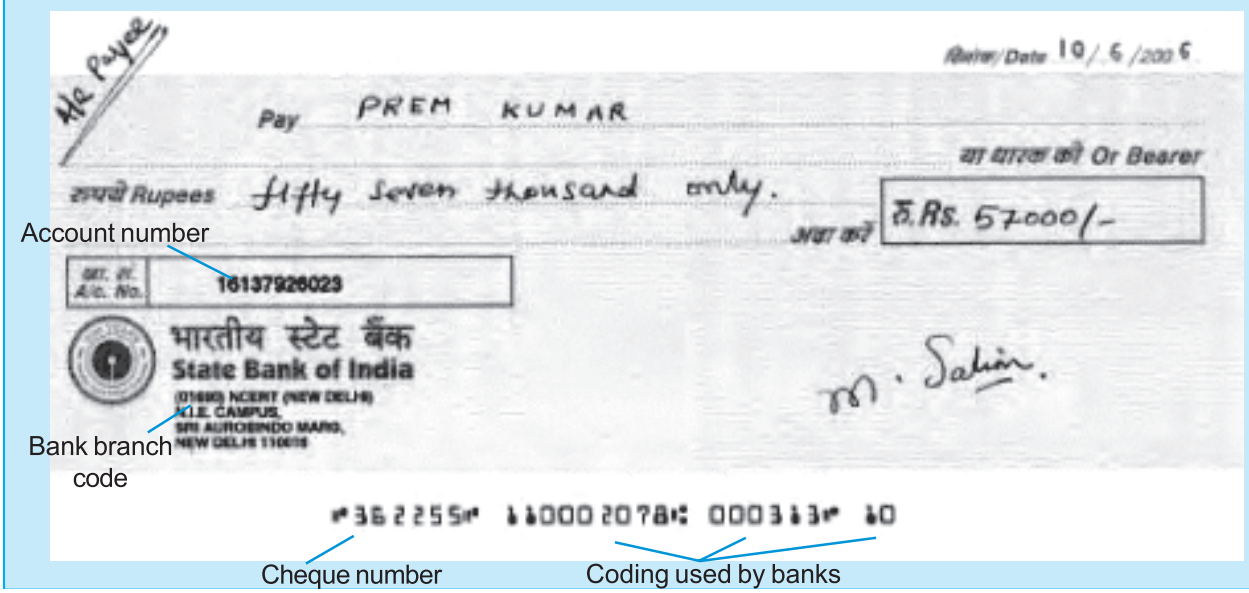

Figure 7.2: Cheque

Demand and Supply of Money

Demand for Money

- The demand for money is determined by the **value of transactions** and the **quantity of money** demanded.

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- As the quantum of transactions depends on income, an increase in income leads to a **higher demand for money.**
- Further, people keep their surplus income in the form of savings in banks. The amount of money people keep in banks depends on the **rate of interest.**

Supply of Money

Money in a modern economy includes **cash and bank deposits**. These are created by the **central bank and commercial banking system.** Let's have a look at them in detail.

Central Bank

- The **Reserve Bank of India**, established in **1935,** is a crucial institution in the Indian economy.
- It performs various functions like issuing of the currency and controlling the money supply through methods like bank rates and reserve ratios. Further, it acts as a banker to the government and custodians of foreign exchange reserves.
- The central bank's currency, known as **high-powered money or reserve money,** serves as a basis for credit creation.

Commercial Banks

- **Commercial banks** are essential for the economy's **money-creating system**.
- They accept public deposits from depositors and lend to borrowers, with different interest rates for both. Normally, **interest rates for depositors are lower than for borrowers.** This difference between these two interest rates is called the **'spread'**.
- Commercial banks **act as intermediaries between individuals or firms** with excess funds and those in need of funds. They offer interest on deposits and make transactions more convenient and safer.
- In the modern context, **demand deposits make transactions more secure**, even without earning interest.
- They must ensure they can repay depositors on demand to maintain their survival. To ensure that sufficient funds are available to repay any depositor on demand, banks must balance their lending activities. This ensures that banks can continue to serve their customers and maintain a healthy financial system.

Policy Tools to Control Money Supply

- **The Reserve Bank** is the sole institution capable of issuing currency and providing funds to commercial banks for **credit creation.**
- The Central Bank provides funds through various instruments and is considered the **lender of last resort** due to its constant lending capacity to banks.
- The RBI uses both quantitative and qualitative tools to regulate the money supply in the economy.
- **Quantitative tools** involve adjusting the Central/Cash Reserve Ratio (CRR) or bank rate, while **qualitative tools** involve persuasion by the RBI to discourage or encourage lending in commercial banks.

Money control by RBI

- The **Central Bank's change in the reserve ratio** can affect banks' lending, which in turn affects deposits and money supply.
- For instance, if the Reserve Bank of India increases the reserve ratio to 25%, the banking system would only be able to loan Rs 300 out of total Rs 400 leading to a decrease in the money supply by Rs 100.

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- **Open Market Operations** involve buying and selling government bonds in the open market, which is entrusted to the RBI. The Reserve Bank of India (RBI) uses Open Market Operations to influence the money supply. When the RBI buys a government bond, it pays with a cheque, increasing the **total reserves in the economy and the money supply.** Open market operations, such as **outright and repo**, involve central banks injecting money into the system without any promise to sell or withdraw it later.
- **Reverse Repo:** Sale of securities by the central bank through an agreement which has a specification about the date and price at which it will be repurchased.
- **Repo operations** and reverse repo operations specify the date and price of repurchase.
- **Repo rate** is the interest rate at which money is lent in repo operations. The Reserve Bank of India conducts repo and reverse repo operations at various maturities, including **overnight, 7-day, and 14-day, and has become the main tool of monetary policy.**
- **Bank rate:** By altering the rate at which it lends money to commercial banks, the RBI can affect the amount of money in circulation. In India, this rate is known as the **Bank Rate**. By raising the bank rate, commercial banks must pay more for the loans they take out, which decreases the amount of reserves they hold and, as a result, the amount of money in circulation. The amount of money available may rise if the bank rate declines.

The Supply of Money: Various Measures

- Demand deposits, such as currency notes and coins are issued by the monetary authority in the country. In India, **currency notes are issued by the Reserve Bank of India (RBI) and coins are issued by the Government of India.**
- These deposits are **payable on demand from the account holder**, while fixed deposits have a **fixed maturity period.**
- In addition to currency notes and coins, savings or current account deposits held by the public in commercial banks are also considered money.
- The paper itself has little value—certainly less than Rs 100—even though a hundred rupee note can be used to buy goods from a business for Rs 100.
- Similar to this, a five rupee coin's metal content is probably not worth five rupees. Why then do individuals exchange commodities that appear to be more valuable than these for such notes and coins? The assurance that the issuing authority of these objects has offered gives the currency notes and coins their worth.
- Currency notes and coins are **fiat money**, with the RBI promising to provide purchasing power equal to the value printed on them. They are **legal tenders,** as they cannot be refused by any citizen for transaction settlement.
- However, **cheques drawn on savings or current accounts** can be refused by anyone, making demand deposits **not legal tenders.**

Legal Definitions: Narrow and Broad Money

- Money supply is a stock variable that represents the total amount of money in circulation among the public at a specific time.
- RBI publishes figures for four alternative measures of money supply, viz., M1, M2, M3 and M4. They are defined as follows:

  M1 = CU + DD

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M2 = M1 + Savings deposits with Post Office savings banks

M3 = M1 + Net time deposits of commercial banks

M4 = M3 + Total deposits with Post Office savings organisations (excluding National Savings Certificates)

- Where **CU** is currency (notes plus coins) held by the public and DD is net demand deposits held by commercial banks.
- The word **'net'** implies that only deposits of the public held by the banks are to be included in the money supply. The interbank deposits, which a commercial bank holds in other commercial banks, are not to be regarded as part of the money supply.
- **M1 and M2 are known as narrow money. M3 and M4 are known as broad money.**
- These measures are in decreasing order of liquidity. **M1 is the most liquid and easiest for transactions whereas M4 is the least liquid of all.** M3 is the most commonly used measure of money supply. It is also known as aggregate monetary resources.

Functioning of Banks

The Major function of the bank is **accepting deposits from depositors and giving loans or credit to borrowers.** Banks are able to these functions effectively with their ability to create money in the banking system.

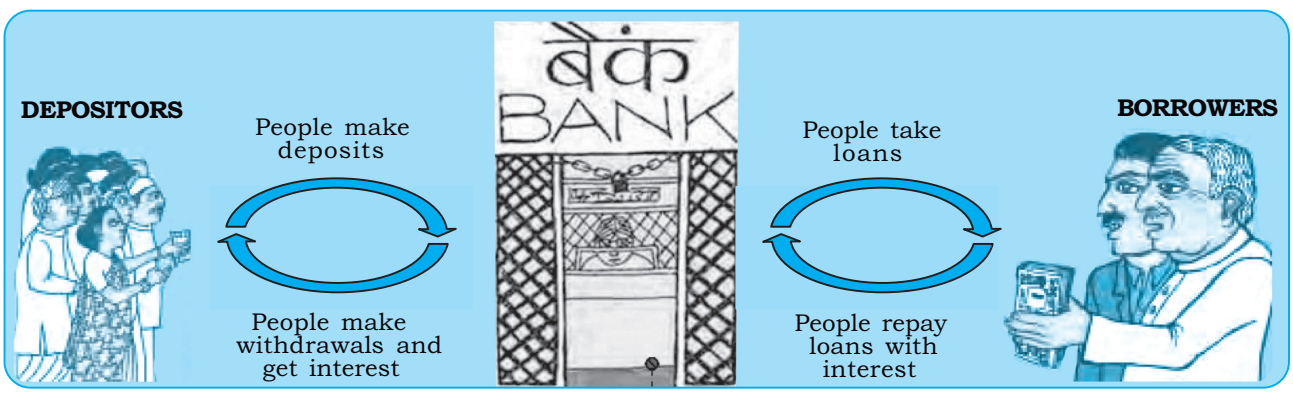

Figure 7.3: Flow of money in banking sector

Process of Money Creation

- Consider an example of goldsmith Lala, who used precious metals as money to buy goods and services. People kept their gold with Lala for safekeeping, and in return, Lala issued paper receipts for payment.
- Over time, these receipts began to circulate as money, allowing people to pay for goods like wheat or shoes instead of gold. This led to paper receipts acting as a medium of exchange in the village.
- Now suppose Lala, with 100 kg of gold deposited by various individuals, issued receipts for the gold. Ramu, who wants a 25 kg loan, asks Lala to give the gold to him.
- Lala decides that everyone with gold deposits will not withdraw simultaneously, so he can charge Ramu for the loan.
- Ramu can also pay Ali with the gold, and Ali can keep it with Lala in exchange for a paper receipt. This will make the total value of paper receipts, acting as money, equal to 125 kg. It means Lala has created money equal to 25 kg out of air.
- The modern banking system works precisely the way Lala behaves in this example.
- Banks will create money in a manner similar to that given in the above story.

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Money creation by banking system

- **Banks** keep only a small proportion of their deposits as cash with themselves. For example, banks in India these days hold about **15 percent of their deposits as cash**. This is kept as the provision to pay the depositors who might come to withdraw money from the bank on any given day. The bank can manage its cash effectively as only a few depositors withdraw cash on a specific day.
- Banks can create money in a similar manner to the story of Lala we saw above, as they lend to individuals without expecting all depositors to withdraw at the same time. When a new deposit is opened, the money supply increases to old deposits plus new deposits (plus currency).
- A **fictional balance sheet** for a single bank can be constructed, recording assets and liabilities. Assets are things a firm owns or can claim from others, such as loans given to the public.
- **Reserves** are deposits held by commercial banks with the Central Bank, the Reserve Bank of India (RBI). These reserves are **partly cash** and **partly in the form of financial instruments** issued by the RBI. Reserves are similar to deposits we keep with banks, as they can be withdrawn by us.
- **Commercial banks** like the State Bank of India (SBI) keep their deposits with RBI and these are called Reserves.

Assets = Reserves + Loans

- **Liabilities** for any firm are its debts or what it owes to others. For a bank, the main liability is the deposits which people keep with it.

Liabilities = Deposits

- The accounting rule states that both sides of the account must balance. Hence if assets are greater than liabilities, they are recorded on the right-hand side as Net Worth.

Net Worth = Assets – Liabilities

POINTS TO PONDER

Currency is generated by the RBI through the process of printing and backing it with the assurance of its value. This implies that the RBI has the capacity to produce any necessary amount of money. Have you considered the factors that discourage countries from simply printing money to fulfill their requirements, and what potential repercussions might arise from such a practice?

Balance Sheet of a Fictional Bank

- Consider an example of a fictional bank having deposits (liabilities) equal to Rs 100. This could be because Ms Fernandes has deposited Rs 100 in the bank. Let this bank deposit the same amount with RBI as reserves. Table 7.1 represents its balance sheet.

Table 7.1: Balance Sheet of a bank

Assets		Liabilities	
Reserves	Rs 100	Deposits	Rs 100
		Net Worth	0
Total	Rs 100	Total	100

- If we assume that there is no currency in circulation, then the **total money supply** in the economy will be equal to Rs 100.

M1 = Currency + Deposits = 0 +100 =100

Limits to Credit Creation and Money Multiplier

- Suppose Mr. Mathew is applying for a Rs 500 loan from a bank, which would increase the total bank deposits and money supply. However, there is a limit to money or credit creation by banks, determined by the **Central Bank (RBI).** Such limits are called reserve ratios.
- **Cash Reserve Ratio (CRR):** The RBI sets a percentage of deposits that banks must keep as reserves to prevent over-lending, known as the **'Required Reserve Ratio' or 'Reserve Ratio' or 'Cash Reserve Ratio' (CRR).**

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Table 7.2 Money Multiplier Process

Round	Deposit in Bank	Required Reserve	Loan made by Bank
1	100.00	20.00	80.00
2	180.00	36.00	64.00
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
Last	500.00	100.00	400.00

Cash Reserve Ratio (CRR) = Percentage of deposits which a bank must keep as cash reserves with the bank.

- **Statutory Liquidity Ratio or SLR:** Apart from the CRR, banks are also required to keep some reserves in liquid form in the short term. This ratio is called **Statutory Liquidity Ratio or SLR.**
- In a hypothetical scenario with a reserve ratio of 20%, a bank with a deposit of Rs 100 needs to keep Rs 20 (20% of 100) as cash reserves. The remaining amount, Rs 80 (100 – 20 = 80), can be used for loans. The reserve ratio limits the amount of credit banks can create. For example, if a bank starts with a deposit of Rs 100, it must keep Rs 20 (100 – 80) as cash reserves.
- The bank can lend out Rs 80 to Jaspal Kaur, resulting in a total of Rs 180 as deposits. The bank must keep Rs 36 as cash reserves, so it can lend Rs 64 again, resulting in Rs 64 as deposits. The required reserves will only be Rs 100 when the total deposits reach Rs 500. The process is illustrated in Table 7.2.
- The first column lists each round. The second column depicts the total deposits with the bank at the beginning of each round. 20% of these deposits need to be deposited with the RBI as required reserves (column 3). What the bank lends in each round gets added to the deposits with the bank in the next round. Column 4 indicates the Loans made by the banks.
- Since the bank is only expected to keep 20% of its deposits as reserves, thus, reserves of Rs 100 (20% of 500 = 100) can support the deposits of Rs 500. In other words, our bank can give a loan of Rs 400. Table 7.3 demonstrates its balance sheet.

Table 7.3 Balance sheet of bank

Assets		Liabilities	
Reserves	Rs 100	Deposits (100+400)	Rs 500
Loans	Rs 400		
Total	Rs 500	Total	Rs 500

M1 = Currency + Deposits = 0 + 500 = 500

- Thus, the money supply increases from Rs 100 to Rs 500. Given a CRR of 20 per cent, the bank cannot give a loan beyond Rs 400. Hence, the **requirement of reserves acts as a limit to money creation.**

$$\text{Money Multiplier} = \frac{1}{\text{Cash Reserve Ratio}}$$

$$\text{In our example, money multiplier} = \frac{1}{20\%} = \frac{1}{0.2} = 5.$$

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Loan activities of Banks

- **Banks use a major portion of the deposits to extend loans.** There is a huge demand for loans for various economic activities. Banks make use of the deposits to meet the loan requirements of the people.
- Banks **mediate between** those who have **surplus funds** (the depositors) and those **who are in need of these funds** (the borrowers).
- Banks charge a higher **interest rate** on loans than what they offer on deposits. The difference between what is charged by borrowers and what is paid to depositors is their main source of income.

POINTS TO PONDER

The Real interest rate is the difference between nominal interest rate and inflation. So the interest that we receive on our deposits is also influenced by inflation. What do you think happens if the real interest rate turns negative?

Different Credit Situations

- **Credit is an agreement** where a lender provides money, goods, or services to a borrower in exchange for a promise of future payment.
- **Example 1**: During a festival season a manufacturer gets a credit based on an agreement- where a lender provides money, goods, or services to a borrower in exchange for a promise of future payment**. Credit therefore plays a vital and positive role in this situation.**
- **Example 2:** Swapna, a small farmer, takes a loan from a moneylender to cultivate groundnut. Despite pests and expensive pesticides, she cannot repay the loan. The debt grows, and she takes a fresh loan. Despite a normal crop, Swapna's earnings are insufficient to cover the old loan, forcing her to sell land. **Credit in this case pushes the borrower into a situation from which recovery is very painful**.
- Credit can either increase earnings and improve an individual's situation or, due to crop failure, can lead to a debt trap.
- In rural areas, credit is primarily needed for crop production, which involves significant costs such as seeds, fertilisers, pesticides, water, electricity, and equipment repair.

Terms of Credit

- **Loan agreements** specify an **interest rate,** principal payment, and collateral requirements for the borrower, with lenders potentially demanding collateral for loans**.**
- **Collateral** is an asset that the borrower owns (such as land, building, vehicle, livestock, and deposits with banks) and uses this as a guarantee to a lender until the loan is repaid.
- If the borrower fails to repay the loan, the lender can sell the collateral, such as property, deposits, or livestock, to obtain payment.
- Interest rate, collateral and documentation requirement, and the mode of repayment together comprise what is called the **terms of credit**.
- The **terms of credit** vary substantially from one credit arrangement to another. They may vary depending on the nature of the lender and the borrower.

Loans from Cooperatives

- The major source of cheap credit in rural areas is the cooperative societies (or cooperatives). Members of a cooperative pool their resources for cooperation in certain areas.

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- There are several types of cooperatives possible such as farmers cooperatives, weavers cooperatives, industrial workers cooperatives, etc.
- Cooperatives accept deposits from its members. With these deposits as collateral, the Cooperatives obtain a large loan from the bank. These funds are used to provide loans to members. Once these loans are repaid, another round of lending can take place.

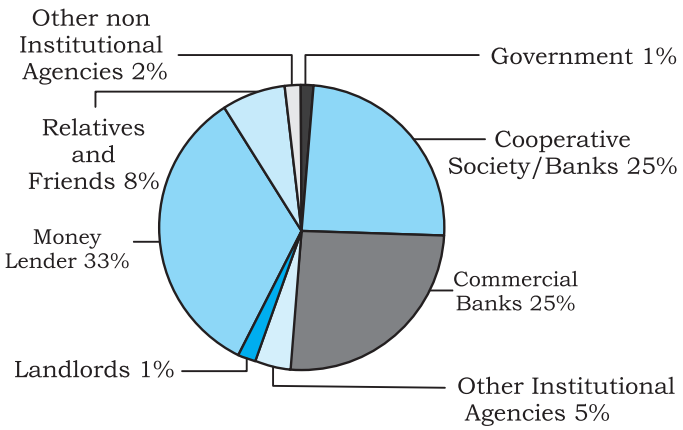

Figure 7.4: Sources of credit per Rs 1000 of Rural Households in India in 2012

Sectoral Credit Loans Distribution in India

*The various types of loans can be conveniently grouped as **formal sector loans** and **informal sector loans.** As shown in the figure 7.4, you can see the various sources of credit to rural households in India.*

Formal Sector Loans

- These are loans from banks and cooperatives. The Reserve Bank of India (RBI) oversees the functioning of formal loan sources, ensuring banks maintain a minimum cash balance from their received deposits.
- The RBI sees that the banks give loans not just to profit-making businesses and traders but also to small cultivators, small-scale industries, to small borrowers etc.
- Banks are required to provide regular information to the RBI regarding their lending amounts, recipients, and interest rates.

Informal Sector Loans

- These are mainly from moneylenders, traders, employers, relatives and friends, etc.
- There is no organization that supervises the credit activities of lenders in the informal sector. They have the freedom to lend at any interest rate and are not impeded from using unfair methods to recover their money.
- Informal lenders often charge higher interest rates than formal lenders, resulting in higher borrower costs.
- High borrowing costs result in borrowers using more of their earnings to repay loans, reducing income and potentially leading to debt traps. This can also discourage individuals from starting businesses due to the high cost of borrowing. For these reasons, banks and cooperative societies need to lend more.
- **Cheap and affordable credit is crucial for the country's development.** It would lead to higher incomes and many people could then borrow cheaply for a variety of needs. They could grow crops, do business, set up small-scale industries etc. They could set up new industries or trade in goods.

Formal and Informal Credit

- Figure 7.5 shows the importance of formal and informal sources of credit for people in urban areas. The people are divided into four groups, from poor to rich, as shown in the figure.

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- 85 percent of the loans taken by poor households in urban areas are from informal sources.
- Among rich urban households, only 10 percent of their loans are from informal sources, while 90 percent are from formal sources.
- A similar pattern is also found in rural areas. The rich households are availing cheap credit from formal lenders whereas the poor households have to pay a large amount for borrowing.

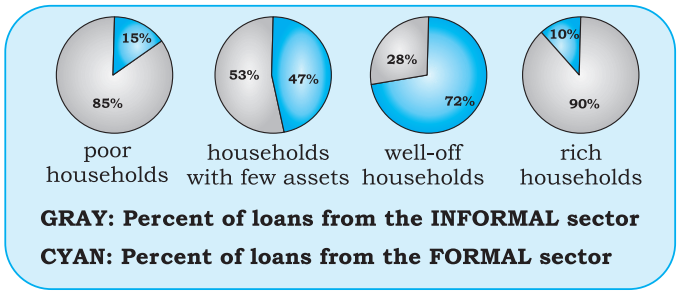

Figure 7.5 : Urban Households Formal/Informal Loans

- The formal sector meets **only about half of the total credit** needs of the rural people.
- Most loans from informal lenders carry a **very high-interest rate** and do little to increase the income of the borrowers.
- It is necessary that banks and cooperatives increase their lending, particularly in rural areas, so that the dependence on informal sources of credit is reduced.
- While formal sector loans need to expand, it is also necessary that everyone receives these loans.
- It is important that the formal credit is distributed more equally so that the poor can benefit from the cheaper loans.

Self-Help Groups (SHGs) for the Poor

SHGs are organized groups of rural poor, particularly women, who themselves manage these groups by pooling their resources.

Need of SHG

- Banks are not present in every part of rural India, and even when they are present, obtaining a loan from a bank is more challenging than from informal sources.
- **Absence of collateral** is one of the major reasons which prevents the poor from getting bank loans.
- **Informal sector lenders** provide collateral-free loans by exploiting the borrowers at a **high rate of interest.**

Grameen Bank of Bangladesh

Bank of Bangladesh is one of the biggest success stories in reaching the poor to meet their credit needs at reasonable rates. Started in the 1970s as a small project, Grameen Bank in 2018 had over 9 million members in about 81,600 villages spread across Bangladesh. Almost all of the borrowers are women and belong to poorest sections of the society.

- SHGs play a major role in tackling these issues by empowering members through better lending facilities.

Nature of SHG

- A typical SHG has 15-20 members, usually belonging to one neighborhood, who meet and save regularly. Saving per member varies from Rs 25 to Rs 100 or more, depending on the ability of the people to save.
- Members can take small loans from the group itself to meet their needs.
- The group charges interest on these loans but this is still less than what the moneylender charges. After a year or two, if the group is regular in savings, it becomes eligible for availing loan from the bank.
- **Loan is sanctioned in the name of the group** and is meant to create self-employment opportunities for the members.

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- It is the **group which is responsible for the repayment** of the loan. Any case of non-repayment of a loan by any one member is followed up seriously by other members of the group. Because of this feature, banks are willing to lend to poor women when organized in SHGs, even though they have no collateral as such.
- SHGs help borrowers overcome the **problem of lack of collateral** and they can get timely loans as well. SHGs are the **building blocks of the organization of the rural poor**.

Demonetisation

- In November 2016, India implemented demonetisation to **combat corruption, black money, terrorism, and fake currency circulation.** Old currency notes of Rs 500 and Rs 1000 were replaced with new Rs 500 and Rs 2000 notes.
- Public advised to deposit old notes in bank accounts until December 31, 2016, without declaration or with RBI declaration until March 31, 2017. Exchange of old currency was allowed per person and day. Old currency notes were still acceptable until December 12, 2016.
- The demonetization of currency led to long queues and shortage of currency, negatively impacting economic activities. However, it improved tax compliance, channeling individual savings into the formal financial system and allowing banks to provide loans at lower interest rates.
- This move demonstrates the **state's decision to curb black money, reducing tax evasion and corruption.** Demonetisation also helps tax administration by **shifting transactions from the cash economy to the formal payment system,** as households and firms transition from cash to electronic payment technologies.

Demand and Supply for Money: A Detailed Discussion

- Since money is globally accepted and hence **easily exchangeable** for other goods, it is the most liquid of all assets.
- However, there is an opportunity cost involved. You can earn interest on money by putting it in a fixed deposit at a bank rather than keeping it in a specific cash balance.
- One must weigh the benefits of liquidity against the drawbacks of missing out on interest when determining how much money to hold at any given time.
- As a result, **demand for cash balance** is frequently referred to as **liquidity preference.**
- People desire to hold money balance broadly from **two motives.**

The Transaction Motive

- The main reason for holding money is to carry out transactions. If you receive income weekly and pay bills on the first day, you don't need to maintain a cash balance throughout the week. However, our **expenditure patterns don't always match our receipts.**
- For example, if you earn Rs 100 on the first day of every month and spend it evenly throughout the month, your average cash holding is Rs 50. This means you make transactions worth Rs 100 per month, resulting in an average transaction demand equal to half your monthly income.
- In a two-person economy, a firm and a worker are both owned by one person. The worker receives a monthly salary of Rs 100, which the worker spends on the firm's output.
- The firm has a balance of Rs 0 at the start of the month, and on the last day, it has a balance of Rs 100. The average money holding of the firm and worker is Rs 50 each, resulting in a total transaction demand of Rs 100.
- The monthly transactions in this economy are Rs 200, with the transaction demand being a fraction of the total volume of transactions over a unit period.

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- In general, therefore, the **transaction demand for money in an economy, M^d_T** , can be written in the following form

$$M^d_T = k.T$$

where **T is the total value of (nominal) transactions in the economy over a unit period and k is a positive fraction**.

- The two-person economy uses a money balance of Rs 100 for transactions worth Rs 200 per month. Each rupee changes hands twice a month, with the velocity of circulation being the ratio of money balance to transaction value.
- The economy operates on a two-person system, with each rupee being transferred from the employer's pocket to the worker's hand and vice versa.
- Thus, in general, we may rewrite the equation in the following form

$$(1/k).M^d_T = T, \text{ or } v.M^d_T = T$$

where **v = 1/k is the velocity of circulation. Note that the term on the right-hand side of the above equation, T, is a flow variable whereas money demand, M^d_T, is a stock concept** – it refers to the stock of money people are willing to hold at a particular point in time.

- But the velocity of money, v, has a time component. It relates to how frequently each unit of stock changes hands over the course of a given time period, such as a month or a year.
- As a result, the left-hand side, $v.M^d_T$, calculates the total value of monetary transactions done with this stock throughout the course of the unit period of time. Since this is a flow variable, it is equal to the right side.
- We are ultimately interested in learning the relationship between the aggregate transaction demand for money of an economy and the (nominal) GDP in a given year.
- However, normally, there exists a stable, positive relationship between the value of transactions and the nominal GDP.
- An increase in nominal GDP implies an increase in the total value of transactions and hence a greater transaction demand for money.
- Thus, in general, the equation for M^d_T can be modified in the following way

$$M^d_T = kPY$$

where **Y is the real GDP and P is the general price level or the GDP deflator.** The above equation tells us that transaction demand for money is positively related to the real income of an economy and also to its average price level.

The Speculative Motive

- **Individuals can hold wealth in various forms**, including **bonds**, which are papers promising a future stream of monetary returns over a certain period.
- Bonds are issued by governments or firms for borrowing money from the public and are tradable in the market.
- For example, a two-period bond with a face value of Rs 100, a maturity period of two years, and a coupon rate of 10% can be compared to a savings bank account with an interest rate of 5%. This helps in understanding the potential earnings of bonds compared to savings bank accounts.
- The **amount of money X,** will generate Rs 10 after being kept in a savings account,

$$X(1 + \frac{5}{100}) = 10$$

In other words,

$$X = \frac{10}{(1+\frac{5}{100})}$$

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This amount, Rs X, is called the present value of Rs 10 discounted at the market rate of interest. Similarly, let Y be the amount of money which if kept in the savings bank account will generate Rs 110 at the end of two years. Thus, the present value of the stream of returns from the bond should be equal to the Calculation revealing that it is Rs 109.29 (approx.).

$$PV = X + Y = \frac{10}{(1+\frac{5}{100})} + \frac{(10+100)}{(1+\frac{5}{100})^2}$$

- In a competitive asset market, the price of a bond must always equal its present value in equilibrium.
- If a bond is offered at a face value of Rs 100, it becomes more attractive than a savings bank account.
- **Competitive bidding** raises the bond price above its face value until it equals its present value (PV). If the price rises above the PV, the bond becomes less attractive and people may want to sell it.
- Now consider an increase in the market rate of interest from 5% to 6%. The present value, and hence the **price of the same bond**, will become

$$\frac{10}{(1+\frac{6}{100})} + \frac{(10+100)}{(1+\frac{6}{100})^2} = 107.33\ (approx.)$$

- It follows that the **price of a bond is inversely related to the market rate of interest.**
- People have varying expectations about future market interest rates based on their economic information. If the current rate of 5% is considered too low, people may expect interest rates to rise, leading to a fall in bond prices.
- This loss, known as a **capital loss**, can result in bondholders selling their bonds and holding money instead.
- This speculation leads to a **speculative demand for money**, as people try to sell their bonds and hold money instead of relying on future market rate movements.
- High-interest rates lead to people anticipating capital gains from bond-holding, converting money into bonds, and **reducing speculative demand for money**.
- Conversely, low-interest rates result in people converting bonds into money, causing a high speculative demand for money, which is **inversely related to the interest rate.**
- Assuming a simple form, the **speculative demand for money** can be written as

$$M^d_S = \frac{r_{max} - r}{r - r_{min}}$$

where r is the market rate of interest and r_{max} and r_{min} are the upper and lower limits of r, both positive constants. It is evident from the above equation that as r decreases from r_{max} to r_{min}, the value of MdS increases from 0 to ∞.

- Interest rates are an **opportunity cost or 'price'** of holding money balance in an economy.
- An increase in money supply leads to higher bond demand, higher bond prices, and a decline in interest rates.
- However, if the market rate of interest is low enough to cause capital losses, people will not want to hold bonds. Instead, they will hold their wealth in a money balance.

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- **Liquidity trap**: If additional money is injected, it will be used to satisfy people's craving for money balances without increasing bond demand or lowering interest rates below the floor r_{min}. This is known as a **liquidity trap.** The speculative money demand function is infinitely elastic here.
- In **Figure. 7.6** the speculative demand for money is plotted on the horizontal axis and the rate of interest is on the vertical axis.
- When r = r(max), speculative demand for money is zero.
- Everyone expects the rate of interest to decline since it is so high and believes that there will be a capital gain in the future. So, everyone changed the balance of speculative money into bonds.
- When $r = r_{min}$, the economy is in a **liquidity trap.**
- The total money demand in an economy **consists of transaction and speculative demand,** with transaction demand directly proportional to GDP and price level and speculative demand inversely related to market interest rate.
- The aggregate money demand in an economy can be summarized by the following equation

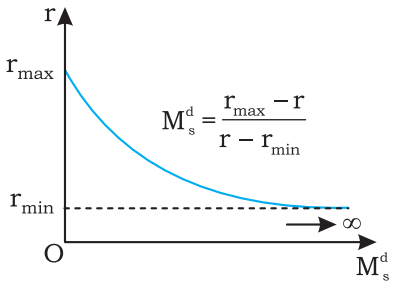

Figure 7.6: The Speculative Demand for Money

$$M^d = M_T^d + M_S^d$$

$$\text{or, } M^d = kPY + \frac{r_{max} - r}{r - r_{min}}$$

Conclusion

Loans and credit are necessary for economic activity. There are numerous sources of credit. They may be formal sources or informal sources. It is crucial that total formal sector credit rises in order to reduce reliance on more expensive informal credit. Money facilitates exchanges by acting as a common medium. In modern economies, people hold money for transactions and speculative motives. In India, the Reserve Bank of India (RBI) regulates the supply of money by controlling high-powered money stock, bank rates, and reserve requirements of commercial banks. The RBI also sterilises the money supply against external shocks, ensuring a stable and efficient economy.

Glossary:

- **Aggregate monetary resources:** Broad money without time deposits of post office savings organisation (M3).
- **Bank Rate :** The rate of interest payable by commercial banks to RBI if they borrow money from the latter in case of a shortage of reserves.
- **Barter exchange Exchange:** of commodities without the mediation of money.
- **Broad money:** Narrow money + time deposits held by commercial banks and post office savings organisations.
- **Cash Reserve Ratio (CRR):** The fraction of their deposits that the commercial banks are required to keep with RBI.
- **Currency deposit ratio:** The ratio of money held by the public in currency to that held as deposits in commercial banks.
- **Fiat money:** Money with no intrinsic value.
- **High-powered money:** Money injected by the monetary authority in the economy. Consists mainly of currency.

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- **Liquidity trap:** A situation of a very low rate of interest in the economy where every economic agent expects the interest rate to rise in future and consequently bond prices to fall, causing capital loss. Everybody holds her wealth in money and speculative demand for money is infinite.
- **Medium of exchange:** The principal function of money to facilitate commodity exchanges.
- **Money multiplier:** The ratio of total money supply to the stock of high-powered money in an economy.
- **Narrow money:** Currency notes, coins and demand deposits held by the public in commercial banks.
- **Open market operation:** Purchase or sales of government securities by the central bank from the general public in the bond market in a bid to increase or decrease the money supply in the economy.
- **Reserve deposit ratio:** The fraction of their total deposits that commercial banks keep as reserves.
- **Statutory Liquidity Ratio (SLR):** The fraction of their total demand and time deposits that the commercial banks are required by RBI to invest in specified liquid assets.
- **Unit of account:** The role of money as a yardstick for measuring and comparing values of different commodities.

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Government Budgeting

Bibliography: This chapter encompasses the summary of Chapter 5 of Class XII NCERT (Introductory Macroeconomics)

Introduction

In a mixed economy, both the government and private sector play pivotal roles. This chapter explores the government's financial activities through its budget, stating the sources of government revenue and avenues of spending. It gives us the notions of balanced, surplus, and deficit budgets, their implications, and measures to manage them. Fiscal policy and the multiplier effect are introduced, showing the government's influence on economic activity.

Government Budget

- The Government Budget in India is essentially an Annual Financial Statement as mandated by **Article 112** of the Indian Constitution.
- This statement, presented before the Parliament, encompasses the estimated receipts and expenditures of the government for a particular financial year, running from April 1 to March 31.

Classification of Budget Accounts

The budget is bifurcated into two main accounts: (Refer to Figure 8.1.)

- **Revenue Account (or Revenue Budget):** It includes items related only to the **current financial year.**
- **Capital Account (or Capital Budget):** It encompasses concerns regarding the **assets and liabilities** of the government.

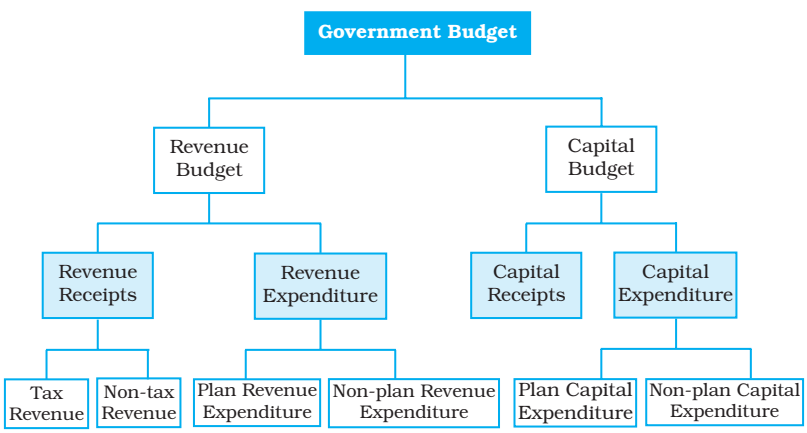

Figure 8.1

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Objectives of Government Budget

The government plays a very important role in increasing the welfare of the people. In order to do that, the government intervenes in the economy in the following ways.

Allocation Function of Government Budget

Government provides certain goods and services which cannot be provided by the market mechanism i.e. by exchange between individual consumers and producers. Such goods are:

- **Classification of Goods:** Goods are categorized into Public Goods and Private Goods based on their nature and the extent to which individuals can be excluded from their consumption.
  - **Examples of Public Goods:** National defense, roads, government administration etc.
  - **Examples of Private Goods:** Clothes, cars, food items etc.
- **Distinctive Features:** *Public Goods and Private Goods exhibit two major differences:*
  - **Non-Rivalry:** Public goods are characterised by non-rivalry, i.e., one person's consumption does not reduce the availability for others such as public parks or measures to reduce air pollution, unlike private goods, where consumption is rivalrous.
  - **Non-Excludability:** Public goods are non-excludable i.e., individuals cannot be feasibly excluded from enjoying their benefits even if they do not pay for them. On the other hand, individuals can be excluded from consuming private goods if they do not pay for them.
- **Challenges and Government Intervention**
  - The consumption of public goods leads to a phenomenon known as **'free-riders'**, where some users enjoy the benefits without paying, as there is no exclusive title to the property being enjoyed.
  - The broken link between producers and consumers, due to the absence of a payment process, necessitates government intervention to provide such goods.
- **Public Provision vs. Public Production**
  - **Public Provision:** It refers to the financing of public goods through the budget, allowing usage without any direct payment.
  - **Public Production:** It refers to when the government directly produces the goods. Public goods can be produced either by the government or the private sector, showcasing a clear distinction between public provision and public production.

Redistribution Function of Government Budget

- The **Redistribution Function of the Government Budget** is defined as the government's role in altering the distribution of income to achieve a distribution considered **'fair'** by society. This is achieved through the government's interventions like transfers and tax collections, which affect the personal disposable income of households.
- **Flow of National Income:** *National income is the total monetary value of all goods and services produced by a country during a financial year. The total national income of a country is distributed between:*
  - **Private Sector:** Consisting of firms and households, known as private income, and
  - **Government Sector:** Known as public income.

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- **Types of Private Income**
  - Private income is the total income received by the private sector from all sources.
  - **Personal Income:** The portion of private income that reaches households.
  - **Personal Disposable Income:** The amount from personal income that can be spent by households.
- **Government's Impact on Income Distribution**
  - The government influences personal disposable income by **Making Transfers** (such as subsidies or social benefits) and **Collecting Taxes** (from households and firms).
  - Through these actions, the government can **alter the distribution of income** to align with societal notions of fairness.

Stabilisation Function of Government Budget

- The **Stabilisation Function of the Government Budget** refers to the government's intervention to correct fluctuations in income, employment, and overall economic stability by either expanding or reducing aggregate demand, based on the prevailing economic conditions.
- **Economic Fluctuations and Aggregate Demand:** Economic stability is largely dependent on the level of aggregate demand, which in turn is influenced by the spending decisions of:
  - **Private Economic Agents:** Millions of individuals and firms whose spending decisions are influenced by factors like income and credit availability.
  - **Government:** Through its spending, taxation, and monetary policies.
- **Government Intervention in Case of Insufficient Demand:** There may be periods where the **level of demand is insufficient** for the full utilisation of labour and other resources in the economy.
  - Due to the rigidity of wages and prices not falling below a certain level, employment levels may not automatically revert to optimal levels.
  - The government, in such cases, needs to intervene to **raise the aggregate demand** to stimulate economic activity and employment.
- **Government Intervention in Case of Excessive Demand:** Conversely, there might be times when **demand exceeds available output** under conditions of high employment, potentially leading to inflation. In such scenarios, the government may need to implement **restrictive measures to reduce demand,** curb inflation, and maintain economic stability.
- **Significance of Stabilisation Function:** The significance of the stabilisation function lies in the government's proactive intervention to either expand or reduce demand based on the economic scenario to ensure a stable economic environment with controlled inflation and optimal employment levels.

Classification of Receipts

Revenue Receipts

Revenue Receipts are defined as those receipts that do not create a claim on the government and, hence are termed as non-redeemable. They are broadly categorised into Tax Revenues and Non-Tax Revenues.

Tax Revenues

- Tax revenue is the income that is collected by governments through taxation. Taxation is the primary source of government revenue. Tax revenues are further subdivided into:

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- **Direct Taxes:** A direct tax is a tax that a person or organization pays directly to the government or an entity that imposes it. *Following are some examples:*
  - **Personal Income Tax:** Levied on **individual's** income.
  - **Corporation Tax:** Levied on **firm** profits.
  - Other direct taxes like **wealth tax, gift tax, and estate duty** (now abolished) are termed **'paper taxes'** due to their minimal contribution to revenue.
- **Indirect Taxes:** Indirect tax is the tax levied on the consumption of goods and services. *Following are some examples:*
  - **Excise Taxes:** Duties on goods produced domestically
  - **Customs Duties:** Taxes on imported and exported goods
  - **Service Tax:** Levied on the provision of services.
- **Taxation System:** *The taxation system is primarily categorised into two types:*
  - **Progressive Taxation System:** In this taxation system, higher income attracts a higher tax rate.
  - **Proportional Taxation System:** In this taxation system, where the tax rate is a particular proportion of profits.
- Indirect taxes are structured in a way to exempt or levy lower rates on necessities, moderate rates on comforts and semi-luxuries, and heavy rates on luxuries, tobacco, and petroleum products.

Non-Tax Revenues

- Non-tax revenue is the recurring income earned by the government from sources other than taxes. *Following are some examples:*
  - **Interest Receipts:** From loans provided by the central government.
  - **Dividends and Profits:** From government investments.
  - **Fees and Other Receipts:** For services rendered by the government.
  - **Cash Grants-in-aid:** From foreign countries and international organizations.
- The **estimation of revenue receipts** is influenced by the tax proposals outlined in the **Finance Bill.**

Capital Receipts

- Capital Receipts are defined as the monetary gains received by the government either through loans or the sale of its assets.
- These receipts either create a liability or reduce the financial assets of the government.

Following are the capital receipts:

- **Loans:** A loan is a sum of money that an individual, company, or government borrows from a bank or other financial institution.
  - Loans obtained by the government need to be repaid to the lending agencies, thereby creating a liability.
  - Taking fresh loans implies future repayment along with the payment of interest on these loans.
- **Sale of Government Assets:** Assets sales, such as the disinvestment of Public Sector Undertakings (PSUs)**,** result in a reduction of the government's total financial assets. This disinvestment refers to the sale of government shares in PSUs.
  - Post-sale, the government foregoes future earnings that could have been generated from those assets.

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- **Debt-Creating and Non-Debt Creating Receipts**
  - **Debt Receipts:** These are the receipts which create financial liabilities for the government. For example, loans.
  - **Non-debt Receipts:** These are the receipts which don't create any financial liabilities for the government.
- **Implications of Capital Receipts**
  - While loans enhance liabilities due to repayment and interest obligations, asset sales diminish the government's financial asset base along with future earning potential from those assets.

Classification of Expenditure

Revenue Expenditure

- Revenue Expenditure refers to spending incurred for purposes other than the creation of physical or financial assets of the central government.
- It encompasses expenses necessary for the normal functioning of government departments and services, interest payments on government debt, and grants distributed to state governments and other parties.

Classification of Revenue Expenditure

Revenue Expenditure is classified into ***plan and Non-Plan Expenditure (Refer to Table 8.1)*** *as per budget documents:*

Table 8.1: Receipts and Expenditures of the Central Government, 2020–21 (PA)

	(As per cent of GDP)
1. Revenue Receipts (a+b)	9.0
(a) Tax revenue (net of states' share)	7.3
(b) Non-tax revenue	1.7
2. Revenue Expenditure of which	11.7
(a) Interest payments	3.1
(b) Major subsidies	1.0
(c) Defence expenditure	0.9
3. Revenue Deficit (2–1)	2.7
4. Capital Receipts (a+b+c) of which	4.5
(a) Recovery of loans	0.1
(b) Other receipts (mainly PSU[1] disinvestment)	0.9
(c) Borrowings and other liabilities	3.5
5. Capital Expenditure	1.8
6. Non-debt Receipts [1+4(a)+4(b)]	10.0
7. Total Expenditure [2+5=7(a)+7(b)]	13.5
(a) Plan expenditure	–
(b) Non-plan expenditure	–
8. Fiscal deficit [7-1-4(a)-4(b)]	3.5
9. Primary Deficit [8–2(a)]	0.4

Source: *Economic Survey*, 2020–21

[1] Public Sector Undertaking

- **Plan Revenue Expenditure:** It relates to central Plans (the Five-Year plans) and central assistance for State and Union Territory plans.

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- **Non-Plan Revenue Expenditure:** It covers a vast range of general, economic and social services of the government. The main items of non-plan expenditure are interest payments, defense services, subsidies, salaries and pensions.
  - **Interest Payments:** On-market loans, external loans, and various reserve funds, represent the largest component of non-plan revenue expenditure.
  - **Defense Services:** Regarded as committed expenditure due to national security concerns, there is little scope for a significant reduction.
  - **Subsidies:** These are an important policy tool aimed at enhancing welfare. These can be implicit, through under-pricing of public goods and services like education and health, or explicit, on items such as exports, interest on loans, food, and fertilizers.
  - **Salaries and Pensions:** For government employees.

Capital Expenditure

- **Capital Expenditure** refers to government spending that results in the creation of physical or financial assets or a reduction in financial liabilities. It includes:
  - Acquisition of land, buildings, machinery, and equipment;
  - Investment in shares;
  - Loans and advances by the central government to state and union territory governments, Public Sector Undertakings (PSUs), and other parties.
- **Classification of Capital Expenditure**

  Capital Expenditure is also categorized as Plan and Non-Plan Expenditure in budget documents:
  - **Plan Capital Expenditure:** This pertains to the central plan and central assistance for state and union territory plans.
  - **Non-Plan Capital Expenditure:** It covers various general, social, and economic services provided by the government.
- **The Budget as a National Policy Statement**
  - The budget, especially post-independence with the initiation of the Five-Year Plans, has evolved to become a significant **national policy statement**, reflecting, shaping, and being shaped by the country's economic life.
- Accompanying the budget, three policy statements mandated by the **Fiscal Responsibility and Budget Management (FRBM) Act, 2003** are:
  - **Medium-term Fiscal Policy Statement:** It sets a three-year rolling target for specific fiscal indicators, examining the sustainability of financing revenue expenditure through revenue receipts and the productive utilization of capital receipts, including market borrowings.
  - **Fiscal Policy Strategy Statement:** It sets the government's fiscal priorities, examines current policies, and justifies any deviations in significant fiscal measures.
  - **Macroeconomic Framework Statement:** It assesses the economy's prospects concerning the GDP growth rate, the fiscal balance of the central government, and the external balance.

Balanced, Surplus, and Deficit Budget

The types of budgets are defined based on the relationship between the government's revenue collections and expenditures:

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- **Balanced Budget:** It occurs when the government's expenditures are equal to its revenue collections. If higher expenditures are necessary, the government would need to raise the corresponding amount through taxes to maintain a balanced budget.
- **Surplus Budget:** It is identified when the tax collections exceed the required expenditures.

Budget Implications:
The budget scenarios outline the financial health and fiscal policy stance of the government:
- ➢ A balanced budget indicates a neutral fiscal stance.
- ➢ A surplus budget suggests a contractionary fiscal stance.
- ➢ A deficit budget indicates an expansionary fiscal stance, which might be a response to stimulate economic growth during downturns, though it leads to an accumulation of government debt.

- **Deficit Budget:** It is a scenario where the government's expenditures surpass its revenue, which is the most common feature among the three.

Measures of Government Deficit

A government deficit arises when the government spends more than its revenue collections. Various measures of government deficit exist, each with different economic implications:

Revenue Deficit

- Revenue Deficit is the excess of the government's revenue expenditure over revenue receipts.
  - **Formula:** Revenue Deficit = Revenue Expenditure − Revenue Receipts
- In 2020-21, the revenue deficit was reported to be 2.7% of GDP. (Refer to Table 8.1)
- It only accounts for transactions affecting the current income and expenditure of the government.
- A revenue deficit indicates government dis-saving, utilising savings from other economic sectors to finance part of its consumption expenditure, thereby necessitating borrowing for both investment and consumption requirements.

Fiscal Deficit

- Fiscal Deficit is the difference between total government expenditure and total receipts, excluding borrowings.
  - **Formula:** Gross Fiscal Deficit = Total Expenditure − (Revenue Receipts+Non-debt creating capital receipts)
- Non-debt-creating capital receipts include recoveries of loans and proceeds from the sale of PSUs, which do not give rise to debt.
- The fiscal deficit, amounting to 3.5% of GDP, indicates the total borrowing requirements from all sources: (Refer to Table 8.1)
  - **Formula:** Gross Fiscal Deficit = Net borrowing at home + Borrowing from RBI + Borrowing from abroad
- It is a crucial indicator of the financial health of the public sector and economic stability.
- A significant share of revenue deficit in fiscal deficit implies a large portion of borrowing is used for consumption expenditure rather than investment.

POINTS TO PONDER
Economists across the spectrum agree that higher capital expenditure has multiplier effects on the economy. Given that India has always had a budget deficit, its expenditure is concentrated on revenue expenditure. Can you think of the reasons why revenue expenditure is higher in India? Also, find out what are the benefits accruing out of higher capital expenditure.

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Primary Deficit

- Primary Deficit focuses on current fiscal imbalances by excluding interest obligations on accumulated debt from the fiscal deficit.
  - **Formula:** Gross Primary Deficit = Gross Fiscal Deficit – Net interest liabilities
- Net interest liabilities include interest payments minus interest receipts by the government on net domestic lending.

Implications and Consequences

- These deficit measures are crucial for evaluating the government's fiscal discipline, borrowing requirements, and the impact on economic stability and growth.
- Persistent deficits, especially revenue deficits, may lead to unsustainable borrowing, accumulation of debt, and eventual expenditure cuts, which could adversely affect growth and welfare.

Fiscal Policy

- Fiscal Policy refers to the governmental strategy that utilizes changes in taxation and government spending to stabilize output and employment levels, aiming to modulate economic fluctuations.
- Fiscal Policy is a governmental strategy involving alterations in expenditures and taxes to stabilize the levels of output and employment, as proposed by **Keynes** in **"The General Theory of Employment, Interest and Money."**
- Fiscal policy aims to boost output and income and stabilize economic fluctuations by creating either a surplus budget (total receipts > expenditure), a deficit budget (total expenditure > receipts), or a balanced budget (expenditure = receipts).

Mechanisms of Fiscal Policy

Fiscal policy directly influences equilibrium income through two main channels:

- **Government Purchases (G):** Government purchases of goods and services (G) increase aggregate demand.
- **Taxes and Transfers:** Affect the relationship between **income (Y)** and **disposable income (YD)** - the income available for consumption and saving within households.

1. Taxation

- The government imposes lump-sum taxes (T), not dependent on income, along with a constant amount of transfers (TR).
- Taxes reduce disposable income and consumption, impacting aggregate demand.
- **Changes in Taxes:** A reduction in taxes boosts disposable income (Y–T) at every income level, propelling the aggregate expenditure schedule upwards by a fraction of the tax decrease.

Tax Multiplier

- The tax multiplier is a negative multiplier since a tax decrease or increase will lead to a rise or fall in consumption and output.
- The tax multiplier is smaller in absolute value compared to the government spending multiplier as tax variations impact disposable income, which then influences household consumption, a segment of total spending.

Balanced Budget Multiplier

- An equal increase in government spending and taxes, keeping the budget balanced, results in an output rise equal to the increment in government spending.

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Effects of Proportional Income Tax

- When GDP increases, disposable income also rises, but by a smaller margin due to the portion taken as taxes.
- This mechanism curtails extreme upward swings in consumption spending.
- Conversely, during a recession when GDP declines, the fall in disposable income is cushioned, preventing a drastic reduction in consumption that would otherwise occur with fixed tax liabilities.
- This, in turn, helps to mitigate the decline in aggregate demand, contributing to economic stability.

2. Discretionary Fiscal Policy

- Discretionary fiscal policy can be employed to counterbalance undesirable shifts in investment demand.
- For instance, a decrease in investment can be offset by an increase in government spending, keeping autonomous expenditure and equilibrium income constant.
- This deliberate action distinguishes discretionary fiscal policy from the inherent automatic stabilising features of the fiscal system.

3. Role of Welfare Transfers

- Welfare transfers play a role in stabilising income across different phases of economic cycles.
- In boom years with high employment, tax collections for financing such expenditures escalate, applying a stabilising pressure on high consumption spending.
- During economic downturns, welfare payments help to maintain consumption levels, acting as a shock absorber for the economy.

4. Private Sector Stabilisers

- The private sector also houses built-in stabilisers.
- For instance, corporations tend to maintain their dividends in the short term despite income changes, and households strive to uphold their previous living standards.
- These stabilizers operate automatically without necessitating action from decision-makers, thus acting as shock absorbers for economic fluctuations.

5. Transfers and Economic Output

- If the government opts to increase transfer payments instead of direct spending on goods and services, autonomous spending rises by a fraction of the transfer payment increase. However, the resultant rise in output is less compared to a scenario where government expenditure is increased, as a portion of the transfer payments is saved.

Debt

- Debt is an obligation to pay money to a creditor.
- The concept of government debt emanates from the budgetary practices employed to finance deficits.
- The information delves into the relationship between budgetary deficits and government debt, shedding light on how continual borrowing can snowball into a burgeoning debt issue.

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Financing Budgetary Deficits

- The government has three primary avenues to finance budgetary deficits: taxation, borrowing, and money printing.
- Among these, borrowing has been the predominant choice, leading to the accrual of government debt.

Deficits and Debt: A Relational Analysis

- Deficits are described as a flow that incrementally adds to the stock of debt.
- Continuous borrowing over the years results in debt accumulation, consequently escalating the financial burden on the government.

Interest Payments and Debt Accumulation

- A significant fallout of this accumulating debt is the increasing interest payments the government is obligated to make.
- These interest payments, over time, further contribute to the soaring debt, creating a cyclical pattern of financial strain.

Perspectives on the Appropriate Amount of Government Debt

The discourse around government debt intertwines two core facets - the burden it embodies and the methods utilised for its financing. Unlike a small trader, a government has the leeway to harness resources via taxation and money printing, broadening the spectrum of its financial dynamics.

The Burden of Government Debt

- Borrowing entails a shift of reduced consumption burden on future generations. This occurs as governments issue bonds today with the intent of paying them off in the distant future, possibly through heightened taxes.
- Such a fiscal approach may affect the young populace entering the workforce, diminishing their disposable income and, consequently, their consumption levels.
- The narrative extends to a decrease in national savings, and by absorbing savings from the populace, government borrowing potentially stifles the private sector's capital formation and growth, marking a 'burden' for the forthcoming generations.

Consumer Response to Government Debt

- Traditional arguments posit that tax cuts and ensuing budget deficits encourage consumers to elevate their spending, albeit possibly without a clear understanding of the deficit implications.
- A lack of insight or mere short-sightedness may lead to an underestimation of future tax hikes necessitated by the need to settle the debt and accumulated interest, often expecting the tax burden to fall on future generations.

The Ricardian Equivalence

- Contrarily, a perspective dubbed **Ricardian equivalence** proposes that consumers, being forward-looking, align their spending with both current and anticipated future incomes.
- Understanding that today's borrowing predicates future tax increments, and with a concern for the welfare of future generations, consumers might increase their savings now to counterbalance the government's increased dissaving, leaving national savings unaltered.
- The **Ricardian equivalence,** coined after economist David Ricardo, underscores an 'equivalence' between taxation and borrowing as a means to finance expenditure, suggesting that the economic impact of debt-financed government spending is analogous to that of tax-financed spending.

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The Notion of 'Debt Doesn't Matter'

- A recurrent argument posits that debt is inconsequential since **"we owe it to ourselves",** indicating that despite inter-generational resource transfer, the nation retains purchasing power.
- However, this stance finds its limitation when the debt owed to foreign entities comes into play, as it necessitates the export of goods to meet the interest payments, marking a tangible burden.

Other Perspectives on Deficits and Debt

The discourse around government deficits and debt unveils various critiques and perspectives. These financial aspects interface with inflation, investment, and the overall economy, painting a complex picture of their implications.

Deficits and Inflation

- Inflation is the **rising price of goods, commodities, and services** in an economy.
- A prevailing critique of deficits centres on their potential to fuel inflation.
- When the government amplifies **spending or slashes taxes**, it propels an increase in aggregate demand.
- In scenarios where firms falter to meet the heightened demand at **existing prices, prices are poised to escalate**.

Conversely, in the presence of unutilized resources where output is restrained by demand dearth, a substantial fiscal deficit could spur higher demand and augmented output without necessarily igniting inflation.

Deficits, Debt and Investment

- A notable argument is that deficits could lead to a dip in investment owing to the shrinkage of savings accessible to the private sector.
- The government, by opting to borrow from private citizens through bond issuance to cushion its deficits, orchestrates a competition between these bonds and other financial instruments like corporate bonds for the available fund pool.
- This dynamic could result in a **'crowding out'** effect in financial markets, with some private borrowers finding themselves side-lined as the government absorbs a larger share of the total savings.
- However, this notion hinges on a fixed savings flow assumption, which doesn't hold if the deficits successfully elevate production, thereby raising income and savings. In such a scenario, both the government and industrial sectors could borrow more.

Deficits, Debt and Future Generations

- If government deficits are **channelled into infrastructure investment**, it could potentially set a favourable stage for future generations, particularly if the returns on these investments surpass the interest rate.
- The consequent debt could be **offset by output growth, thus rendering the debt unburdensome**.
- The escalation in debt should be **evaluated in tandem with overall economic growth**, offering a balanced view of its impact and sustainability.

Deficit Reduction

- Deficit reduction is a crucial aspect of fiscal responsibility, entailing measures to lessen the gap between government expenditure and revenue. In India, this has been approached via enhanced tax revenues, efficient government spending, and re-evaluation of government scope in various sectors.

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- **Taxation Adjustments:** One of the strategies to trim down the deficit is by increasing tax revenues, with a particular focus on **direct taxes due to their progressive nature,** as opposed to indirect taxes, which are regressive and impact all income groups equally.
- **Revenue Generation through Asset Sales:** Efforts have also been made to increase receipts through the sale of shares in Public Sector Undertakings (PSUs), contributing to the deficit reduction endeavors.
- **Expenditure Optimisation:** The major impetus, however, has been curtailing government expenditure by augmenting efficiency in government activities. This encompasses better planning and administration of governmental programmes. A study by the Planning Commission revealed that to transfer Re1 to the impoverished, the government expends Rs 3.65 in food subsidy form, indicating that cash transfers could potentially elevate welfare, hence suggesting a more efficient subsidy delivery system.
- **Reshaping Governmental Scope:** There's also a discourse around altering the governmental scope by retreating from certain areas of operation. However, scaling back on crucial sectors like agriculture, education, health, and poverty alleviation could potentially have detrimental effects on the economy.
- **Fiscal Responsibility and Budget Management Act (FRBMA):** Given the propensity for huge deficits, self-imposed constraints have been advocated, akin to the provisions in FRBM Act in India, to not escalate expenditure beyond pre-determined thresholds.
- **Dissection of Deficit Dynamics:** It's pivotal to note that a larger deficit doesn't invariably denote a more expansionary fiscal policy. Fiscal measures might yield either a large or small deficit, contingent on the economic milieu. For instance, during a recession with a dip in GDP, tax revenues tend to plummet as lower earnings translate to lower taxes, inadvertently expanding the deficit. Conversely, in a boom, the deficit is likely to shrink even without any alteration in fiscal policy.

Fiscal Responsibility and Budget Management (FRBMA) Act, 2003

The Fiscal Responsibility and Budget Management (FRBMA) Act, 2003 is a critical legislative measure aimed at ensuring prudent fiscal policy and financial discipline in India, especially within a multi-party parliamentary system where electoral considerations significantly influence expenditure policies.

Key Objectives

- Enacted in August 2003, FRBMA **obliges the central government to maintain fiscal discipline,** ensure long-term macroeconomic stability, and achieve intergenerational equity through sufficient revenue surplus.
- The Act emphasizes effective debt management by minimising deficits and borrowings.
- This legislative measure enhances the fiscal **transparency and accountability** of the government, thus reinforcing an institutional framework for fiscal prudence.

Main Features of FRBMA, 2003

Fiscal Deficit Targets

- The Act necessitates the reduction of the fiscal deficit to a maximum of 3% of GDP and the elimination of the revenue deficit by March 31, 2009, followed by the buildup of an adequate revenue surplus.

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- Annually, the fiscal deficit should be reduced by 0.3% of GDP and the revenue deficit by 0.5%. If tax revenues fall short, the deficit must be adjusted through expenditure reduction.

Borrowing Limitations

- The **central government is prohibited from borrowing from the Reserve Bank of India (RBI),** except for temporary advances to bridge the gap between cash disbursements and receipts.
- From 2006-07 onwards, RBI was restricted from subscribing to the primary issues of central government securities.

Exceptional Circumstances

- Actual deficits may surpass the specified targets only under exceptional circumstances like national security threats or natural calamities, as defined by the central government.

POINTS TO PONDER

The Fiscal Responsibility and Budget Management Act, 2003 (FRBMA) demands the government to control their deficit to 3% of GDP. However, the USA and China have higher fiscal deficits and also debt to GDP ratios than India. Can you think of the reasons why maintaining a prudent fiscal deficit is important for India and why higher debt in the USA is not a bigger problem for them?

Transparency Measures

- The Act mandates greater transparency in fiscal operations.
- The central government is required to present three statements before both Houses of Parliament: **the Medium-term Fiscal Policy Statement, the Fiscal Policy Strategy Statement, and the Macroeconomic Framework Statement, along with the Annual Financial Statement.**
- A quarterly review of receipts and expenditure trends in relation to the budget must also be placed before both Houses of Parliament.

State-Level Adoptions

- While the Act primarily applies to the central government, all states have enacted similar fiscal responsibility legislation, broadening the rule-based fiscal reform programme across the nation.

FRBM Review Committee

- Over the thirteen years post-enactment, India has evolved into a middle-income country, and though the global trend shifted towards fiscal discretion, India retained its commitment to the fiscal rules outlined in the FRBMA.
- There is support for retaining the basic operational framework of FRBM Act, while revamping it to align with India's changing economic landscape and future growth trajectory, a task assigned to the FRBM Review Committee.

Concerns

- Despite the government's assertion that FRBMA is a pivotal institutional mechanism for fiscal prudence, concerns loom that welfare expenditure might be curtailed to meet the Act's mandated targets, potentially impacting various critical sectors like **agriculture, education, health, and poverty alleviation.**

GST: One Nation, One Tax, One Market

- The Goods and Services Tax (GST), operational from July 1, 2017, is a comprehensive single indirect tax imposed on the supply of goods and services from the manufacturer or service provider to the consumer, applicable throughout India.

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- It's a **destination-based consumption tax** promoting **Input Tax Credit (ITC)** utilization in the supply chain, with one rate applied to one type of goods/service, thus ensuring tax parity across the nation.

Tax Framework Pre and Post GST

- **Pre-GST:** Taxes were levied not on the value added at each stage but on the total value of the commodity/service, leading to a cascading tax effect.
- **Post-GST:** Tax is levied at every stage of supply, with credit for tax paid at the previous stage available at the next stage, making it a tax on value addition at each stage.

Subsumption of Taxes

- Amalgamated numerous Central and State taxes and cesses, replacing them with a single tax to simplify the tax structure.
- Major taxes subsumed include Central Excise Duty, Service Tax, VAT/Sales Tax, Entry Tax, Luxury Tax, and various cesses.

POINTS TO PONDER

The Goods and Services Tax (GST) was a big change in the Indian tax system streamlining the inter-state and intra-state taxing. On the other hand, it has led to a huge revenue loss for several states. Can you find out how the states are being compensated? What other problems can you think of with respect to GST?

Tax Rates

- **Five standard GST rates are applied:** 0%, 5%, 12%, 18%, and 28% on all goods and/or services.
- Special provisions exist for five petroleum products, alcoholic liquor for human consumption, and tobacco products, not subsumed in GST.

Implementation and Legislative Backing

- Launched on the midnight of 30 June/1 July 2017 during a special midnight session of Parliament.
- Backed by the **101st Constitution Amendment Act,** Article 246A in the Constitution for cross-empowering Parliament and State Legislatures to enact laws concerning GST.

Impact and Advantages

- Created a common market, facilitating the free movement of goods and services across the country.
- Reduced the cost of business operations and the cascading effect of various taxes on consumers.
- It is expected to boost GDP by about 2% and enhance the competitiveness of Indian products/services both domestically and internationally.
- Simplified tax compliance through an online portal www.gst.gov.in, expanding the tax base, introducing higher transparency, reducing the human interface between Taxpayer and Government, and furthering ease of doing business.

Conclusion

The government's fiscal operations, showcased through its budget, play an important role in a mixed economy, influencing economic stability and growth. The balance between revenue collection and spending results in either a balanced, surplus, or deficit budget, each having distinct economic repercussions. Deficit management, through measures like taxation and expenditure cuts, is vital to controlling debt accumulation, thereby ensuring a financially sustainable trajectory for the economy.

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Glossary

- **A Government budget:** It is an annual financial statement that calculates a government's anticipated revenue and expenditure for a fiscal year.
- **A free rider:** It refers to someone who benefits from something without paying for it or earning it.
- **National income:** It is the total monetary value of all goods and services produced by a country during a financial year.
- **Private income:** It can be defined as the total income received by the private sector from all sources. This includes income from wages and salaries, rent, interest, dividends, and capital gains. Private income can also be defined as the total income of individuals and households from all sources, excluding government transfers.
- **Aggregate demand (AD):** It is the total demand for all goods and services produced in an economy at a given time.
- **Revenue Receipts:** They are defined as those receipts that do not create a claim on the government and, hence are termed as non-redeemable.
- **Direct tax:** It is a tax that a person or organization pays directly to the government or an entity that imposes it.
- **Indirect tax:** It is the tax levied on the consumption of goods and services.
- **Progressive taxation system:** It is employed for income taxation, where higher income attracts a higher tax rate.
- **Proportional taxation system:** In this system, the tax rate is a particular proportion of profits.
- **Non-Tax Revenue:** It is the recurring income earned by the government from sources other than taxes.
- **Loan:** It is a sum of money that an individual, company, or government borrows from a bank or other financial institution.
- **The crowding out effect:** It states that increased government spending decreases private sector spending.

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Open Economy

Bibliography: This chapter encompasses the summary of Chapter 6 of Class XII NCERT (Introductory Macroeconomics)

Introduction

In the realm of global economics, exchange rate systems play a pivotal role in shaping trade and financial interactions among nations. Exchange rate systems are divided into fixed, flexible, and managed floating. Fixed systems have government-set rates, maintained through foreign exchange reserves. Flexible systems allow market-driven rates, providing automatic balance of payment adjustments. Managed floating systems are hybrids, permitting central bank interventions to moderate rate fluctuations. Short-term rate changes often arise from interest rate differentials and income variations, while long-term predictions use the Purchasing Power Parity theory to suggest rate adjustments for price equalisation across countries. Each system impacts global trade, investment, and economic policies differently.

Open Economy

An open economy is defined as one that interacts with other nations through various channels, unlike a closed economy, which has no linkages with the rest of the world. In an open economy, trade in goods, services, and financial assets with other countries is prevalent.

Linkages of an Open Economy

- **Output Market:** It is a trade in goods and services with other countries. It provides a wider choice for consumers and producers between domestic and foreign goods.
- **Financial Market:** It is the ability to buy financial assets from other countries. It offers investors a choice between domestic and foreign assets.
- **Labour Market:** Firms can choose production locations, and workers can choose where to work, although immigration laws may restrict labour movement.

Trade and Aggregate Demand

Foreign trade influences aggregate demand in two ways:

- **Leakage:** Purchases of foreign goods lead to a leakage from the circular flow of income, decreasing aggregate demand.
- **Injection:** Exports enter as an injection into the circular flow, increasing aggregate demand.

International Monetary Transactions

- Goods moving across borders require money for transactions, but there's no single currency or issuing bank at the international level.
- A national currency is accepted internationally if it maintains stable purchasing power.

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- In the past, currencies were often backed by assets like gold to gain confidence; however, with increased transactions, gold ceased to be the backing asset.
- The international monetary system has been set up to handle these issues and ensure stability in international transactions.

Balance of Payments (BoP)

- The Balance of Payments (BoP) records transactions in goods, services, and assets between residents of a country and the rest of the world over a specified time period, typically a year.
- It comprises two main accounts, the **Current Account and the Capital Account.**

There is a new classification in which the balance of payments have been divided into three accounts:

- The current account, the financial account and the capital account. This is as per the new accounting standards specified by the International Monetary Fund (IMF) in the sixth edition of the Balance of Payments and International Investment Position Manual (BPM6).
- India has also made the change but the Reserve Bank of India continues to publish data accounting to the old classification.

Current Account

The Current Account records trade in goods and services as well as transfer payments. Components of Current Account (as illustrated in Figure 9.1):

- **Trade in Goods:** It involves exports and imports of goods. Buying foreign goods (imports) decreases domestic demand, while selling goods to foreign countries (exports) increases domestic demand in the country.
- **Trade in Services:** It includes factor income and non-factor income transactions.
- **Transfer Payments:** Receipts received **'for free'** by residents of a country without the provision of any goods or services in return. It comprises gifts, remittances, and grants from either the government or private citizens living abroad.

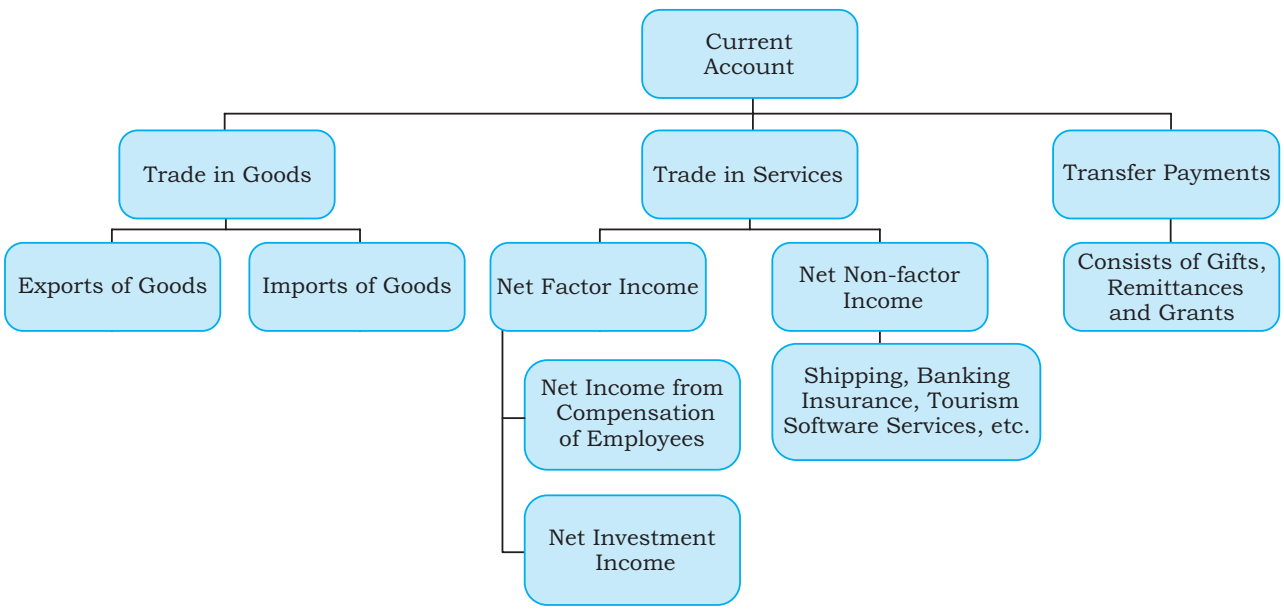

Figure 9.1: Components of Current Account

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Economic Implications

- The purchase of foreign goods, or imports, is an expenditure from the country, becoming income for the foreign country and reducing domestic demand for goods and services.
- Conversely, the sale of goods to foreign countries, or exports, brings income to the country, enhancing the aggregate domestic demand for goods and services.

Balance on Current Account

- The Balance on the Current Account is achieved when the receipts on the current account are equal to the payments on the current account.

Current Account Surplus	Balanced Current Account	Current Account Deficit
Receipts > Payments	Receipts = Payments	Receipts < Payments

- It reflects a nation's status as either a lender (surplus) or a borrower (deficit) with other countries.

Components of Balance on Current Account

- **Balance of Trade (BOT) or Trade Balance**
  - Defined as the difference between the value of exports and imports of goods within a specified time period.
  - Exports are credited, while imports are debited in the BOT.
  - A balanced BOT occurs when the value of exports equals the value of imports.
  - A Surplus BOT (Trade Surplus) arises when a country exports more goods than it imports.
  - A Deficit BOT (Trade Deficit) arises when a country imports more goods than it exports.

POINTS TO PONDER

The Balance of Payments (BoP) records transactions in goods, services, and assets between residents of a country and the rest of the world over a specified time period, typically a year. India has historically been a BoP deficit country, can you search for instances when India had a surplus and find out reasons why we had a surplus during that time?

- **Balance on Invisibles**
  - Represents the net value of invisibles, which is the difference between the value of exports and imports of invisibles within a specified time period.
  - Invisibles encompass **services, transfers, and flows of income** occurring between different countries.
  - **Services Trade:** Comprises both factor and non-factor income. Factor income includes net international earnings on factors of production such as labour, land, and capital. Non-factor income entails the net sale of service products like shipping, banking, tourism, and software services.

Economic Implications

- A Surplus Current Account indicates a nation's position as a lender to other countries, while a Deficit Current Account signifies a nation's position as a borrower from other countries.
- The Balance of Trade and Balance on Invisibles collectively provide a comprehensive view of a country's economic interactions and standing on the global stage.

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Capital Account

The Capital Account is a record of all international transactions of assets, where assets are various forms of wealth such as money, stocks, bonds, and government debt.

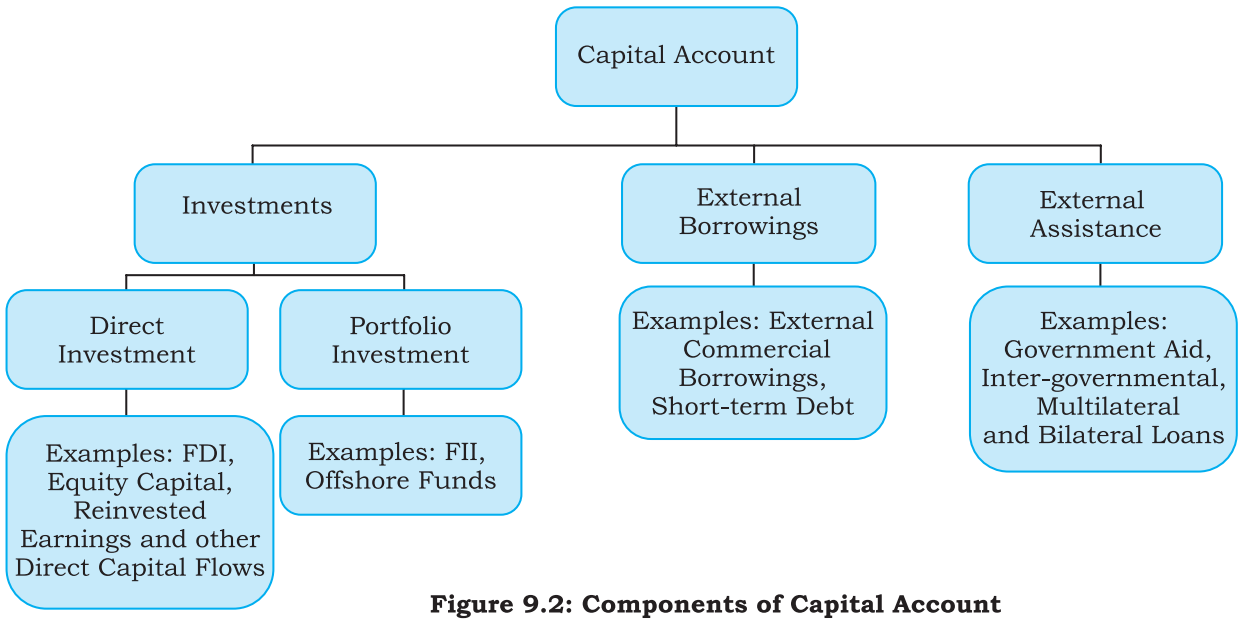

Figure 9.2: Components of Capital Account

Components of Capital Account Transactions

- The capital account transactions encompass various items, including, Foreign direct investments (FDIs), Foreign institutional investments (FIIs), External borrowings and assistance etc.

Economic Implications

- The transactions recorded in the capital account provide insight into a country's financial interactions on an international scale, showcasing the flow of assets across borders.
- The balance between debit and credit items in the capital account reflects the financial health and global economic position of a country.

Transaction Recording

- Purchases of assets are recorded as debit items on the capital account, indicating an outflow of resources. For example, if an Indian entity purchases a UK Car Company, it is recorded as a debit item since foreign exchange is flowing out of India.
- Sales of assets are recorded as credit items on the capital account, indicating an inflow of resources. For example, the sale of shares of an Indian company to a Chinese customer is recorded as a credit item.

Balance on Capital Account

- The capital account is in balance when capital inflows (like receipt of loans from abroad, sale of assets or shares in foreign companies) are equal to capital outflows (like repayment of loans, purchase of assets or shares in foreign countries).
- The surplus in the capital account arises when capital inflows are greater than capital outflows, whereas a deficit in the capital account arises when capital inflows are lesser than capital outflows.

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Balance of Payments Surplus and Deficit

- The Balance of Payments (BoP) mirrors the financial dynamics of an individual, spending more than the income necessitates either selling assets or borrowing to bridge the gap.
- Similarly, a country with a current account deficit (spending more than it earns from global sales) must either sell assets or borrow internationally to offset the deficit.

BoP Deficit	Balanced BoP	BoP Surplus
Overall Balance < 0	Overall Balance = 0	Overall Balance > 0
Reserve Change > 0	Reserve Change = 0	Reserve Change < 0

- The equation **Current account + Capital account = 0** shows the BoP is in equilibrium where a current account deficit is counterbalanced by a capital account surplus, denoting a net capital inflow.

Mechanics of Balancing Payments

- A country can attain a **BoP** equilibrium by fully financing its current account deficit through international lending, devoid of any reserve movements.
- Alternatively, a country could utilise its foreign exchange reserves to balance any deficit in its BoP.
- The Reserve Bank engages in the sale of foreign exchange during a deficit scenario, termed an **official reserve sale.**
- A decrease in official reserves signifies an overall BoP deficit, while an increase denotes a BoP surplus.

Autonomous Transactions

- Autonomous transactions are international economic activities undertaken for reasons other than bridging the Balance of Payments (BoP) gap. For instance, engaging in transactions to earn profits.
- These transactions are termed 'above the line' items in the BoP.
- A surplus or deficit in the BoP is determined by whether autonomous receipts are greater or lesser than autonomous payments, respectively.

Accommodating Transactions

- Accommodating transactions, categorized as '**below the line**' items, are driven by the existing gap in the BoP, be it a deficit or surplus.
- They are essentially reactions to the net outcomes of autonomous transactions.
- Official reserve transactions, aimed at bridging the BoP gap, are considered the accommodating item in the BoP, with all other transactions being autonomous.

- The monetary authorities act as the ultimate financiers of any BoP deficit or the recipients of any surplus.
- **Relevance of Official Reserve Transactions:** Official reserve transactions hold greater relevance under a fixed exchange rate regime as compared to a floating exchange rate system.

Errors and Omissions

- It is difficult to record all international transactions accurately.
- Thus, we have a third element of BoP (apart from the current and capital accounts) called errors and omissions, which reflects this.

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Table 9.1 Provides a Sample of Balance of Payments for India.

No.	Item	Million USD
1.	Exports (of goods only)	150
2.	Imports (of goods only)	240
3.	Trade Balance [2 – 1]	–90
4.	(Net) Invisibles [4a + 4b + 4c]	52
	a. Non-factor Services	30
	b. Income	–10
	c. Transfers	32
5.	Current Account Balance [3+ 4]	–38
6.	Capital Account Balance [6a + 6b + 6c + 6d + 6e + 6f]	41.15
	a. External Assistance (net)	0.15
	b. External Commercial Borrowings (net)	2
	c. Short-term Debt	10
	d. Banking Capital (net) of which	15
	Non-resident Deposits (net)	9
	e. Foreign Investments (net) of which[6eA + 6eB]	19
	A. FDI (net)	13
	B. Portfolio (net)	6
	f. Other Flows (net)	–5
7.	Errors and Omissions	3.15
8.	Overall Balance [5 + 6 + 7]	0
9.	Reserves Change	0

Revision in Balance of Payments Accounting Standards

Previous Classification

- **Initially, transactions in the Balance of Payments (BoP) were segregated into two accounts:**
  - Current Account
  - Capital Account

Continuation of Old System

- Despite the new classification, RBI continues to publish the BoP accounts as per the old system.
- Detailed information regarding the new system is available in the Balance of Payments Manual for India, published by the Reserve Bank of India in September 2010.

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The Foreign Exchange Market

- The market in which national currencies are traded for one another is known as the foreign exchange market.

Foreign Exchange Rate

- Foreign Exchange Rate (also called Forex Rate) is the price of one currency in terms of another. It links the currencies of different countries and enables comparisons of international costs and prices. For example, if we have to pay Rs 50 for $1 then the exchange rate is Rs 50 per dollar.
- Major players in the foreign exchange market include commercial banks, foreign exchange brokers, other authorised dealers, and monetary authorities.

POINTS TO PONDER

A foreign exchange rate is required to ensure a cross border trade between two countries as the currencies of both countries and their value vary. Can you imagine a situation where India accepts the US dollar as its currency, what according to you would be its impact on the economy and polity of the country?

Global Connectivity

- Although participants may have their own trading centers, the foreign exchange market is worldwide.
- There is close and continuous contact between trading centers, allowing participants to deal in more than one market.
- For instance, an Indian resident planning a vacation to London would need to acquire pounds to pay for services during her stay.
- She would need to know where to obtain the pounds and the exchange rate to calculate the cost in her native currency.

Demand for Foreign Exchange

- Individuals and entities demand foreign exchange for various purposes, including purchasing goods and services from other countries, sending gifts abroad, and acquiring financial assets of a specific country.
- A rise in price of foreign exchange will increase the cost (in terms of rupees) of purchasing a foreign good. This reduces demand for imports and hence demand for foreign exchange also decreases, other things remaining constant.

Supply of Foreign Exchange

- The supply of foreign exchange in a home country originates from various channels including exports, which entail foreigners purchasing domestic goods and services, receipt of gifts or transfers from foreigners and foreigners buying assets in the home country.
- A rise in the price of foreign exchange will reduce the foreigner's cost (in terms of USD) while purchasing products from India, other things remaining constant. This increases India's exports and hence supply for foreign exchange may increase (whether it actually increases depends on a number of factors, particularly elasticity of demand for exports and imports.

Determination of the Exchange Rate

- Different countries have different methods of determining their currency's exchange rate.
- It can be determined through a Flexible Exchange Rate, Fixed Exchange Rate or Managed Floating Exchange Rate.

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Flexible Exchange Rate

- A Flexible Exchange Rate, also known as a Floating Exchange Rate, is determined by market forces of demand and supply.
- The exchange rate is established at the point where the demand curve intersects with the supply curve, as illustrated in Figure. 9.3.
- In a completely flexible system, Central Banks do not intervene in the foreign exchange market.

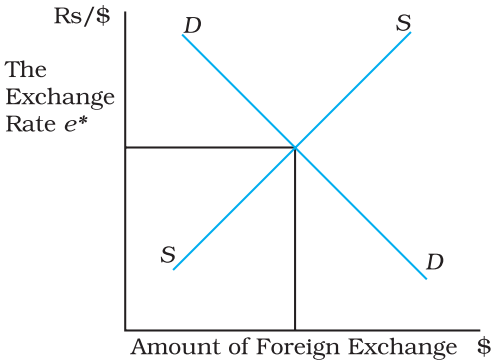

Figure 9.3: Equilibrium UNDER Flexible Exchange Rates

Impact of Demand Shift

- An increase in demand for foreign goods and services, for instance, due to increased international travel by residents, shifts the demand curve upward and to the right.
- This shift results in a change in the exchange rate, as depicted in Figure 9.4.

Exchange Rate Changes

- Initially, the exchange rate $e_0 = 50$ implies exchanging Rs 50 for one dollar.
- At the new equilibrium, the exchange rate becomes $e_1 = 70$, indicating a need to pay more rupees for a dollar, i.e., Rs 70.
  - The increase in the exchange rate signifies a Depreciation of the domestic currency (rupees) in terms of the foreign currency (dollars) as the price of foreign currency (dollar) in terms of domestic currency (rupees) has increased.

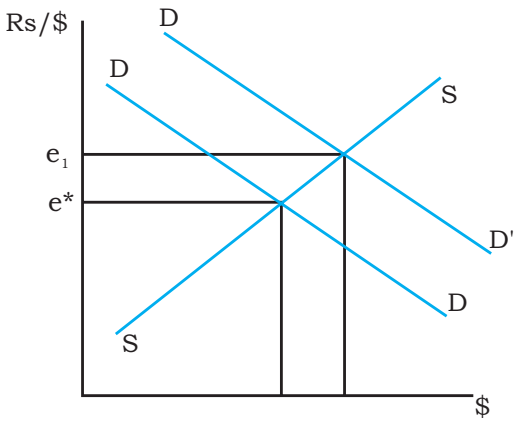

Figure 9.4: Effect of an Increase in Demand for Imports in the Foreign Exchange Market

- In a flexible exchange rate regime, when the price of domestic currency (rupees) in terms of foreign currency (dollars) increases, it is termed an **appreciation of the domestic currency** (rupees) in terms of foreign currency (dollars).
- This implies that the value of rupees relative to the dollar has risen, requiring fewer rupees in exchange for one dollar.

Speculation and Change in Exchange Rate

- If Indians believe that the value of the British pound will increase relative to the rupee, they may choose to hold pounds.
- The expectation of currency appreciation can affect exchange rates.
- For instance, if the current exchange rate is Rs. 80 to a pound, and investors believe that by the end of the month, the pound will appreciate to Rs. 85, they might buy pounds now with the expectation of making a profit later.
- In this scenario, an investor could buy 1000 pounds for Rs. 80,000, and if the exchange rate shifts as expected, they could sell the pounds for Rs. 85,000 at the end of the month, making a profit of Rs. 5,000.
- The expectation of currency appreciation increases the demand for that currency (pounds in this case), which in turn can cause the exchange rate to increase in the present.
- This rise in the exchange rate due to increased demand makes the initial beliefs self-fulfilling.

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Interest Rates and the Exchange Rate

- **An interest rate** is the amount a lender charges a borrower as a percentage of the principal amount.
- **An exchange rate** is the rate at which one currency can be exchanged for another between nations or economic zones.
- **Interest rate differential:** the difference between interest rates between countries.
  - In the short run, another factor that is important in determining exchange rate movements is the **interest rate differential**, i.e. Banks, multinational corporations, and wealthy individuals often move funds globally in search of the highest interest rates.
  - For instance, if government bonds in country A offer an 8% interest rate, while equally safe bonds in country B yield 10%, the interest rate differential is 2%.

Speculation

It involves holding foreign exchange with the expectation of making gains from the appreciation of the currency. Money in any country is considered an asset, and exchange rates can be affected by speculative activities.

Effect on Investment and Currency Demand

- Investors from country A are attracted to the higher interest rates in country B, leading them to buy country B's currency while selling their own.
- Conversely, investors in country B find investing in their own country more attractive due to the higher interest rates, reducing their demand for country A's currency.
- **Impact on Exchange Rates**
  - The increased demand for country B's currency and decreased demand for country A's currency cause the demand curve for country A's currency to shift to the left and the supply curve to shift to the right.
  - This results in a depreciation of country A's currency and an appreciation of country B's currency.
  - A rise in domestic interest rates often leads to an appreciation of the domestic currency, assuming no restrictions exist on purchasing foreign government bonds.

Income and the Exchange Rate

- Income is money that a person or entity receives in exchange for labor or products.
- The dynamics between income levels and exchange rates are explored through the lens of consumer spending, imports, and exports and how they affect the demand and supply curves for foreign exchange.
- **Impact of Domestic Income Increase**
  - An increase in income leads to heightened consumer spending.
  - A portion of this increased spending is directed towards imported goods, thereby escalating the demand for foreign exchange.
  - The heightened demand for foreign exchange prompts a shift in its demand curve to the right, resulting in a depreciation of the domestic currency.
- **Impact of Foreign Income Increase**
  - An increase in income abroad can boost domestic exports.
  - This rise in exports causes the supply curve of foreign exchange to shift outward.

Balance And Depreciation

- The net effect on the domestic currency's value, whether it depreciates or not, is contingent on the growth rate of exports relative to imports.

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- If exports are growing at a quicker pace than imports, it may counterbalance the depreciation effect.
- Generally, a country experiencing faster aggregate demand growth compared to the rest of the world tends to see its currency depreciate.
- This is attributed to the country's imports growing at a faster rate than its exports, causing a quicker shift in the demand curve for foreign currency compared to its supply curve.

Principles of PPP

The theory stipulates that barring any trade restrictions like tariffs (trade taxes) and quotas (import quantity limits), exchange rates should stabilize such that a particular product bears the same cost, whether priced in rupees in India, dollars in the US, or yen in Japan, with the only exception being transportation cost variances.

Exchange Rates In The Long Run

- The **Purchasing Power Parity (PPP)** theory is employed to forecast long-term exchange rates under a flexible exchange rate system.
- It states that in the absence of trade barriers, exchange rates will adjust to equalise the cost of a given product across different countries.
- Over an extended period, exchange rates between any two national currencies are expected to alter to mirror the disparities in the price levels existing in the two respective countries.

Fixed Exchange Rates

- In a fixed exchange rate system, the government sets the exchange rate at a specific level, contrary to allowing market forces to determine it.

The Government's Role in Adjusting Exchange Rates

- The government may alter the exchange rate to meet economic objectives.
- For instance, to boost exports by making the domestic currency cheaper for foreigners, it might increase the exchange rate from Rs 50 to Rs 70 per dollar.
- The new government-set exchange rate is denoted as e_1, where e>e (market-determined rate).

Intervention Mechanism

- At the new exchange rate e_1, the supply of dollars surpasses the demand.
- The Reserve Bank of India (RBI) steps in to buy the excess dollars with rupees in the foreign exchange market, maintaining the desired exchange rate.
- This intervention, marked as AB in **Figure 9.5**, helps absorb the excess dollar supply but leads to an accumulation of foreign exchange reserves as long as the intervention continues.
- **Consequences of Inadequate Intervention:** If the government sets an exchange rate at a level such as e_2, creating an excess demand for dollars, it would need to use its dollar reserves to meet this demand. Failure to do so could lead to the **emergence of a black market for dollars.**

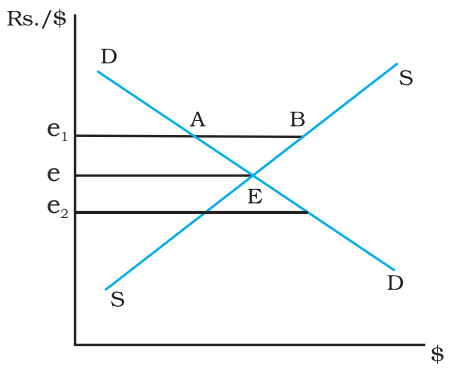

Figure 9.5: Foreign Exchange Market with Fixed Exchange Rates

Merits and Demerits of Flexible and Fixed Exchange

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Rate Systems

Merits of Fixed Exchange Rate System

- **Stability:** Provides a stable environment for international trade and investment by maintaining a constant exchange rate.
- **Predictability:** Facilitates better planning and forecasting for businesses and investors due to the known exchange rate.
- **Control of Inflation:** Helps in controlling inflation by pegging the domestic currency to a stable foreign currency or a basket of currencies.
- **Fiscal Discipline:** Imposes fiscal and monetary discipline on governments to maintain the fixed rate.
- **Prevention of Competitive Devaluation:** Avoids a race to the bottom where countries competitively devalue their currencies to gain trade advantages.

Devaluation: A government action that increases the exchange rate, making the domestic currency cheaper, is termed devaluation in a fixed exchange rate system.

Revaluation: Revaluation occurs when the government decreases the exchange rate, making the domestic currency costlier in a fixed exchange rate system.

Demerits of Fixed Exchange Rate System

- **Costly Maintenance:** Requires maintaining high levels of foreign reserves to defend the fixed rate, which can be economically unfeasible.
- **Speculative Attacks:** Prone to speculative attacks if there's doubt about the government's ability to maintain the exchange rate.
- **Loss of Monetary Policy Independence:** Limits the ability to tailor monetary policy to domestic economic conditions.
- **Misalignment and Trade Imbalances:** This can lead to misalignment of the exchange rate with economic fundamentals, causing trade imbalances.

POINTS TO PONDER

When the exchange rate of a country is devalued it helps in promoting the exports. By that logic, if the Indian rupee depreciates, Indian exports stand to benefit. Under a managed exchange rate RBI can actually devalue the currency. So according to you what stops the government and RBI from devaluing currency to help increase its exports?

Merits of Flexible Exchange Rate System

- **Flexibility:** Allows for automatic adjustment of exchange rates in response to economic changes, providing more flexibility to the government.
- **Monetary Policy Independence:** Countries have the autonomy to conduct their monetary policies as per domestic economic conditions.
- **Automatic Balance of Payments (BoP) Adjustment:** Movements in the exchange rate automatically address surpluses and deficits in the BoP, reducing the need for governmental intervention.
- **Reduced Need for Reserves:** Governments do not need to maintain large stocks of foreign exchange reserves, freeing up resources for other uses.

Demerits of Flexible Exchange Rate System

- **Uncertainty:** This can create uncertainty due to fluctuating exchange rates, which might deter international trade and investment.
- **Potential for Volatility:** Exchange rates can be highly volatile, subject to speculation and rapid short-term movements.

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- **Less Discipline:** This may lead to less fiscal and monetary discipline as governments are not obliged to uphold a fixed exchange rate.
- **Trade Shocks:** Countries are more exposed to international financial and trade shocks due to fluctuating exchange rates.

Managed Floating

- The global economy has transitioned to a managed floating exchange rate system without any formal international accord.
- This system is a hybrid of both flexible (the floating aspect) and fixed exchange rate systems (the managed aspect), hence also referred to as **"dirty floating."**
- **Central Bank Intervention**
  - Central banks play a proactive role by intervening in the foreign exchange market.
  - They engage in buying and selling foreign currencies to temper exchange rate fluctuations whenever deemed necessary.
  - Unlike a pure floating system, official reserve transactions in a managed floating system are not zero, indicating active central bank involvement.

Conclusion

The discourse on exchange rate systems reveals a blend of governmental control and market forces shaping international trade. Fixed Exchange Rates offer stability at the cost of substantial reserves, while Flexible Exchange Rates allow market-driven adjustments with potential volatility. Managed Floating serves as a middle ground, permitting central bank interventions to moderate extreme rate fluctuations. Factors like income levels, interest rates, and long-term price equalisation further influence exchange rate movements, underscoring the importance of a well-considered exchange rate policy in cherishing economic stability and robust international trade relations.

Glossary

- **An open economy:** It is a system where trade occurs between local and domestic factors and entities in other nations.
- **Current account deficit (CAD):** It occurs when a country's imports of goods, services, and investments exceed its exports.
- **Autonomous transactions:** They are transactions that occur naturally as a result of trade and investment between countries.
- **Accommodating transactions:** They are transactions that are undertaken by the government or central bank to manage the balance of payments.
- **Purchasing power parity:** It is a measure of the price of specific goods in different countries and is used to compare the absolute purchasing power of the countries' currencies.
- **Depreciation:** It is an accounting method that measures the decrease in value of an asset over time.
- **Fixed exchange:** It is system where a country's currency is tied to the value of another country's currency or a major commodity.
- **Managed floating exchange rate:** It is a system where a nation's central bank intervenes in foreign exchange markets to control the value of a currency.
- **Balance of payments (BOP):** It is the method by which countries measure all of the international monetary transactions within a certain period.
- **Devaluation:** It is a monetary policy tool that countries use to lower the value of their currency relative to another currency or standard.

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Unit-III
Indian Economic Development

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Basics of Economics

Bibliography: This chapter encompasses the summary of **Chapters 1 and 2** of Class XII (Introductory Macroeconomics) **Chapter 7** of Class XI (Indian Economic Development), **Chapters 1 and 2** of Class X (Economics) of NCERT.

Introduction

In the earlier study of macroeconomics, we analyzed the relationship between a country's total production and employment and various attributes (variables) like prices, interest rates, wages, profits etc. In this chapter, we will study different contrasting developmental issues and relevant aspects of them. Further, we will look into different sectors of the Indian economy and their changing status in India's developmental path. Lastly, we will focus on rising environmental challenges as a result of unrestricted exploitation of natural resources, highlighting the need for following environmentally sustainable practices.

In this chapter, we embark on a comprehensive exploration of these interconnected aspects, delving into the complex and evolving landscape of India's economic journey.

Development

What Development Promises – Different People, Different Goals

- Notions of development and progress vary widely among individuals and groups.
- Different people seek different outcomes that align with their aspirations and desires. These unique goals can sometimes lead to conflicting interests and priorities.
- For example, a girl may seek equal freedom and opportunities for her brother, including shared household responsibilities, while her brother may not be in favour of this.
- Similarly, industrialists may advocate for the construction of more dams to increase the electricity supply, but this could result in land submergence and disrupt the lives of displaced people, such as tribal communities.
- These affected communities may prefer smaller-scale solutions like check dams or tanks for irrigation.

Figure 10.1: Different People, Different Goals.

Figure 10.2: A demonstration meeting against raising the height of Sardar Sarovar Dam on Narmada River.

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- Two key takeaways emerge from this perspective: Firstly, people have **diverse developmental goals and objectives**, and Secondly, what may constitute development for one group may not be for another.

POINTS TO PONDER

The meaning of development differs for different people. For some, it may mean economic empowerment while for others it may be enjoying liberty and equality. As a civil service aspirant, what is your vision of a developed India?

Income and Other Goals

- A common aspiration among people is to improve their standard of living, which often translates to increased income.
- However, people seek more than just financial prosperity; their developmental objectives encompass various **non-material aspects** that significantly influence their quality of life.
- In addition to pursuing higher income, individuals **strive for equality, freedom, security, and mutual respect**.
- For example, while considering a job offer, individuals not only take into account pay scale but also various factors like job security, working atmosphere, facilities for family etc.
- Hence, It would be wrong to ignore the significance of immeasurable factors while deciding the goals.
- Further, in the context of development, **people look at a mix of goals.** For instance, women's involvement in paid work fulfills different goals. It not only elevates their personal **status and dignity** but also a society that respects women is more likely to promote gender equality, encouraging women to engage in various professions. Further, a secure environment provides opportunities for women in different fields or entrepreneurship.

National Development

- ➢ The diversity of goals and perspectives among individuals when considering national development highlights the complexity of this issue.
- ➢ People have different visions of what a country should prioritize for its development, and these viewpoints may not always align.
- ➢ It is essential to engage in discussions and consider various ideas to arrive at a **balanced approach.**

In essence, developmental aspirations extend beyond monetary gains to encompass broader aspects that contribute to an individual's overall well-being and the health of society.

National Development

How To Compare Different Countries Or States?

- Countries are categorized as either "developed" or "developing" based primarily on their per capita income.
- Per capita income refers to the **average income of a country's residents** and is calculated by **dividing the total income of the country by its population**.
- The World Bank employs per capita income as a crucial criterion for classifying countries in its **World Development Reports**.
- In this categorization, countries with a per capita income of **US$ 49,300 or more** annually in 2019 are labelled as "**high-income**" or "**rich" countries**.
- Conversely, those with a per capita income of **US$ 2,500** or less fall into the category of "**low-income" countries**.

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Average Income

While averages are useful for comparison, they also hide disparities

For example , let us consider two countries, A and B. For the sake of simplicity , we have assumed that they have only five citizen each based on data given in following table , calculate the average income for both the countries.

Comparison of Two Countries

Country	Monthly income of citizens (in Rupees)					
	I	II	III	IV	V	Average
Country A	9500	10500	9800	10000	10200	
Country B	500	500	500	500	48000	

Will you be equally happy to live in both these countries ? Are both equally developed? Perhaps some of us may like to live in country B if we are assured of being its 5th citizen but if it is a lottery that decides our citizenship number then perhaps most of us will prefer to live in country A. Even though both the countries have identical average income, country A is preferred because it has more equitable distribution. In this country, people are neither very rich nor extremely poor. On the other hand most citizens in country B are poor and one person is extremely rich. Hence, while average income is useful for comparison, it does not tell us how this income is distributed among people.

Figure 10.3: Average incomes of two countries.

- India, with a per capita income of **US$ 6,700 per annum** in 2019, falls into the classification of "**low middle-income**" countries.
- Notably, the term "**developed countries**" is typically reserved for the wealthier nations, excluding some Middle Eastern countries and a few smaller nations, which belong to the category of "high income."

Income and Other Criteria

- Individual aspirations and goals go beyond just seeking better income. People also value security, respect for others, equal treatment, freedom, and more.
- Similarly, when evaluating the development of a nation or region, factors beyond average income come into play.
- For example, look into the per capita income of Haryana, Kerala, and Bihar given in Figure 10.4.
- Although these figures represent Per Capita Net State Domestic Product at Current Prices for 2018–19, they can be understood as the per capita income of the state.
- Haryana has the highest per capita income, with an average of Rs 2,36,147 per person, while Bihar has the lowest, with an average of only around Rs 40,982 per person.

State	Per Capita Income for 2018-19 (in Rs)
Haryana	2,36,147
Kerala	2,04,105
Bihar	40,982

Figure 10.4: Per capita income of select states.

- If we were to use per capita income alone as a measure of development, Haryana would be considered the most developed state, and Bihar the least developed, among the three. But this is not true, as we have to use other aspects in decisive criteria of development of state.
- Table below highlights further such contrasts about development of state.

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Some Comparative Data on Haryana, Kerala and Bihar

- Figure 10.5 reveals a stark contrast between states like Kerala and Haryana.
- In Kerala, out of 1000 children born, 7 die before completing one year of age.
- In contrast, Haryana experiences a much higher infant mortality rate, with 30 children out of 1000 not surviving their first year, nearly three times higher than Kerala's rate.
- This data is from the year 2018, but only 70 years after India's independence. The issue goes beyond infant mortality.
- The figure also shows that approximately half of the children aged 14-15 in Bihar do not continue their education beyond Class 8.
- This means that in a Bihar classroom, nearly half of your elementary school friends would be missing because they are unable to attend school beyond this level.
- These disparities highlight the significant variations in living conditions and access to basic necessities across different regions of India.

State	Infant Mortality Rate per 1,000 live births (2018)	Literacy Rate % 2017-18	Net Attendance Ratio (per 100 persons) secondary stage (age 14 and 15 years) 2017-18
Haryana	30	82	61
Kerala	7	94	83
Bihar	32	62	43

Explanation of some of the terms used in this table:

Infant Mortality Rate (or IMR) indicates the number of children that die before the age of one year as a proportion of 1000 live children born in that particular year.

Literacy Rate measures the proportion of literate population in the 7-and-above age group.

Net Attendance Ratio is the total number of children of age group 14 and 15 years attending school as a percentage of total number of children in the same age group.

Figure. 10.5: Comparative data on Haryana, Kerala and Bihar.

Public Facilities

- The average income of a person in Haryana may be higher than that in Kerala, but it doesn't necessarily mean a higher quality of life.
- Money alone cannot purchase essential services like a **pollution-free environment** or guarantee access to unadulterated medicines.
- Many critical aspects of life are best provided collectively rather than individually, such as security for a neighbourhood versus individual households hiring security staff.
- Similarly, access to education often depends on **collective efforts**, as not every family can afford private schooling.
- The provision of **essential services**, like healthcare and education, plays a crucial role in determining the overall well-being of citizens.
- For example, Kerala's low infant mortality rate is attributed to its robust healthcare and educational facilities.
- Similarly, states with well-functioning Public Distribution Systems (PDS) tend to have better health and nutritional outcomes for their residents.

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Category	Male	Female
Literacy rate for rural population	76%	54%
Literacy rate for rural children in age group 10-14 years	90%	87%
Percentage of rural children aged 10-14 attending school	85%	82%

Figure 10.6: Educational achievement of rural population of Uttar Pradesh.

- At international level also, merely good numbers in GDP does not provide the assurance of development. For instance, the comparison of India with its neighboring countries like Sri Lanka, Nepal, and Bangladesh reveals that despite India's larger size and economy, it **lags behind in several human development indicators**. (Refer Figure 10.7)
- Though various improvements have been proposed for calculating the Human Development Index (HDI), it should be noted that the prefix "**Human**" in HDI emphasizes the significance of people's health and overall welfare and the essence of development lies in the **well-being** and **quality of life** of a country's citizens.
- This prompts us to consider whether there are additional aspects that should be taken into account when measuring human development.

Human Development Report

- Recognizing the limitations of using **income** as the sole measure of development, **health and education** indicators have gained prominence.
- These indicators, such as those used in comparing Kerala and Haryana, provide a more comprehensive understanding of development.
- The **Human Development Report**, published **by UNDP**, compares countries based on educational levels, health status, and per capita income.

Country	Gross National Income (GNI) per capita (2011 PPP $)	Life Expectancy at birth	Mean Years of Schooling of People aged 25 and above	HDI Rank in the world (2018)
Sri Lanka	12,707	77	10.6	73
India	6,681	69.7	6.5	130
Myanmar	4,961	67.1	5.0	148
Pakistan	5,005	67.3	5.2	154
Nepal	3,457	70.8	5.0	143
Bangladesh	4,976	72.6	6.2	134

NOTES:

- HDI stands for Human Development Index. HDI ranks in above table are out of 189 countries in all.
- Life Expectancy at birth denotes, as the name suggests, average expected length of life of a person at the time of birth.
- Per Capita Income is calculated in dollars for all countries so that it can be compared. It is also done in a way so that every dollar would buy the same amount of goods and services in any country.

Figure. 10.7: Data regarding India and its neighbours for 2019.

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Sustainability of Development

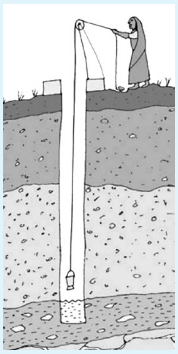
- In recent decades, concerns have arisen about the **sustainability of current development practices**. Scientists have cautioned that the relentless pursuit of development, particularly when it involves overusing renewable resources like groundwater or depleting non-renewable resources, is not viable in the long term.

> "We have not inherited the world from our forefathers — we have borrowed it from our children."- Mr. Lester Brown.

- **Environmental degradation** transcends national and regional boundaries, highlighting the interconnectedness of our future.
- Sustainability has become a key focus area for scientists, economists, philosophers, and social scientists.
- The ongoing debate about development persists, prompting individuals and societies to consider their goals and the path they want to take.

Groundwater in India

- Recent evidence highlights a concerning trend of **groundwater overuse** in various parts of India.
- Approximately **300 districts** have experienced a **decline in water levels** exceeding 4 meters over the past two decades.
- Presently, nearly **one-third of the country is overexploiting its groundwater resources**.
- If these practices persist, it is projected that within the next 25 years, **60 percent of the country will face a similar situation.**
- Groundwater depletion is particularly prevalent in agriculturally prosperous regions like **Punjab** and **Western Uttar Pradesh**, **hard rock plateau areas** in central and southern India, certain coastal regions, and rapidly expanding urban areas.



Exhaustion of Natural Resources

Region/Country	Reserves (2017) (Thousand Million Barrels)	Number of Years Reserves will last
Middle East	808	70
United States of America	50	10.5
World	1697	50.2

Figure. 10.8: Exhaustion of Natural Resources.

The figure 10.8 provides an estimation of crude oil reserves. More significantly, it indicates the remaining years these crude oil reserves will be sustained if the current extraction rate continues.

- Globally, these reserves are projected to last only an additional 50 years.
- However, individual countries confront unique circumstances.
- For example, India relies on oil imports due to insufficient domestic reserves, which could pose a burden in the event of rising oil prices.
- Conversely, countries like the USA, with limited reserves, seek to ensure their oil supply through military or economic means.
- Thus, the question of sustainability of development raises many fundamentally new issues about the nature and process of development.

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Sectors of Indian Economy

Primary Sector

- Many activities in the economy rely on the **direct utilization** of natural resources. The activities that involve the exploitation of natural resources are part of the primary sector, which serves as the foundation for subsequent product manufacturing.
- For instance, cotton cultivation depends largely on natural factors like rainfall and climate, resulting in the production of the natural product, cotton.
- Similarly, dairy farming relies on biological processes and the availability of fodder to produce milk, another natural product.
- Additionally, minerals and ores fall into the category of natural products.

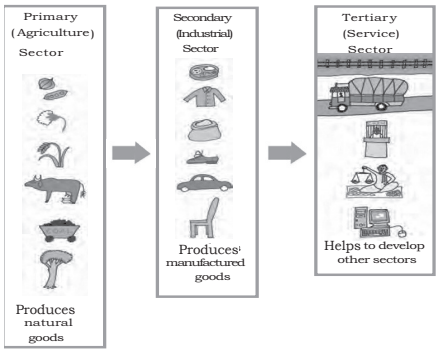

Figure. 10.9: Sectors of Economic Activities

- Given that agriculture, dairy farming, fishing, and forestry are the **primary sources of natural products**, this sector is also referred to as the **agriculture and related sector**.

Secondary Sector

- The secondary sector encompasses activities that involve **transforming natural products into different forms** through manufacturing processes typically associated with industrial activities. It follows the primary sector in the production process.
- In this sector, products are not naturally occurring but are instead **created through manufacturing processes**, which can take place in a factory, workshop, or even at home.
- For instance, cotton fibers from plants are used to produce yarn and weave cloth. Sugarcane, as a raw material, is processed to make sugar or gur. Earth can be converted into bricks, which are then used in constructing houses and buildings.

Figure. 10.13: Gur Making in Haryana.

- This sector is often referred to as the **industrial sector** because it became closely associated with various types of industries over time.

Tertiary Sector

- The tertiary sector activities primarily support and facilitate the development of the primary and secondary sectors.
- Although they **do not directly produce tangible goods**, they play a crucial role in **aiding** the production process.
- For instance, products manufactured in the primary or secondary sectors often require **transportation** via trucks or trains and are subsequently sold in wholesale and retail shops.
- Occasionally, storage in warehouses (godowns) becomes necessary.

POINTS TO PONDER

The primary sector in India employs the highest number of people yet has a very smaller share in the GDP contribution than the tertiary sector. Can you think of the reasons why this is so? Also, find out why the tertiary sector grew rapidly in India than the secondary.

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- Additionally, **communication services** such as talking over the telephone or sending letters, banking services like borrowing money, and trade activities are essential elements of this sector.
- As these activities provide services rather than physical goods, the tertiary sector is also known as the **service sector**.
- The service sector encompasses not only activities that directly support the production of goods but also **essential services** unrelated to physical goods production.
- This category **includes professions** like teachers and doctors, as well as providers of personal services such as washermen, barbers, cobblers, lawyers, and individuals engaged in administrative and accounting roles.
- Moreover, the service sector has evolved to include **modern services** like internet cafes, ATM booths, call centers, software companies, and other information technology-based services, which have gained significant importance in recent times.

Comparing The Three Sectors

The primary, secondary, and tertiary sectors collectively generate a vast array of goods and services. These sectors also employ a significant workforce to produce these goods and services. To gain a comprehensive understanding of an economy, it is crucial to assess the quantity of goods and services produced and the number of people employed within each sector.

How to count the various goods and services and the total production in each sector?

- To determine the total production in each sector and ultimately calculate the **Gross Domestic Product (GDP)** of a country, economists use the **values of goods and services produced** rather than adding up the actual quantities, which would be an enormous and impractical task.
- For example, if 10,000 kgs of wheat are sold at Rs 20 per kg, the value of the wheat would be Rs 2,00,000. Similarly, the value of 5000 coconuts at Rs 15 per coconut would be Rs 75,000.
- This approach is applied to calculate the values of goods and services in the primary, secondary, and tertiary sectors, and these values are then added up.
- **Intermediate goods**, such as raw materials like wheat, are not counted individually because their **value is already included** in the value of the final goods they contribute to, counting them separately would result in double-counting.
- Hence, it is essential to consider **only final goods and services** in the calculation. Final goods are those that reach consumers and are **ready for consumption**.
- The total value of final goods and services produced in each sector during a specific year constitutes the sector's **total production for that year**.
- Summing up the production values of the three sectors gives the **Gross Domestic Product (GDP)** of a country.
- GDP is a crucial indicator of an economy's size and is measured by a **central government ministry**, often in collaboration with various government departments from all states and union territories.
- These agencies collect data on the total **volume and prices of goods and services** and use this information to estimate the GDP.

Historical Change in Sectors

- In the histories of many developed countries, it's been observed that the **primary sector** was initially the most significant economic activity.
- As agriculture evolved and became more productive, it generated surplus food, allowing people to engage in various other activities.

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- This led to the growth of craftspersons, traders, and increased buying and selling activities. Additionally, there was a **rise in professions** such as transportation, administration, and the military.
- However, during this phase, most goods produced were natural products from the primary sector, and a substantial portion of the population worked in this sector.
- For over a century, new manufacturing methods led to the **emergence and expansion of factories**.
- Many individuals who had previously worked in agriculture transitioned to factory jobs, often due to historical factors.
- People began **consuming more factory-produced goods** at affordable prices, leading to the secondary sector becoming the dominant sector in terms of both production and employment.
- In the past century, another transformation has taken place in developed countries, where there has been a shift from the **secondary to the tertiary sector**.
- The service sector has become the most prominent contributor to total production, and most employed individuals work in this sector.
- This shift towards a service-oriented economy is a common trend in developed nations.

Status of Primary, Secondary And Tertiary Sectors In India

This data is presented for two distinct years, 1973-74 and 2013-14. These specific years have been chosen for analysis because they offer comparable and authentic data. Figure 10.10 allows us to observe the growth in total production over forty years.

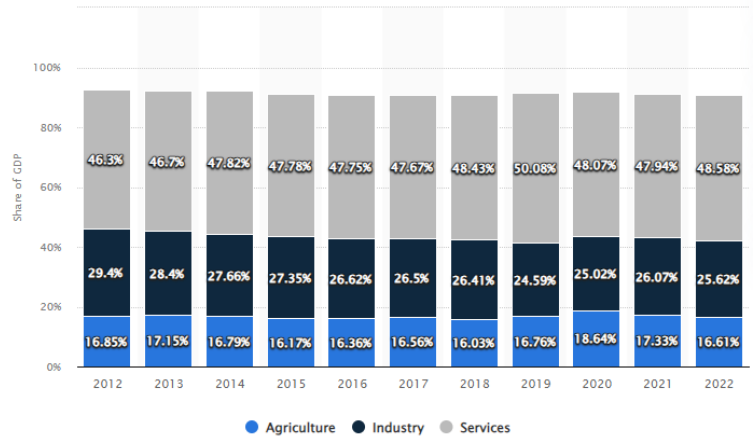

Figure. 10.10: GDP by Primary, Secondary and Tertiary Sectors.

Where are most of the people employed?

- The figure above displays the percentage share of the three sectors in India's GDP over a period of forty years, from 1973-74 to 2013-14. It illustrates how the importance of these sectors has evolved during this time. While the share of the sectors in GDP has changed, a similar shift has not occurred in employment.

Contrasts Between Employment and GDP

- Despite changes in the GDP composition, the primary sector, primarily agriculture, remains the **largest employer** in India. This shift between GDP composition and employment can be attributed to the fact that **not enough jobs were created in the secondary and tertiary sectors**.

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- Industrial and service sector outputs grew significantly, but employment in these sectors did not grow proportionally.
- For instance, industrial production increased more than nine times, while employment in industry only tripled.
- Similarly, in the service sector, production expanded fourteen times, but employment increased by around five times.
- As a result, **more than half of the country's workforce remains engaged mainly in agriculture**, contributing only a fraction of the GDP.
- In contrast, the secondary and tertiary sectors, which employ fewer people, generate the **majority of the nation's GDP**.

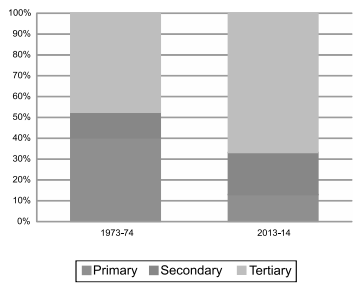

Figure. 10.11: Share of Sectors in GDP (%).

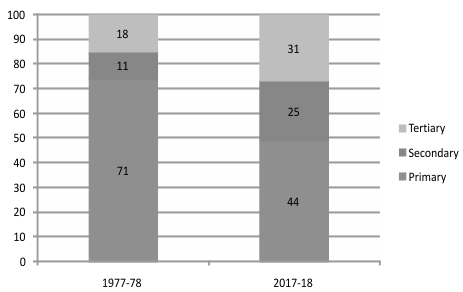

Figure. 10.12: Share of Sectors in Employment (%).

Disguised Unemployment in Agriculture

- This situation highlights the issue of **underemployment** in the agriculture sector. Many individuals **work less than their full potential** because there are more people involved in agriculture than necessary.
- For example, consider a small farmer, whose family relies on two hectares of rain-dependent land to cultivate crops. All five family members work on the plot, even though their labor efforts could be better utilized elsewhere.
- This situation is characterized as **disguised unemployment** because people **appear to be working but are not fully employed**.
- To address this underemployment, some family members might seek employment in other sectors, such as working in a factory or on a landlord's land. This transition increases the family's income without affecting agricultural production.
- This underemployment issue is **not limited to agriculture** and can also occur in other sectors, such as casual workers in urban service sectors who struggle to find daily employment or street vendors who earn very little due to limited opportunities.

How to Create More Employment?

The issue of underemployment in agriculture persists in India, and there are also people who are completely unemployed.

Several strategies *can be employed to increase employment opportunities*:

- **Irrigation and Agricultural Infrastructure:** Investing in irrigation facilities, such as constructing a dam and canals, can help farmers increase their agricultural output. This could generate additional employment within the agricultural sector itself.
- **Transportation and Storage Facilities:** Improving rural roads, transportation, and storage infrastructure can aid farmers in reaching markets and selling their produce. This can create employment not only for farmers but also for those involved in transportation and trade.

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- **Access to Credit:** Providing affordable agricultural credit to farmers can help them acquire necessary inputs like seeds, fertilizers, equipment, and pump sets. Access to credit can enhance agricultural productivity and employment.
- **Promoting Local Industries:** Identifying, promoting, and establishing industries and services in semi-rural areas can create jobs. For example, setting up dal mills, cold storage units, honey collection centers, or food processing industries in proximity to agricultural regions can provide employment opportunities.
- **Investment in Education and Healthcare:** Expanding educational institutions and healthcare facilities can generate employment in the education and health sectors. For instance, recruiting more teachers, healthcare professionals, and support staff can create jobs.

> **Do You Know?**
>
> In India about 60 percent of the population belongs to the age group 5-29 years. Out of this, only about 51 per cent are attending educational institutions.

- **Tourism Development:** Many regions have untapped tourism potential that, with proper planning and support, can employ a significant number of people.
- **Regional Craft Industry:** Supporting and revitalizing regional craft industries can provide employment opportunities, especially in areas with unique traditional crafts.
- **Short-term Measures:** To address immediate employment needs, India implemented the **Mahatma Gandhi National Rural Employment Guarantee Act, 2005 (MGNREGA 2005).** This act guarantees 100 days of employment in a year for rural residents who are willing and in need of work. It focuses on labor-intensive projects that can benefit land and agricultural production.

> **Additional Information**
>
> A study conducted by the erstwhile Planning Commission (now known as NITI Aayog) estimates that if tourism as a sector is improved, every year we can give additional employment to more than 35 lakh people.

Therefore, a **multi-pronged approach** is required to increase employment opportunities in India, addressing both short-term and long-term needs.

Rising Importance of the Tertiary Sector in Production

- Over the forty years between 1973-74 and 2013-14, the most significant increase has occurred in the tertiary sector.
- Consequently, by the year 2013-14, the tertiary sector has become the **largest producing sector** in the country.
- The service sector in India employs a **wide range of jobs**, from highly skilled and educated professionals to individuals engaged in small-scale services such as small shopkeepers and repair persons.

*Several **factors** contribute to the rising importance of the tertiary sector in India:*

- **Basic Services:** In any country, there is a need for fundamental services like healthcare, education, postal and telegraph services, law enforcement, and more. Developing nations often **rely on the government** to provide these essential services.
- **Development of Agriculture and Industry:** As agriculture and industry develop, there is an increased demand for services such as transportation, trade, and storage. The growth of the primary and secondary sectors drives the demand for these services.
- **Rising Income Levels:** With increasing income levels, people start seeking additional services like dining out, tourism, shopping, private healthcare, and private schools. This trend is especially noticeable in urban areas and major cities.

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- **Information and Communication Technology:** In recent years, services based on information and communication technology have become essential and have experienced rapid growth.

However, it's important to note that not all segments of the service sector are growing equally. While some segments are thriving, others struggle to provide a livelihood, often due to limited alternative employment opportunities. Hence, only a part of this sector is growing in importance.

Divisions of Sectors as Organised and Unorganised

Organised Sector	Unorganised Sector
➢ The organized sector covers those enterprises or workplaces where **employment terms are regular**, and workers have **assured jobs**. ➢ These entities are **registered with the government** and must adhere to various government rules and regulations, such as the Factories Act, Minimum Wages Act, Payment of Gratuity Act, and Shops and Establishments Act. ➢ It is termed "**organized**" because it follows formal processes and procedures. ➢ Some individuals in this sector may be self-employed, but they still need to register with the government and comply with the regulations. ➢ Workers in the organized sector enjoy **employment security**. They are expected to work fixed hours, and if they work beyond those hours, they are entitled to overtime pay from their employers. They receive several other benefits, including paid leave, holiday pay, provident funds, gratuity, and medical benefits. ➢ Factory managers are obligated by law to provide facilities like **safe working environments** and access to drinking water. Upon retirement, these workers receive pensions.	➢ On the other hand, individuals in the unorganized sector, characterized by **small, scattered units** that are often **outside government control**. ➢ Rules and regulations exist but are not consistently followed. ➢ Jobs in this sector tend to be **low-paying and irregular**. ➢ There are no provisions for overtime, paid leave, holidays, or sick leave. ➢ **Job security is absent**, as workers can be terminated without cause, and during slow seasons, some workers may be asked to leave. ➢ Employment in the unorganized sector can be unpredictable and is often subject to the employer's discretion. ➢ This sector includes self-employed individuals engaged in small-scale activities like street vending or repair work, as well as farmers who hire laborers as needed.

How to Protect Workers in the Unorganised Sector?

- The organized sector is often the **most preferred for employment**; however, the job opportunities in this sector have been growing slowly.
- It is also not uncommon to find organized sector enterprises **operating informally** within the unorganized sector. They do this to avoid taxes and bypass labor protection laws.
- Consequently, many workers are compelled to seek

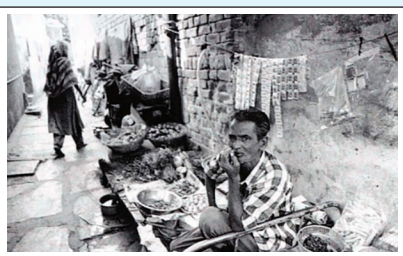

Figure. 10.14: When factories close down, many once regular workers are found selling goods or pushing a cart or doing some other odd job

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employment in the unorganized sector, where wages are very low. They are frequently exploited and denied fair wages. These jobs lack security and other benefits.

- Since the 1990s, a significant number of organized sector workers have lost their jobs, forcing them to take up **low-paying jobs** in the unorganized sector.
- Therefore, there is a dual need for both **increasing employment opportunities** and providing **protection and support** for unorganized sector workers.
- The unorganized sector in **rural regions** includes landless agricultural laborers, small and marginal farmers, sharecroppers, and artisans such as weavers, blacksmiths, carpenters, and goldsmiths.
- About **80 percent of rural households** in India fall into the small and marginal farmer category. These farmers need support in the form of timely access to seeds, agricultural inputs, credit, storage facilities, and marketing outlets.In **urban areas**, the unorganized sector primarily comprises workers in small-scale industries, casual laborers in construction, trade, and transportation, as well as street vendors, head load workers, garment makers, and rag pickers.
- **Small-scale industries** also require government support for procuring raw materials and marketing their products.
- A significant portion of unorganized sector workers comes from scheduled castes, tribes, and backward communities, who often face **social discrimination** on top of irregular, low-paid work.

Therefore, providing protection and support for unorganized sector workers is vital for both **economic and social development**.

Sectors in Terms of Ownership: Public and Private Sectors

Public Sector	➢ In the public sector, the **government owns most of the assets** and provides all the services. ➢ The primary motive of the public sector is not profit generation but **providing essential services** to the public. ➢ Governments raise funds through taxes and other means to cover the expenses of these services. ➢ Examples of public sector services include railways and the post office.
Private Sector	➢ The private sector comprises **assets and services owned and operated by private individuals or companies**. ➢ Activities in the private sector are primarily **profit-driven**, and individuals or companies charge fees for their services. ➢ Companies like Tata Iron and Steel Company Limited (TISCO) and Reliance Industries Limited (RIL) fall into the private sector category.

Governments play a major in the growth of economic activities and as a facilitator and regulators, spend on a wide range of activities for various **reasons**:

- **Provision of Public Goods:** Some services and facilities, such as roads, bridges, railways, and electricity generation, are essential for society but require significant investment. The governments take on the responsibility of **funding** and ensuring these facilities are accessible to everyone.
- **Supporting Industries:** In some cases, government intervention is needed to support industries. For instance, providing electricity at the cost of generation helps reduce production costs for many businesses, especially small-scale units. In such cases, the government often **subsidizes** part of the cost.
- **Agricultural Support:** Governments may purchase agricultural products like wheat and rice from farmers at **fair prices** to stabilize prices and ensure a reasonable income for farmers. They then sell these products at lower rates through ration shops, supporting both farmers and consumers.

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- **Social Services:** The government has a responsibility to provide **essential services** like healthcare and education to all citizens. This includes running schools and ensuring quality education, addressing malnutrition, infant mortality rates, and providing safe drinking water, housing for the poor, and food security.Hence, the private and public, both the sectors play vital roles in an economy, and government intervention is essential to balance their contributions and ensure equitable access to necessary services.

Do You Know?

Nearly half of India's children are malnourished and a quarter of them are critically ill.

Environment and Sustainable Development

Environment – Definition and Extent

- The environment is defined as the entire planetary inheritance and the totality of all available resources.
- It comprises both biotic (living) and abiotic (non-living) factors that interact with one another. **Biotic elements** include animals, plants, forests, and fisheries, while **abiotic elements** encompass air, water, land, rocks, and sunlight.
- Understanding the environment involves examining the interplay between these biotic and abiotic components.

Figure. 10.15: Water bodies: small, snow-fed Himalayan streams are the few fresh-water sources that remain unpolluted.

Functions of the Environment

The environment serves four crucial functions:

- **Resource Supply:** It provides both renewable (e.g., forests, ocean fisheries) and non-renewable (e.g., fossil fuels) resources for human use.
- **Waste Assimilation:** The environment absorbs and processes waste generated by human activities.
- **Life Sustenance:** It supports life by offering genetic and biodiversity.
- **Aesthetic Services:** The environment contributes to aesthetic qualities such as scenic beauty.

Global Warming

- **Global warming** is the gradual rise in Earth's lower atmospheric temperature due to increased greenhouse gasses, primarily caused by human activities like burning fossil fuels and deforestation since the **Industrial Revolution**.
- This rise in temperature is attributed to elevated levels of carbon dioxide, methane, and other heat-absorbing gases in the atmosphere, which have surged by 31% and 149% respectively since 1750.
- Over the past century, global temperatures have increased by 1.1°F (0.6°C), sea levels have risen, and there are long-term consequences such as polar ice melting, coastal flooding, disrupted water supplies, species extinction, more frequent tropical storms, and increased tropical diseases.
- Contributors to global warming include the combustion of coal and petroleum products, deforestation, methane release from animal waste, and expanded cattle production, which leads to deforestation, methane emissions, and increased fossil fuel use.
- In 1997, the **UN Conference on Climate Change in Kyoto, Japan**, produced an international agreement that called for **greenhouse gas emission reductions** by industrialized nations to combat global warming.

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Environmental Challenges: A Shift in Supply-Demand Dynamics

- In the early stages of civilization, and before the substantial population growth and industrialization, the demand for environmental resources and services was much lower than their natural supply.
- Pollution levels were within the environment's capacity to absorb, and the rate of resource extraction did not exceed the rate of resource regeneration.
- Consequently, **environmental issues** were not a significant concern during those times.
- However, with the explosive growth of the **global population** and the **onset of the Industrial Revolution**, the situation changed dramatically.
- The increasing population **required more resources** for both production and consumption, surpassing the rate at which these resources could regenerate.
- This led to immense pressure on the environment's capacity to absorb pollutants and waste.
- Essentially, there has been a **shift in the supply-demand relationship** for environmental quality.

Figure. 10.16: Damodar Valley is one of India's most industrialised regions. Pollutants from the heavy industries along the banks of the Damodar river are converting it into an ecological disaster

- We now face a situation where the demand for environmental resources and services has escalated, but their **supply is limited due to overuse and misuse**.
- This has resulted in critical environmental problems related to waste generation and pollution that are prominent in the current era.

Emerging Environmental Crisis

- Environmental functions continue smoothly as long as they stay within the **environment's carrying capacity**. This means resources should be used at a rate sustainable for their regeneration, and waste generation should not exceed the environment's ability to absorb it.
- However, the world is facing an **environmental crisis** due to factors like increasing population, resource depletion, and excessive pollution.
- Many resources are disappearing, and pollution is widespread, impacting health and requiring higher healthcare spending.
- Additionally, global issues like **climate change and ozone depletion** demand significant government investments.
- Hence, the costs of negative environmental impacts are substantial, making sustainable practices critical.

POINTS TO PONDER

There is Mr A who is poor and unemployed. He requires the government to set up an industry and provide him jobs. While Mr B is a tribal forest dweller surviving on the forest resources. He wants the government to protect and preserve forest and not let the setting up of industry lead to deforestation. For both A and B, it's a matter of life and death. Who do you think is right? Whom should the government listen to? Should it save lives by providing employment through development or should it ensure a safe environment?

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Ozone Depletion

- Ozone depletion refers to the **reduction of ozone in the stratosphere**, primarily caused by chlorine and bromine compounds, such as **chlorofluorocarbons (CFCs) and halons**.
- These compounds are used in air conditioners, refrigerators, aerosol propellants, and fire extinguishers.
- Ozone depletion leads to **increased ultraviolet (UV) radiation** reaching Earth, causing harm to living organisms, including human skin cancer, reduced phytoplankton production, and effects on aquatic and terrestrial ecosystems.
- From 1979 to 1990, **approximately 5% of the ozone layer was lost**, sparking global concern.
- In response, the **Montreal Protocol** was adopted, banning the use of ozone-depleting substances like CFCs and **halons**.

State of India's Environment

- India is blessed with abundant natural resources, including fertile soil, numerous rivers, lush forests, mineral deposits, and vast coastlines along the Indian Ocean.
- The **Deccan Plateau's black soil** is well-suited for cotton cultivation, leading to a concentration of textile industries in the region. The **Indo-Gangetic plains** are highly fertile and densely populated.
- India's **forests** provide vital green cover for the majority of its population and natural habitats for wildlife.
- The country also possesses significant reserves of iron ore, coal, natural gas, and various **minerals**.

Figure. 10.17: Deforestation leads to land degradation, biodiversity loss and air pollution.

- However, India's development activities have put immense pressure on its finite natural resources, leading to **environmental impacts and threats to human health.**
- There is a dual challenge, **poverty-induced environmental degradation** and the threat of **pollution** resulting from affluence and rapid industrial growth.
- Major environmental concerns in India include air pollution, water contamination, soil erosion, deforestation, and wildlife endangerment.

In this respect, ***key priority issues*** *identified are:*

- **Land Degradation:** Various forms of land degradation due to unstable use and improper management practices.
- **Biodiversity Loss:** The loss of biodiversity, which is vital for ecological balance.
- **Air Pollution:** Particularly vehicular pollution in urban areas.
- **Freshwater Management:** Efficient management of freshwater resources.

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- **Solid Waste Management:** Proper management of solid waste to mitigate pollution.

Addressing these environmental challenges is essential for India's sustainable development and the well-being of its citizens.

Chipko or Appiko — What's in a Name?

- The **Appiko Movement**, inspired by the Chipko Movement, was initiated in **Karnataka, India,** in 1983 to protect the forests of the region. It got its name from the word **'Appiko,' which means to hug**.
- When the felling of trees began in the **Salkani forest in Sirsi district,** hundreds of men, women, and children embraced the trees, forcing the woodcutters to halt.
- They maintained a vigil in the forest for six weeks until forest officials assured them that trees would be cut scientifically and in accordance with the district's working plan. This movement gained momentum as it spread to neighboring districts.
- It was a response to the indiscriminate felling of trees for fuelwood and industrial use, which had resulted in environmental problems, including **soil erosion, loss of biodiversity, and disrupted water sources.**
- Appiko volunteers advocated for **responsible forest management**, including consulting local communities when marking trees for felling and protecting trees near water sources and on steep slopes.

Figure. 10.18: People hugging the trees during the movement.

- The movement raised important questions about the **allocation of forestlands to industries** for raw materials, highlighting the **need to balance industrial development with environmental conservation** and the **well-being of local communities**.
- In essence, the Appiko Movement sought to ensure that the **exploitation of forest resources was done sustainably** and in a way that considered the broader ecological and social impacts.
- It underscores the importance of **responsible resource management** and **community involvement** in environmental protection.

Factors responsible for Land Degradation:

Land degradation in India is a complex issue driven by various factors, including:

- **Deforestation:** Loss of vegetation due to the cutting down of trees and forests.
- **Unsustainable Fuelwood and Fodder Extraction:** Overharvesting of fuelwood and fodder without allowing for natural regeneration.
- **Shifting Cultivation:** A practice where agricultural plots are frequently shifted, leading to soil exhaustion.
- **Encroachment into Forest Lands:** Unauthorized occupation and use of forested areas.
- **Forest Fires and Overgrazing:** Both natural and human-induced factors that damage vegetation and soil.
- **Lack of Soil Conservation Measures:** Inadequate steps to prevent soil erosion.
- **Improper Crop Rotation:** A farming practice that doesn't optimize soil health.

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- **Indiscriminate Use of Agro-Chemicals:** Including fertilizers and pesticides, which can harm soil quality.
- **Improper Irrigation Management:** Poor planning and management of irrigation systems.
- **Excessive Groundwater Extraction:** Going beyond the natural recharge capacity of aquifers.
- **Open Access Resource:** Land available for unrestricted use by the public.
- **Poverty of Agriculture-Dependent People:** Economic pressures that lead to unsustainable land use practices.

India faces significant challenges due to its high population density and the competition for land among various uses, including agriculture, forestry, human settlements, and industry. The limited per capita forest land (0.06 hectare) exacerbates deforestation, resulting in excess forest felling (15 million cubic meter). Soil erosion rates are alarmingly high (5.3 billion tonnes per year), causing the loss of essential nutrients like nitrogen, phosphorus, and potassium, which negatively impacts agriculture.

Pollution Control Boards

In 1974, the Indian government established the **Central Pollution Control Board (CPCB)** to address significant environmental concerns, primarily water and air pollution. Subsequently, **state-level pollution control boards** were set up to tackle environmental issues at the regional level. These boards play crucial roles in monitoring, regulating, and mitigating pollution across the country.

*Their **key functions** include*:

- **Data Collection and Dissemination:** Collecting and disseminating information related to water, air, and land pollution.
- **Setting Standards:** Establishing pollution standards for sewage, trade effluent, and emissions to ensure compliance.
- **Technical Assistance:** Providing technical support to governments to promote clean water sources and control water pollution and air pollution.
- **Research and Investigation:** Conducting or sponsoring research and investigations related to water and air pollution, focusing on prevention and control.
- **Awareness Programs:** Organizing mass awareness programs through mass media to educate the public about pollution prevention.
- **Guidelines and Manuals:** Developing manuals, codes, and guidelines for sewage and trade effluent treatment and disposal.
- **Air Quality Assessment:** Assessing air quality by regulating industrial emissions and providing data for industrial planning and urban development.
- **Inspections:** Periodically inspecting industries to assess the effectiveness of their pollution control measures.
- **Data Monitoring:** Collecting and maintaining technical and statistical data on water pollution, monitoring the quality of water in 125 rivers (including the tributaries), lakes, wells, and ponds.

India's Air Pollution Challenge and the Call for Sustainable Development

- **Air pollution** is a pervasive issue in India, primarily **concentrated in urban areas** where vehicular emissions are a significant contributor.
- The **exponential growth in the number of motor vehicles**, from 3 lakh in 1951 to 30 crores in 2019, has exacerbated this problem.
- Personal transport vehicles, including two-wheelers and cars, account for around 85% of registered vehicles, contributing significantly to air pollution.
- India's **rapid industrialization** has led to unplanned urbanization, pollution, and the risk of accidents.

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- The Central Pollution Control Board (CPCB) has identified seventeen categories of large and medium-scale industries as significant polluters. These challenges underscore the **importance of adopting sustainable development practices.**
- The Ministry of Environment and the central and state pollution control boards have implemented various measures, but sustainable development is the key to ensuring a better future.
- Development solely focused on current living standards, without considering future generations, would deplete resources and degrade the environment, leading to both **environmental and economic crises.**
- Therefore, a **conscious effort towards sustainable development** is essential to protect the environment for future generations.

Sustainable Development

Balancing Environment and Economy

- The **interdependence of the environment and the economy** necessitates a shift towards sustainable development.
- **Sustainable development,** as defined by the United Nations Conference on Environment and Development (UNCED), **is about meeting the present generation's needs without compromising the ability of future generations to meet their own needs.**
- The key terms in this definition are "**needs**" and "**future generations**," emphasizing the equitable distribution of resources.
- "Sustainable development" also means **improving the material standard of living** for those at the grassroots level, particularly the poor.
- This improvement includes factors such as increased income, access to education, healthcare, sanitation, and clean water.

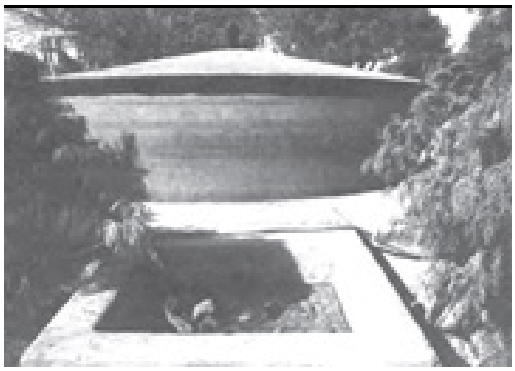

Figure. 10.19: Gobar Gas Plant uses cattle dung to produce energy.

- Furthermore, it **aims to reduce absolute poverty** by providing secure livelihoods while minimizing resource depletion, environmental damage, cultural disruption, and social instability.
- Sustainable development strives to **meet the basic needs of all**, especially the impoverished majority, in areas like employment, food, energy, water, and housing, fostering growth across various sectors to fulfill these needs.

Achieving Sustainable Development

- The **Brundtland Commission** underscores the importance of protecting future generations by leaving them a planet that is in good environmental condition. This resonates with the argument put forth by environmentalists, emphasizing a **moral obligation** to hand over Earth to the next generation in a better state than we inherited it.
- To achieve sustainable development, the present generation must promote development that enhances the natural and built environment while ensuring:
  - **Conservation of Natural Assets:** Protecting and conserving natural resources.
  - **Preservation of Ecological Regeneration:** Maintaining the Earth's natural ecological systems' regenerative capacity.
  - **Avoiding Imposition on Future Generations:** Ensuring that the development process doesn't burden future generations with added costs or risks.

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Herman Daly, an environmental economist, *outlines* ***key steps*** *for achieving sustainable development*:

- **Population Control:** Limiting the human population to a level within the Earth's carrying capacity.
- **Efficient Technology:** Fostering technological progress that is input-efficient rather than resource-consuming.
- **Sustainable Resource Use:** Extracting renewable resources at a sustainable rate, ensuring that it doesn't exceed the rate of regeneration.
- **Non-Renewable Resources:** Managing non-renewable resources so that the rate of depletion doesn't surpass the rate of creating renewable substitutes.
- **Pollution Mitigation:** Correcting inefficiencies arising from pollution.

In 2015, the United Nations formulated **17 Sustainable Development Goals (SDGs)** to be achieved by 2030. These goals cover various aspects of sustainable development, including poverty alleviation, clean energy, climate action, and gender equality.

POINTS TO PONDER

Sustainable development can be truly sustainable only when the aspirations of the developing countries are also met. These countries host the world's poorest population and need development to eradicate poverty. While the developed world demands these countries to contain their emissions. Can you find out ways in which developed countries can help developing countries to ensure sustainable development which protects and preserves the environment along with ensuring development?

Strategies For Sustainable Development in India

India is actively pursuing sustainable energy strategies to reduce its environmental impact while meeting its growing energy needs. Several ***key initiatives*** *focus on shifting away from conventional power sources with adverse environmental effects.*

Non-Conventional Energy Sources

- India is reducing its reliance on thermal and hydroelectric power plants, which emit greenhouse gases and disrupt natural ecosystems.
- Instead, the country is **harnessing wind power and solar energy**.
- Wind turbines and solar panels are being used to **generate clean, renewable electricity**.

LPG and Gobar Gas in Rural Areas

- In rural areas, households traditionally used **biomass fuels** like wood and dung cakes, leading to deforestation and air pollution.
- To address this, **subsidized LPG** and **gobar gas** (biogas) plants are being promoted.
- LPG is a clean fuel that **reduces household pollution**, while gobar gas is produced from cattle dung and serves as a **clean energy source and organic fertilizer.**

CNG in Urban Areas

- The use of **Compressed Natural Gas (CNG)** in public transport systems, particularly in Delhi, has significantly reduced air pollution.
- Many Indian cities have adopted CNG as a cleaner alternative fuel.

Wind Power

- **Windmills** are utilized in areas with consistent high wind speeds to generate electricity without harming the environment.
- While the initial costs are high, the long-term benefits and reduced environmental impact make them a viable choice.

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Solar Power through Photovoltaic Cells

- India, with abundant sunlight, is increasingly investing in solar energy. In recent years, India is taking efforts to increase the power generation through solar energy.
- **Photovoltaic cells** convert solar energy into electricity, making it a valuable resource for remote areas and places where grid connections are impractical or costly.
- Solar power is a **pollution-free and sustainable energy option.**
- India is also leading an International body called the **International Solar Alliance (ISA).**

Mini-Hydel Plants

- India is tapping into the **energy potential of perennial streams** in mountainous regions with **mini-hydel plants**.
- These small-scale hydroelectric facilities **use stream energy** to generate electricity locally.
- They have **minimal environmental impact**, maintain **local land use patterns**, and **reduce the need for extensive transmission infrastructure.**

Traditional Knowledge and Practices

- India's traditional systems of agriculture, healthcare, housing, and transportation were inherently eco-friendly.
- Traditional healthcare, such as **Ayurveda, Unani, Tibetan, and folk remedies**, is making a comeback due to their effectiveness and minimal environmental impact.
- **Herbal products** are gaining popularity for their eco-friendliness and fewer side effects

Biocomposting

- After decades of heavy chemical fertilizer use, Indian farmers are returning to **composting organic waste** for sustainable agriculture.
- **Earthworms** are used to accelerate composting, reducing waste and benefiting soil quality.
- **Cattle dung** is also valued as a natural fertilizer and soil conditioner.

Biopest Control

- The excessive use of chemical pesticides led to environmental pollution.
- India is now adopting biopest control methods, including **neem-based pesticides** and **promoting mixed cropping**.
- Farmers are also encouraged to **maintain natural predators** like snakes, birds, and lizards, which help control pests.

These efforts signify a shift towards cleaner and more environmentally responsible energy sources, aligning with the principles of sustainable development.

Conclusion

In conclusion, the journey of the Indian economy from independence to the present day is a multifaceted tale of development, progress, and challenges. Over the decades, India has made significant strides in various sectors, transforming itself into a major player on the global economic stage.

Examining the sectors of the Indian economy reveals the intricate web of agriculture, industry, and services, each playing a vital role in shaping the nation's economic landscape. Agriculture remains a crucial sector, providing livelihoods to millions, while industry and services sectors have seen impressive growth, contributing significantly to GDP.

However, this journey has also brought to the fore environmental challenges and questions of sustainability. Hence, the pursuit of sustainable development is becoming increasingly important, necessitating responsible resource management, environmental conservation, and the integration of eco-friendly practices into economic activities.

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BASICS OF ECONOMICS

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Glossary

- **Primary Sector:** The primary sector of the economy involves activities related to the extraction and harvesting of natural resources, such as agriculture, mining, fishing, and forestry.
- **Secondary Sector:** The secondary sector encompasses industrial activities that involve processing and manufacturing raw materials into finished products, including factories, workshops, and construction.
- **Tertiary Sector:** The tertiary sector refers to the service industry, including activities that provide services rather than tangible goods, such as healthcare, education and banking.
- **Gross Domestic Product (GDP):** GDP is the total value of all goods and services produced within a country's borders during a specific time period, often used as an indicator of a country's economic health.
- **Underemployment:** Underemployment occurs when individuals are employed but not fully utilized, often performing jobs that do not make full use of their skills or abilities.
- **Disguised Unemployment:** Disguised unemployment refers to a situation where individuals appear to be employed but are not contributing significantly to productivity, indicating inefficiencies in the labor market.
- **Infrastructure:** Infrastructure refers to the fundamental facilities and systems necessary for the functioning of a society, including roads, bridges, utilities, and public services.
- **Small-scale Industry:** Small-scale industries are businesses characterized by their small size and limited capital, often focusing on local or niche markets.
- **Scheduled Castes and Tribes:** Scheduled Castes and Tribes refer to specific groups in India that historically faced social discrimination and were granted special protections and benefits by the government.
- **Human Development:** Human development encompasses various aspects of human well-being, including education, healthcare, access to clean water, housing, and nutrition.
- **Infant Mortality Rate:** The infant mortality rate is the number of deaths of infants (usually per 1,000 live births) in a specific region or country, often used as an indicator of healthcare and social development.
- **Illiteracy:** Illiteracy refers to the inability to read and write, indicating a lack of basic education and often associated with limited economic opportunities.
- **Malnourishment:** Malnourishment is a condition where individuals do not receive adequate nutrition, leading to physical and developmental health issues.
- **Public Welfare:** Public welfare involves government programs and initiatives designed to promote the well-being and social progress of the population, often including social safety nets and assistance to vulnerable groups.
- **Sustainable Development**: Sustainable development is a holistic approach to economic growth that aims to meet present needs without compromising the ability of future generations to meet their own needs, considering environmental, social, and economic factors.

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Indian Economy on the Eve of Independence

Bibliography: This chapter encompasses the summary of **Chapter 1** of Class XI NCERT (Indian Economic Development)

Introduction

The structure of India's current economy is not a recent creation, it has deep historical roots, particularly during the period when India was under British colonial rule, which endured for nearly two centuries before India ultimately achieved independence on August 15, 1947. The primary objective of British colonial rule in India was to transform the nation into a supplier of raw materials for the rapidly expanding modern industrial base of Great Britain. It is crucial to comprehend the exploitative nature of this colonial rule to evaluate the level of development managed by the Indian economy in the past seven and a half decades.

Low Level of Economic Development During Colonial Rule

Pre-Colonial Economic Strength

- Before the advent of British colonial rule, India boasted a **self-sustaining economy,** with agriculture as the primary livelihood source for the majority.
- However, the economic fabric was also rich with diverse manufacturing activities, particularly flourishing in the handicraft industries.
- The country was globally recognised for its exquisite cotton and silk textiles, metalwork, and precious stone craftsmanship, with these high-quality goods finding markets worldwide due to their exceptional craftsmanship.

Colonial Economic Policies

- A shift towards British interests with the onset of colonial rule, the economic policies imposed by the British administration were primarily aimed at bolstering the economic interests of Britain, rather than nurturing the growth of the Indian economy.
- This shift in economic policy transformed India into a supplier of raw materials while becoming a consumer of finished industrial products from Britain.

Textile Industry in Bengal

- **Muslin** is a type of cotton textile which had its origin in Bengal, particularly, places in and around Dhaka, now the capital city of Bangladesh.
- **'Daccai Muslin'** had gained worldwide fame as an exquisite type of cotton textile.
- The finest variety of muslin was called **malmal**.
- Sometimes, foreign travellers also used to refer to it as **malmal shahi or malmal khas** implying that it was worn by, or fit for, the royalty.

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Neglect in Assessing India's Economic Health

- One glaring oversight of the colonial government was its lack of genuine effort to evaluate India's national or per capita income, which remained largely unassessed.
- Although there were individual attempts to gauge these incomes, the results were often conflicting and inconclusive.

Noteworthy Attempts to Estimate India's Income

- Among the notable figures who endeavoured to estimate India's income during this period were **Dadabhai Naoroji, William Digby, Findlay Shirras, V.K.R.V. Rao, and R.C. Desai. V.K.R.V. Rao's** estimates were particularly significant during the colonial era.
- Despite the varying estimates, a common consensus among most studies was that India's overall **real output growth during the first half of the twentieth century was below two per cent.**
- Furthermore, there was a scant **half-percent annual increase in per capita output,** painting a picture of economic stagnation during the colonial period.

POINTS TO PONDER

During British colonial rule, India experienced a significant decline in its economic and human development indicators, resulting in the country transitioning from having 25% of global trade to less than 1%. Can you list the policies implemented by the British across various sectors that contributed to India's economic decline during this period?

Agricultural Sector

It is a sector of the economy which includes crop and animal production, as well as agricultural engineering and production of agricultural machinery, fertilizers and other kinds of products supporting farming.

Prevalence of Agrarian Economy

- Under British colonial rule, India's economy predominantly remained agrarian, with about 85 percent of the population residing in villages and depending on agriculture for their sustenance.
- Despite engaging a substantial portion of the population, the agricultural sector was riddled with numerous challenges.

Agricultural Productivity

- Agricultural productivity is the ratio of agricultural outputs to inputs.
- Agricultural productivity witnessed a decline in colonial India, even though there was some expansion in the total cultivated land area.
- This stagnation was chiefly attributed to the various land settlement systems introduced by the colonial government.

Zamindari System and it's Detrimental Impact

- The zamindari system granted large tracts of land to intermediaries known as zamindars, and they used to collect land revenue from the peasants who were working in those land tracts.
- The zamindari system, implemented in the **Bengal Presidency** (encompassing parts of present-day eastern states), channelled agricultural profits away from the cultivators and towards the zamindars.
- Unfortunately, a significant number of zamindars, akin to the colonial government, showed little interest in enhancing agricultural conditions.
- Their primary focus remained on rent collection, unmindful of the economic hardships endured by the cultivators.

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Technological and Infrastructural Shortcomings

- The agricultural sector was further marred by **low technological advancement**, inadequate irrigation facilities, and minimal use of fertilizers.
- These factors exacerbated the challenges faced by farmers, contributing to the dismal state of agricultural productivity.

Misguided Commercialization and Lack of Investment

- The commercialization of agriculture, especially the emphasis on cash crops, did little to ameliorate the economic conditions of farmers.
- Instead of cultivating food crops, the focus **shifted to cash crops** destined for British industries.
- Despite some advancements in irrigation, investment in vital agricultural aspects like **terracing, flood control, drainage, and soil desalinization** was conspicuously absent.
- While a minority of farmers adapted their cropping patterns to prioritise commercial crops, a significant portion of tenants, small-scale farmers, and sharecroppers lacked the resources, technology, and incentives to invest in agriculture, further deepening the agricultural crisis.

Industrial Sector

The industrial sector is a segment of the economy made up of businesses that aid other businesses in manufacturing, shipping or producing their products. The industrial sector is also known as the **secondary sector.**

POINTS TO PONDER

A solid infrastructure network is the lifeline of a thriving economy. It was only under British rule that India had its railway network, road network, telegram lines and postal network. However, it did not benefit the Indian economy to grow but rather further led to its decline. Can you think why this happened?

Decline of Handicraft Industries

- India, once known for its flourishing handicraft industries, faced a stark decline during the colonial era.
- The absence of efforts to modernize these industries or establish new ones led to a significant loss in the historical significance once held by the nation's handicraft sector.

Objectives of Colonial Government

- The colonial rulers had a **twofold objective:**
  - Relegating India to a mere exporter of raw materials for Britain's modern **industries.**
  - Transforming India into a vast market for British manufactured goods.
- This **systematic de-industrialization** led to a significant rise in **unemployment** and created demand in the Indian market, which was now met through imports from Britain.

Emergence of Modern Industries

- The latter half of the nineteenth century saw the nascent development of modern industries in India, albeit at a **sluggish pace.**
- Initially, the focus was on establishing **cotton and jute textile mills.**
- The cotton mills, mainly owned by Indians, were concentrated in western India, particularly in Maharashtra and Gujarat, while the jute mills, largely foreign-owned, found their base in Bengal.

Early Twentieth Century Industrial Developments

- The early twentieth century marked the emergence of iron and steel industries, with the establishment of the **Tata Iron and Steel Company (TISCO) in 1907**.

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- Post-Second World War, a few other industries in sectors like sugar, cement, and paper began to surface.
- However, the absence of a significant capital goods industry hindered further industrialization.

Displacement of Traditional Industries

- The rise of modern industries necessitated a substantial displacement of traditional handicraft industries.
- Despite the emergence of new industries, the growth rate of the industrial sector and its contribution to the Gross Domestic Product (GDP) or Gross Value Added(GVA) remained quite limited.

Public Sector Limitations

- The scope of the new industrial sector was largely confined within the public sector, with operations primarily focused on railways, power generation, communications, ports, and selective departmental undertakings.
- This restriction further limited the potential for industrial expansion and diversification in the colonial era.

Foreign Trade

India has been an important trading nation since ancient times. However, the restrictive policies of commodity production, trade and tariff pursued by the colonial government adversely affected the structure, composition and volume of India's foreign trade.

Historical Trading Nation to Colonial Exporter

- India, with its rich history as a significant trading nation, faced a paradigm shift under the colonial government's restrictive policies on commodity production, trade, and tariffs.
- These policies reshaped India into an exporter of primary products like **raw silk, cotton, wool, sugar, indigo, and jute** while turning it into an importer of finished consumer and capital goods from Britain.

Monopoly Control by Britain

- The colonial era saw Britain establish a monopoly over India's foreign trade, controlling both imports and exports.
- A significant portion of India's foreign trade was confined to Britain, with only limited trade interactions allowed with a few other nations such as China, Ceylon (Sri Lanka), and Persia (Iran).
- The inauguration of the **Suez Canal** further tightened British control over India's trade routes. (Refer to Figure 11.1)

Figure.11.1 Suez Canal

Trade Through the Suez Canal

Suez Canal is an artificial waterway running from north to south across the Isthmus of Suez in north-eastern Egypt. It connects Port Said on the Mediterranean Sea with the Gulf of Suez, an arm of the Red Sea. The canal provides a direct trade route for ships operating between European or American ports and ports located in South Asia, East Africa and Oceania by doing away with the need to sail around Africa. Strategically and economically, it is one of the most important waterways in the world. Its opening in 1869 reduced the cost of transportation and made access to the Indian market easier.

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Export Surplus: A Misleading Indicator

- Despite generating a consistent export surplus throughout the colonial period, India's foreign trade scenario was far from favourable.
- The necessity to import vital commodities like food grains, clothing, and capital goods led to a heavy drain on India's resources, negating the apparent positive outlook presented by the export surplus.

The Drain of Wealth

- The colonial trade structure did not translate the export surplus into an inflow of gold or silver into India.
- Instead, the surplus was channelled to cover the expenses of a colonial office established in Britain, fund wars waged by the British government, and pay for the import of invisible items.
- This systematic diversion of trade surplus contributed to a **substantial drain of Indian wealth,** leaving a lasting impact on the country's economic landscape.

Demographic Condition

Demographic conditions are related to the population in a region. This covers various factors like population growth rate, the percentage of different age groups within the population, the literacy rates, the sex ratio, urban-rural population ratios, etc.

Inception of Census Operations

- The journey of demographic data collection in British India commenced with the initiation of the **census in 1881.**
- Despite its limitations, this census shed light on the uneven nature of population growth across the region.
- Following this, a decennial tradition of conducting census operations was established, providing a glimpse into the demographic shifts over time.

Phases of Demographic Transition

- Prior to 1921, India was navigating through the first stage of demographic transition.
- The shift to the second stage was marked post-1921.
- However, during this phase, **both the total population and the rate of population growth remained relatively modest.**

Literacy: A Dismal Picture

- The era depicted a bleak picture of literacy, with an **overall literacy rate lingering below 16%.**
- The scenario was particularly grim for females, whose literacy rate stood at a mere 7%, highlighting the gender disparity in educational attainment.

Public Health: A Neglected Realm

- The colonial period was characterised by a stark inadequacy of public health facilities, rendering them either inaccessible or insufficient for a large segment of the population.
- This neglect led to the widespread prevalence of water and air-borne diseases, taking a heavy toll on lives.

Mortality Rates: A Grim Reality

- The mortality rates during this period were alarmingly high, with infant mortality being particularly distressing at 218 per thousand.

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- This starkly contrasts with the current infant mortality rate of 33 per thousand. Life expectancy too was dishearteningly low at 44 years, a far cry from the present expectancy of 69 years.

Figure 11.2: A large section of India's population did not have basic needs such as housing.

Poverty: The Underlying Menace

- Although the absence of reliable data obscures the exact extent of poverty, there's no disputing the pervasive poverty that plagued India during the colonial era.
- This economic hardship significantly contributed to the deteriorating demographic profile of India during those times.

Occupational Structure

Occupational structure refers to the aggregate distribution of occupations in society, defined by skill level, economic function, or social rank.

Dominance of the Agricultural Sector

- The colonial period in India witnessed a **stagnant occupational structure,** with the agricultural sector continuing to be the predominant employer.
- The majority of the population found their livelihoods in agriculture, showcasing a limited diversification into other sectors.
- The workforce distribution remained largely unchanged, reflecting a lack of significant shifts among different industries and sectors.

Statistical Overview

- A closer look at the employment statistics reveals that the **agricultural sector** typically employs between **70-75%** of the workforce.
- On the other hand, the **manufacturing and services** sectors lagged behind, accounting for merely around **10% and 15-20% of the workforce, respectively.**

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Regional Variations

- The occupational structure also exhibited **regional variations.**
- Regions like parts of the Madras Presidency, Bombay, and Bengal saw a gradual shift from agriculture towards the manufacturing and services sectors.
- Conversely, states such as Orissa, Rajasthan, and Punjab experienced an increase in agricultural employment during the same period, indicating uneven development and diversification across different regions.

Impact on Livelihoods

- The dominance of agriculture as the primary source of livelihood underscored the **lack of opportunities and growth in other sectors.**
- This static occupational structure reflected the colonial government's lack of initiative in fostering a diversified economic environment, thereby limiting the scope for significant economic development in India during the colonial era.

Infrastructure

Infrastructure is a major sector that propels the overall development of the Indian economy. This section focuses on **power, bridges, dams, roads and urban infrastructure development.**

Road Development

- The construction of roads under the colonial regime primarily served the dual purposes of military mobilization and facilitating the transport of raw materials to ports for export.
- The local populace's needs were secondary, as the **primary focus was on serving colonial interests.**

Railway Introduction

- The advent of railways in 1850, introduced by the British, marked a significant milestone in India's infrastructure development.

Figure 11.3: First Railway Bridge linking Bombay with Thane, 1854

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- Railways not only enabled long-distance travel, breaking geographical and cultural barriers but also played a pivotal role in the **commercialization of Indian agriculture.**
- However, this commercialization had a downside as it adversely impacted the self-sufficiency of village economies, indicating a mixed legacy of railway infrastructure.

Telegraph System

- The establishment of the electric telegraph system, despite its high costs, was primarily aimed at maintaining law and order across the **colony.**
- Its introduction served the colonial administration's interests more than it served the communication needs of the local population.

Postal Services

- While postal services were introduced and were indeed useful to the public, they remained inadequate throughout the colonial period.
- The development of postal services did not match the actual needs of the Indian population, reflecting a gap in service provision.

Ports and Water Transport

- The development of ports and water transport infrastructure was crucial for the export of raw materials to Britain.
- However, these developments were not aimed at promoting internal trade or improving the livelihoods of the local populace.

Overall Assessment

- The overarching theme of infrastructure development during the colonial period was to serve the economic and administrative interests of the colonial rulers.
- While certain developments like railways and postal services had some positive impacts, the primary objective was not to cater to the needs or improve the living conditions of the Indian populace.

Conclusion

As India gained independence, the enduring effects of two centuries of British colonial rule were evident across all facets of the Indian economy. The agricultural sector was burdened with surplus labour and low productivity, while the industrial sector required modernization, diversification, increased capacity, and greater public investment. Foreign trade was primarily geared towards supporting Britain's Industrial Revolution. Infrastructure, including the extensive railway network, needed upgrades, expansion, and a shift towards public benefit. The nation grappled with widespread poverty and unemployment, necessitating a shift towards welfare-oriented economic policies. In essence, India faced immense social and economic challenges as it embarked on its post-independence journey.

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Glossary

- **A Government budget:** It is an annual financial statement that calculates a government's anticipated revenue and expenditure for a fiscal year.
- **A free rider:** It refers to someone who benefits from something without paying for it or earning it.
- **National income:** It is the total monetary value of all goods and services produced by a country during a financial year.
- **Private income:** It can be defined as the total income received by the private sector from all sources. This includes income from wages and salaries, rent, interest, dividends, and capital gains. Private income can also be defined as the total income of individuals and households from all sources, excluding government transfers.
- **Aggregate demand (AD):** It is the total demand for all goods and services produced in an economy at a given time.
- **Revenue Receipts:** They are defined as those receipts that do not create a claim on the government and, hence are termed as non-redeemable.
- **Direct tax:** It is a tax that a person or organization pays directly to the government or an entity that imposes it
- **Indirect tax:** It is the tax levied on the consumption of goods and services.
- **Progressive taxation system:** It is employed for income taxation, where higher income attracts a higher tax rate.
- **Proportional taxation system:** In this system, the tax rate is a particular proportion of profits.
- **Non-Tax Revenue:** It is the recurring income earned by the government from sources other than taxes.
- **Loan:** It is a sum of money that an individual, company, or government borrows from a bank or other financial institution.
- **The crowding out effect:** It states that increased government spending decreases private sector spending.

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12 Indian Economy (1947-1991)

Bibliography: This chapter encompasses the summary of **Chapter 2 of class XI NCERT** (Indian Economy)

Introduction

The period between 1947 and 1991 represents a transformative phase in the history of the Indian economy. During this era, India witnessed remarkable shifts in its economic landscape, moving from a primarily agrarian economy to one with a developing industrial sector. Central to this transformation was the adoption of a planned economic model, known as the Five-Year Plan, aimed at achieving balanced growth and reducing poverty.

This chapter explores the key economic policies, such as import substitution and public sector expansion, and their impact on various sectors of the economy, along with challenges that shaped the development of the Indian economy during these decades.

Quest for Economic Policies after Independence

- After independence, the then national leaders had to decide upon an **economic system** which would promote the welfare of all rather than a few.
- **Socialism** like in the Soviet Union appealed to Jawaharlal Nehru (the first Prime minister of India) the most. But he realised outright socialism in which there is no private property is not possible in a democracy like India.
- So, the national leaders looked to avoid the extreme versions of capitalism and socialism and chose to be a socialist society with a strong public sector along with private property and democracy.
- Also, the government would **plan** the economy with the private sector also being a part of it. This idea was reflected in **'Industrial Policy Resolution' of 1948 and the Directive Principles of the Indian Constitution.**
- In 1950, the **Planning Commission** was set up with the Prime Minister as its Chairperson marking the beginning of five-year plans.

What is a Plan?

- Plan contains how resources of a nation should be utilised.
- It contains general as well as specific objectives to be achieved in a specific period of time (In India, 5 years).
- It also contains a long term plan called 'perspective plan' - comprise of what is to achieved over next 20 years.
- Different goals were being emphasised in different plans in India.
- India's Five Year plans did not specify the quantity of goods and services. Instead, they specified the sectors which government is focussing (power generation, irrigation etc.).

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Types of Economic Systems

Capitalist Economy (Market economy)

- Here we depend on **market forces of supply and demand**.
- Meaning, only those consumer goods that are in demand are produced which can be sold profitably in domestic or foreign markets.
- For example, if cars are in demand, cars will be produced and if bicycles are in demand, bicycles will be produced.
- How they are produced - If labour is cheap, we use labour intensive methods, or if capital is cheap, we use capital-intensive methods.
- **Distribution** - Based on purchasing power (ability to buy goods and services) of people and not based on what people need.
- But even if low-cost housing for the poor is needed, it will not be considered as a demand in capitalist economies because the poor don't have enough purchasing power.
- Such an economic system did not appeal to Nehru as he knew that it would affect the quality of life of the majority of Indians.

Socialist Society

- Here **Government** decides what goods to produce according to the needs of the people.
- How they are produced - The government decides the way of production.
- **Distribution** - The government decides how they should be distributed.
- It is assumed that the **government knows the needs of people** - so individual needs are not taken into consideration, unlike capitalist economies.
- For example - a socialist nation provides free health care to all its citizens.
- China and Cuba are some of the economies following socialist principles.

Mixed Economy

- Production and distribution - Here, **both the government and market together** decide the production and distribution of goods and services.
- The market will provide whatever goods and services they can produce well, and the government focuses on providing essential welfare activities which the market fails to produce.
- Most economies are mixed economies.

The Goals of Five-Year Plans

The general goals of Five-Year Plans were: **growth, modernisation, self-reliance and equity.** Due to limited resources, priority was given to different goals in each plan. However, planners tried to ensure that the policies of the plans did not contradict the importance of these **four goals.**
Let's study these goals in detail.

1. **Growth**
   - ✧ It denotes the increase in a country's capacity to produce goods and services.
   - ✧ This may be reflected in a larger stock of productive capital or an increase in the efficiency of productive capital and services.
   - ✧ **Gross Domestic Product (GDP)** is an economic indicator which perfectly measures the economic growth.

Mahalanobis: the Architect of Indian Planning

- Prasanta Chandra Mahalanobis, a renowned statistician laid down the basic ideas regarding goals of Indian planning in the Second Five Year Plan.
- Mahalanobis, born in 1893 in Calcutta, graduated from the Presidency College in Calcutta and Cambridge University in England.
- In 1945, he was made a Fellow (member) of Britain's Royal Society.
- He established the Indian Statistical Institute (Calcutta) and started a journal, *Sankhya*, a respected forum for statisticians to discuss their ideas.
- He was open to his critics and invited distinguished economists from India as well as abroad to advise him on India's economic development.

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- ✧ GDP is the market value of all the final goods and services produced in the country during a year.
- ✧ If a cake is bigger, more people can enjoy it. Similarly, if GDP is bigger, more citizens can enjoy a better quality of life.
- ✧ GDP depends on contributions from agriculture, industry and the service sector.
- ✧ The contributions of each of these sectors make up the **structural composition** of the economy.
- ✧ For example, in some countries, agriculture contributes more to GDP, while in others, the service sector contributes more to GDP.

2. Modernisation

- ✧ **Modernisation refers** to the **adoption of new technology** which helps in increasing the production of goods and services.
- ✧ For example, a factory can increase output by using a new type of machine.
- ✧ Modernisation also refers to changes in outlook like the recognition of equal rights for women.
- ✧ Thus a modern society makes use of women in the workplaces like banks, schools, factories etc. which helps in making the society prosperous.

3. Self-reliance

- ✧ Self-reliance refers to the usage of a **nation's own resources** to increase production rather than using imported materials.
- ✧ The first seven five-year plans gave importance to self-reliance.
- ✧ This helped us to reduce dependence on foreign countries, especially for food.

4. Equity

- ✧ Equity aims to reduce the inequality in the distribution of wealth.
- ✧ All three of the above, that is Growth, Modernisation and self-reliance alone cannot improve the quality of life of all people.
- ✧ This means the rich will have all the benefits of the above and a poor section lives in poverty.
- ✧ So equity helps every Indian to meet their basic needs of food, education, housing and healthcare.

*Let us see how the **First seven Five Year Plans (1950-1990)** attempted to fulfill the above 4 goals and the extent to which they succeeded in doing so, with reference to **agriculture, industry and trade.***

Agriculture

Post-independent India was facing agricultural backwardness due to exploitative colonial policies. To counter many ill-effects of colonial rule, policymakers implemented various policies like land reforms, promotion of the use of High Yield Variety(HYV) seeds etc.

Land Reforms

- ✤ At the time of independence, the **land tenure system** was characterized by intermediaries (zamindars, jagirdars etc.) who were merely

The Service Sector

- ➢ Usually, with development, share of agriculture declines, and share of industry increases which denotes structural change. Meaning at higher levels of economic development, the service sector contributes more.
- ➢ In India, Agriculture share in GDP in 1947 was more than 50% (like a poor country) but in 1990, the share of services in GDP was 40.59%, more than agriculture or industry like seen in developed countries.

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rent collectors and did not invest in land which led to problems like low productivity in agriculture, deterioration of livelihoods of farmers etc.

- To solve this problem, **equity** in agriculture was implemented through land reforms.
- It **changed the ownership of landholdings** in which intermediaries were abolished and tillers were made the owners of the land.
- **Ownership of land** would incentivise tillers to invest in making improvements if sufficient capital was made available to them.
- **A land ceiling** was also implemented, which fixed the maximum size of land which could be owned by an individual. The purpose of the land ceiling was to reduce the concentration of land in a few hands.

Success of Land Reforms:

- Some 200 lakh tenants came into direct contact with the government which led to growth in agriculture
- Unlike other states, Kerala and West Bengal, where governments were committed to the policy of land to the tiller, could successfully implement land reforms.

Failures of Land Reforms:

- In some areas, zamindars used legal loopholes to continue to own large areas of land.
- Also in some areas, tenants were evicted, but landowners claimed the ownership of land.

Ownership and Incentives

- If the cultivators themselves are the owners of the land, they will have more incentive to increase the output of the land and thus gain profit.
- Tenants do not have this incentive because landowners get the profit from the increased output and tenants themselves have no share in the profit.
- For example, in the Soviet Union, farmers, carelessly packed rotten fruits along with fresh fruits in the same box because they did not have any incentives no ownership of land, no profit or losses.

- Big landlords delayed the implementation of land ceiling laws by challenging it in courts and used this delay to register their lands in the name of close relatives, thereby escaping from the legislation.

The Green Revolution

- At independence, 75% of the country's population was dependent on agriculture. However, the **productivity of agriculture was very low** due to the use of outdated machinery and over-dependence on unpredictable monsoons.
- This stagnation was broken by the **green revolution** which aimed at increasing the production of food grains by the use of **high-yielding variety (HYV) seeds,** especially for wheat and rice.
- The use of these seeds needed fertilizers, pesticides and proper irrigation, all in proper proportion.
- So farmers who could benefit from HYV seeds required reliable irrigation facilities as well as the financial resources to purchase fertiliser and pesticide.
- Hence, during the **initial stages (the mid-1960s to mid-1970s),** the use of HYV seeds was restricted to more affluent states like **Punjab, Andhra Pradesh and Tamil Nadu** and it benefitted the wheat-growing regions only.
- During the **second phase (mid-1970s to mid-1980s)**, it spread to more states and benefitted more variety of crops.
- Thus, the Green Revolution enabled **self-sufficiency** in food grains in India.

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Other benefits of the Green Revolution

- A good proportion of the rice and wheat produced during the Green Revolution period **(marketed surplus)** was sold by the farmers in the market.
- This led to a decline in food grain prices relative to other items of consumption.
- Also, the Green Revolution helped the government to stock sufficient amounts of food grains to be used during times of food shortage.

Concerns raised during the Green Revolution

- Possibility of an increase in the disparities between small and big farmers as only big farmers could afford better technology.
- HYV crops were also more prone to attack by pests.
- But government steps like low-interest rate loans, and subsidised fertilisers helped small farmers to tackle these issues.

The Debate Over Subsidies:

- Generally, subsidies are needed to encourage the use of new technology, because the use of any new technology will be looked upon as being **risky** by farmers.
- One perspective on subsidies is that once the technology is found profitable, subsidies must be phased out because of its burden on government finances.
- Another perspective is that since most farmers are poor, they need subsidies for buying required inputs.

Prices as Signals

- Prices are signals about the availability of goods.
- If a good is scarce, its price goes up. This will incentivise people to use it with greater care. For example, if the price of petrol goes up, government signals the scarcity of petrol and asks us to use less petrol or look for alternate fuels.
- But in the case of subsidies, some economists argue that subsidies do not allow prices to indicate the supply of goods.
- For example, when there is subsidy for electricity and water, they will be used wastefully. Farmers will cultivate water intensive crops although water may be scarce in the region. Similarly, Fertiliser and pesticide subsidies result in overuse of resources.
- Thus subsidies incentivises wasteful use of resources.

Paradox of Indian Agriculture

- By the late 1960s, we achieved **self-sufficiency** in food grains, but around 65% of the population heavily depended on the agriculture sector till the 1990s.
- Economists have highlighted that as a nation becomes prosperous, the contribution of agriculture to GDP and the population working in this sector reduces considerably.
- However, in India, during the 1950s - 1990s, the proportion of GDP contributed by agriculture declined significantly but not the population.
- This disparity was because the industrial sector and the service sector did not absorb the people working in the agricultural sector, which was a major **policy failure** during 1950-1990.

Industry and Trade

- Economic theories have emphasized a good industrial sector for the effective progress of a nation. Further, the industrial sector provides stable employment, reduces over-dependency on agriculture and promotes modernisation.
- Hence five five-year plans focussed on the **development of the industrial sector** and aimed at **expanding the industrial base** with a variety of industries for economic growth after independence.

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Public and Private Sectors in Indian Industrial Development

- At the time of independence, Indian industrialists did not have enough capital to undertake major investments, so the government had to promote the industrial sector.
- Besides, India's inclination towards **socialist principles** caused the government to control industries that were vital for the economy, which was also put in the **Second Five-Year Plan.**

Industrial Policy Resolution 1956 (IPR 1956)

- This resolution was aligned on the lines of socialist principles and formed the basis for the Second Five-Year Plan.
- It classified industries into **3 categories**: Industries that are exclusively owned by the government, industries in which the private sector could supplement the efforts of the public sector and remaining industries which were to be in the private sector.
- Irrespective of categories, the private sector was also kept under state control, as all these industries needed a license to operate.
- It was easier to obtain a license if the industrial unit was established in an economically backward area which ensured **regional equality.**

POINTS TO PONDER

India focused on the development of industries by the Industrial Policy Resolution and by the initial five-year plans. Do you think the focus on industries neglecting agriculture had adverse effects? Or was it necessary to lay down the foundation for a developing and self-sufficient India?

- There was a license for expanding output or producing a new variety of goods so that the goods produced were not more than what the economy required.

Small-Scale Industry

- In 1955, the Village and Small-Scale Industries Committee **(Karve Committee)** highlighted the role of small-scale industries in promoting rural development.
- A Small-Scale Industry is defined with reference to the maximum investment allowed in an industry. This limit has been revised over time. At present, the maximum investment allowed is rupees one crore.
- They are more labor intensive and thus provide **more employment** but they can't compete with big industrial firms (domestic as well as foreign)
- So the government intervened and reserved a certain number of products for small-scale industries. Besides, they were given concessions such as **lower excise duty and bank loans at lower interest rates.**

Trade Policy: Policy of Import Substitution

- In the first 7 Five Year Plans (FYPs), we followed a **trade policy** called **import substitution** which aimed at replacing or substituting imports with domestic production.
- This policy aimed at protecting domestic industries from foreign competition.
- For this, the government used tariffs & quotas to regulate imports. **Tariffs** are tax on imported goods which are imposed to make imports expensive and **Quotas** are the quantity of imported goods which restrict imports.

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Effect of Policies on Industrial Development

Achievements during first 7 FYPs

- The industrial sector in India experienced a significant **increase in its share of GDP from 11.8% in 1950-51 to 24.6% in 1990-91,** indicating significant development(Refer **Figure 12.1**)

Sector	1950-51	1990-91
Agriculture	59.0	34.9
Industry	13.0	24.6
Services	28.0	40.5

Figure 12.1: Comparison between the contribution of different sectors to GDP in 1950-51 and 1990-91

- The industrial sector's **annual growth rate of 6%** is commendable, and by 1990, it had become well-diversified due to the public sector.
- The promotion of **small-scale industries and protection from foreign competition** enabled the development of **indigenous industries in the electronics and automobile sectors.**

Critical Assessments

- Despite the public sector's significant contribution to the Indian economy, some economists criticised its performance.
- Initially, the public sector was required, but state enterprises continued to produce certain goods and services, often **monopolising** them. For example, **telecommunication services** were reserved for the public sector even after private sector firms could provide them.
- **The permit licence raj,** which regulated industries, had been criticised for being misused by industrialists to prevent competitors from starting new firms. This excessive regulation prevented firms from becoming more efficient and spending more time lobbying with ministries.
- Protection from foreign competition has been criticised for continuing even after it proved to do more harm than good. Indian consumers had to purchase what producers produced, **leading to low-quality goods being sold at high prices.**

POINTS TO PONDER

The industrial sector in India experienced a significant increase in its share of GDP from **13% in 1950-51 to 24.6% in 1990-91,** indicating significant development. However, the impact of industrialisation in India was not as much as it was seen in China. What do you think were the reasons for this?

- Further, after four decades of planned development, no distinction has been made between what the public sector can do and what the private sector can also do.
- This has led some scholars to argue that the state should focus on areas where the **private sector** can manage, and the **government** should focus on **important services** that the private sector cannot provide.

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- Public sector firms in India have faced significant losses due to the **difficulty of closing government undertakings,** which drains limited resources.
- Economists argued that the public sector should be evaluated based on their contribution to the welfare of the nation, not on profits.

Due to all these conflicts, economists called for change in policy with a restricted role of the public sector and more freedoms for the private sector which led to a **New Economic policy in 1991.**

Conclusion

Progress of India during the first seven plans included self-sufficiency in food production (green revolution), diversified industries and abolition of the zamindari system (land reforms). However, excessive government regulation and inward-oriented trade strategies both reduced the efficiency of the industrial sector. This showed the need for reform of economic policy in 1991.

Glossary

- **Socialism:** A system where the means of production and distribution are owned or controlled by the state with an emphasis on equitable wealth distribution.
- **Self Sufficiency:** Country's ability to meet all essential food and agricultural needs.
- **Subsidy:** Financial support or incentives provided by a government to farmers to promote production, lower costs, or stabilise prices.
- **Import Substitution:** Strategy where a country aims to reduce reliance on foreign goods by promoting the domestic production of those goods.
- **Regional Equality:** Balanced development and equitable distribution of resources, opportunities, and benefits among different geographic areas or regions.
- **Monopoly:** Situation where a single company or entity dominates and controls a specific sector, often with limited competition.

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13 Indian Economy: LPG Era

Bibliography: This chapter encompasses the summary of **Chapter 3 of Class XI NCERT** (Indian Economic Development) and **Chapter 4 of Class X NCERT** (Economics)

Introduction

After independence, India followed the mixed economy framework by combining the advantages of the capitalist economic system with those of the socialist economic system. However, this journey met a turning point in 1991, when a severe economic crisis occurred due to external debt issues and plummeting foreign exchange reserves. This crisis propelled the government to usher in new economic reforms called Liberalisation, Privatisation and Globalization (LPG), steering India onto a new developmental pathway.

Production Across Countries

- Production is the act or process of making or manufacturing something.
- Prior to the mid-20th century, production was predominantly contained within national boundaries, with trade in raw materials, foodstuffs, and finished goods being the primary connections between different countries.
- Colonial regions like India were primarily engaged in exporting raw materials and importing finished goods.

The Advent of Multinational Corporations (MNCs)

- A Multinational Corporation is defined as a company that owns or controls production operations in more than one country.
- Post the mid-20th century, the emergence of **Multinational Corporations (MNCs)** significantly altered the global production landscape.

Objective and Strategy of MNCs

- MNCs aim to minimize production costs and maximize profits by establishing offices and production facilities in regions with cheaper labor and other resources.
- This global spread of production allows MNCs to benefit from the diverse advantages offered by different regions.

Global Distribution of Production

The production processes are fragmented into smaller parts and distributed globally, optimising costs and leveraging regional advantages. For instance,

China is recognised for being a cost-effective manufacturing hub.

Mexico and Eastern Europe are valued for their geographical proximity to the large markets of the US and Europe.

India is sought for its highly skilled engineers and educated English-speaking youth capable of handling technical and customer care services.

Benefits to MNCs

- By distributing production across borders, MNCs can achieve significant cost savings, often around 50-60%, thereby enhancing their profitability.
- This global production strategy not only allows MNCs to sell their products worldwide but also optimizes the production process by harnessing global resources efficiently.

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Interlinking Production Across Countries

- MNCs strategize their production setups based on various factors such as proximity to markets, availability of both **skilled and unskilled labour** at lower costs, assured availability of other production factors, and favourable government policies.
- The capital used to acquire assets like land, buildings, machines, and other equipment for production setup is termed investment, with investment by MNCs specifically referred to as **foreign investment.**

Ford Motors, an American company, is one of the world's largest automobile manufacturers with production spread over 26 countries of the world. Ford Motors came to India in 1995 and spent ₹ 1700 crore to set up a large plant near Chennai. This was done in collaboration with Mahindra and Mahindra, a major Indian manufacturer of jeeps and trucks. By the year 2017, Ford Motors was selling 88,000 cars in the Indian markets, while 1,81,000 cars were exported from India to South Africa, Mexico and Brazil. The company wants to develop Ford India as a component supplying base for its other plants across the globe.

Modes of MNC Operations

Independent Operations

- Upon assurance of favourable conditions, MNCs establish factories and offices for production.
- The underlying expectation from such investments is to generate profits through these assets.

Collaborative Production

- At times, MNCs form joint ventures with local companies, benefiting the latter in **two primary ways:**
- Provision of capital for additional investments like procurement of new machines for enhancing production.
- Introduction of the latest technology for production, shared by the MNCs.

Acquisition of Local Companies

- A prevalent method for MNCs is to acquire local companies and then amplify production.
- For instance, Cargill Foods, an American MNC, acquired Parakh Foods in India, inheriting its large marketing network and four oil refineries, becoming the largest producer of edible oil in India.

Outsourcing to Small Producers

- Large MNCs often place production orders with small producers worldwide, particularly in the garments, footwear, and sports items industries.
- The products are then sold under the MNCs' brand names, giving them significant control over price, quality, delivery, and labour conditions for these producers.

Impact and Influence of MNCs

- Many top MNCs possess wealth exceeding the entire budgets of some developing countries, granting them substantial power and influence.
- Through various operational strategies, such as partnerships with or acquisitions of local companies and outsourcing, MNCs are spreading their production globally and interacting with local producers across countries.
- This has led to a strong influence by MNCs on production at distant locations, creating a network of interlinked production centers worldwide.

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Foreign Trade and Integration of Markets

Historical Perspective

- **Foreign trade:** It is the exchange of goods and services between countries.
- Foreign trade has been a pivotal channel linking countries for a considerable duration.
- Historically, intricate trade routes connected India and South Asia to both eastern and western markets, fostering extensive trade exchanges.
- The attraction of trading opportunities beckoned various trading entities, like the **East India Company, to India.**

Core Function of Foreign Trade

- The essence of foreign trade lies in furnishing a platform for producers to transcend domestic markets and venture into international market territories.
- This international trading realm allows producers to vend their products not merely in local markets but also in markets nestled in foreign countries.
- Concurrently, buyers benefit from an enriched assortment of goods, extending beyond domestic production, thanks to the import of foreign-produced goods.

POINTS TO PONDER

An open and globally connected economy enables a nation to integrate into the global supply chain, and attract foreign direct investment (FDI), and multinational corporations (MNCs). Nevertheless, it also makes the Indian economy vulnerable to the challenges of the global economic landscape. Can you think of some of the issues associated with this kind of exposure? (An example is the 2008 financial crisis)

Implications of Trade Opening

- The advent of **trade liberalization** facilitates the journey of goods from one market to another, enriching the variety of goods in markets.
- It tends to harmonize the prices of analogous goods across different markets, instigating a competitive atmosphere among producers from disparate countries, irrespective of the geographical miles separating them.

Chinese Toys in India

➢ Chinese manufacturers learn of an opportunity to export toys to India, where toys are sold at a high price. They start exporting plastic toys to India. Buyers in India now have the option of choosing between Indian and the Chinese toys. Because of the cheaper prices and new designs, Chinese toys become more popular in the Indian markets. 70 to 80 per cent of the toy shops have replaced Indian toys with Chinese toys. Toys are now cheaper in the Indian markets than earlier.

➢ What is happening here? As a result of trade, Chinese toys come into the Indian markets. In the competition between Indian and Chinese toys, Chinese toys prove better. Indian buyers have a greater choice of toys and at lower prices. For the Chinese toy makers, this provides an opportunity to expand business. The opposite is true for Indian toy makers. They face losses, as their toys are selling much less.

Market Integration Through Foreign Trade

- Foreign trade acts as a backbone for intertwining markets or achieving market integration across different countries.
- The resultant integrated markets foster a competitive environment, expanding choices for buyers and opening new market horizons for producers.

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Situation Prior to the LPG Era

- The financial crisis in India during the 1980s stemmed from inefficient economic management.
- Government funds were generated through taxation, public sector enterprises, and borrowing when expenditures exceeded income.
- Imports of goods like petroleum required payment in dollars, which were earned from exports.

Economic Disparities and Fiscal Management

- Despite low revenues, the government increased spending to tackle unemployment, poverty, and population explosions.
- Developmental programmes failed to generate sufficient revenue, and inadequate internal generation, particularly through taxation, exacerbated the deficit.
- A significant portion of government spending was directed towards non-immediate return areas like the social sector and defence.
- The income from public sector undertakings was insufficient to meet the escalating expenditure.

Foreign Exchange and International Borrowing

- The borrowed foreign exchange was often utilised for consumption needs, while no substantial efforts were made to curtail such spending or enhance exports to balance growing imports.
- By the late 1980s, the gap between government revenue and expenditure had widened considerably, making borrowing to cover the deficit unsustainable.
- Prices of essential goods soared, and imports surged without a corresponding increase in exports, depleting foreign exchange reserves to a precarious level.

Crisis Management and International Assistance

- The crisis deepened as foreign exchange reserves plummeted to a level inadequate for financing more than two weeks of imports and paying interest to international lenders.
- No nation or international institution was inclined to lend to India, prompting India to seek aid from the **International Bank for Reconstruction and Development (IBRD) or World Bank, and the International Monetary Fund (IMF).**
- A loan of $7 billion was secured to navigate through the crisis, contingent upon India liberalize its economy, diminishing government intervention, and abolishing trade restrictions.

Introduction of New Economic Policy (NEP)

- Complying with the international agencies' conditions, India announced the New Economic Policy (NEP), embracing broad economic reforms aimed at fostering a competitive environment and easing entry and growth barriers for firms.
- **The NEP encompassed two primary strategies:**
  - **Stabilisation Measures:** Short-term measures to rectify balance of payments discrepancies and control inflation by maintaining adequate foreign exchange reserves
  - **Structural Reform Measures:** Long-term measures to augment the economy's efficiency and international competitiveness by eliminating rigidities in various segments of the Indian economy. The core themes of the reforms were **liberalization, privatisation, and globalisation.**

  Let's discuss these three aspects in detail.

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Liberalisation

- The term liberalisation embodies the removal of governmental restrictions, allowing businesses greater freedom in deciding what to import or export.
- Post-liberalization, the government's stance became more liberal with fewer restrictions imposed on trade and investment, thereby promoting a freer trade environment.
- Liberalisation, **aimed at deregulating economic activities,** was initiated to overcome the growth impediments caused by restrictive rules and laws.
- While some measures were introduced in the 1980s, comprehensive reform policies were launched in 1991, impacting various sectors like the industrial sector, financial sector, taxation, foreign exchange markets, and trade and investment sectors.

Deregulation of the Industrial Sector

- **Prior to 1991**, stringent regulatory mechanisms such as industrial licencing, restricted private sector involvement, small-scale industries reservations, and controls on price and distribution were in place.
- **Post-1991** reforms abolished industrial licensing for most product categories, with exceptions like alcohol, hazardous chemicals, and a few others.
- The public sector's exclusivity was narrowed down to atomic energy generation and some core railway transport activities.
- **De-reservation** of many goods previously restricted to small-scale industries was undertaken, and market-determined prices were introduced in most industries.

Financial Sector Reforms

- Prior to 1991, the financial sector, encompassing commercial banks, investment banks, stock exchanges, and the foreign exchange market, was under the stringent regulation of the **Reserve Bank of India (RBI).**
- After 1991, reforms aimed at transitioning RBI's role from regulator to facilitator, enabling the financial sector to make autonomous decisions on various matters.
- The establishment of private sector banks, both Indian and foreign, was facilitated, with foreign investment limits in banks increasing to around 74%.
- Banks fulfilling certain conditions were granted the liberty to establish new branches and rationalize existing networks without RBI's approval, albeit with some managerial aspects retained with RBI to safeguard stakeholders' interests.
- **Foreign Institutional Investors (FII)** like merchant bankers, mutual funds, and pension funds were permitted to invest in Indian financial markets.

Tax Reforms

- Tax reforms focused on modifying the government's taxation and public expenditure policies, constituting its fiscal policy.
- A continuous reduction in individual income taxes and corporation tax rates was witnessed post-1991, promoting savings, voluntary income disclosure, and compliance.
- Efforts have also been made to reform the indirect taxes, taxes levied on commodities, in order to facilitate the establishment of a common national market for goods and commodities.
- In 2016, efforts to reform indirect taxes led to the establishment of a unified indirect tax system through the **Goods and Services Tax Act, 2016,** effective July 2017, simplifying tax procedures and reducing evasion.

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Foreign Exchange Reforms

- To address the **1991 balance of payments crisis,** an immediate devaluation of the rupee was carried out, increasing foreign exchange inflow.
- The reforms initiated market-determined exchange rates based on foreign exchange demand and supply, reducing government control over rupee value.

Trade and Investment Policy Reforms

- Aimed at enhancing international **competitiveness** and encouraging foreign investments and technology infusion, trade and investment liberalisation was a significant aspect of the reforms.
- Pre-reform policies of high tariffs and tight control over imports, which hampered the growth and efficiency of the manufacturing sector, were dismantled.
- Reforms encompassed **abolishing import licencing** (except for hazardous and environmentally sensitive industries), removing quantitative restrictions on imports and exports, and reducing tariff rates.
- These measures, effective from April 2001, were intended to boost the competitive stance of Indian goods in international markets and foster efficiency and modern technology adoption in local industries.

Privatisation

- Privatisation denotes the **transition from government ownership or management to private sector control of enterprises.** *This transition manifests in two primary ways:*
  - By the government relinquishing ownership and management of public sector companies.
  - By the outright sale of such companies.

Benefits of Privatisation

- **Facilitating Foreign Direct Investment (FDI):** Privatisation was envisaged as a catalyst for increasing the inflow of Foreign Direct Investment (FDI), thereby contributing to economic growth and modernisation.
- **Enhancing PSU Efficiency through Managerial Autonomy:** The government aimed to boost the efficiency of PSUs by granting them managerial autonomy. This autonomy was manifested through the conferment of special statuses like **Maharatnas, Navratnas, and Miniratnas** on certain PSUs, empowering them with greater managerial discretion.

Disinvestment

It is a form of privatisation that, involves selling off a portion of the equity of Public Sector Enterprises (PSEs) to the public.The government's primary objectives behind disinvestment were:

- To instill financial discipline, enable modernisation.
- To harness private capital and managerial expertise to elevate the performance of Public Sector Units (PSUs).

Navratnas and Public Enterprise Policies

- The government, drawing inspiration from the eminent **'Navratnas' or Nine Jewels of King Vikramaditya's** court, identified and designated **Public Sector Enterprises (PSEs)** as **Maharatnas, Navratnas, and Miniratnas.**

Operational Autonomy and Performance Enhancement

- The designated PSEs were endowed with increased managerial and operational autonomy.
- This enhanced autonomy extended to operational, financial, and managerial realms.

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Examples of Designated Public Sector Enterprises:

- **Maharatnas:** Indian Oil Corporation Limited, Steel Authority of India Limited
- **Navratnas:** Hindustan Aeronautics Limited, Mahanagar Telephone Nigam Limited
- **Miniratnas:** Bharat Sanchar Nigam Limited, Airport Authority of India, Indian Railway Catering and Tourism Corporation Limited

Historical Context and Original Objectives of PSEs

- The inception of many profitable PSEs dates back to the 1950s and 1960s, aligning with the public policy emphasis on self-reliance.
- These enterprises were established with the dual aim of infrastructure provision and direct employment generations.

Outcomes and Future Endeavours

- The conferred statuses contributed to the improved performance of these companies.
- Despite accusations of partial privatisation through disinvestment, the government, of late, has resolved to retain these enterprises in the public sector.
- The objective now is to facilitate their expansion into global markets and empower them to independently raise resources from financial markets.

Globalisation

- **Globalisation** is broadly perceived as the **integration of a nation's economy with the global economy,** fostering greater interdependence and integration.
- It transcends economic, social, and geographical boundaries by creating networks and activities that interlink global events, thereby making local occurrences susceptible to international happenings.

Factors Leading to Globalization

- **Transportation Technology:** Advancements have enabled faster delivery of goods across long distances at lower costs.
- **Information and Communication Technology (ICT):**
  - Recent strides in telecommunications, computers, and the Internet have revolutionised global communication.
  - Telecommunication facilities like the telegraph, telephone (including mobile phones), and fax have bridged communication gaps across the globe.
  - Satellite communication devices have further facilitated instant access and sharing of information, even from remote areas.
  - The Internet has become an indispensable tool for obtaining and sharing information and for instant communication, like email and voice mail, at negligible costs.

Liberalisation of Foreign Trade and Investment

- **Post-independence:** India imposed barriers to shield nascent industries from foreign competition, restricting imports to essential items like machinery, fertilisers, and petroleum.
- **Policy Shift after 1991:** A paradigm shift in policy around 1991 aimed at integrating Indian producers with the global market to foster competition and enhance quality.

Trade Barriers: A tax on imports exemplifies a trade barrier, impacting the cost and quantity of goods imported. Trade barriers were employed by governments to regulate foreign trade, deciding the type and quantity of goods imported.

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- This shift, backed by influential international organisations, entailed the substantial removal of barriers to foreign trade and investment. Consequently, the ease of importing and exporting goods increased, and foreign companies found a conducive environment to establish factories and offices in India.

The Siricilla Tragedy

In line with liberalisation, privatisation, and globalisation (LPG), the government introduced reforms in the power sector.

Consequences of the Reforms

- **Tariff Hikes:** The most notable outcome was a significant increase in power tariffs.
- **Effect on the Power Loom Industry:** Power looms, a crucial part of the cottage and small-scale sector, rely heavily on power. High tariffs severely impacted these industries, especially since power producers failed to provide consistent and quality power. With wages tied to production, power cuts directly affected the earnings of power loom workers.

The Tragedy

- The combination of increased tariffs and inconsistent power supply led to a financial crisis for the weavers.
- In Siricilla, a town in Andhra Pradesh, the situation became so dire that fifty power loom workers took their own lives.

Impact of Globalisation in India

Benefits to Consumers

- Globalisation has spurred competition among local and foreign producers.
- Primarily affluent urban consumers have benefited from a wider choice of products, improved quality, and lower prices.
- As a result, the standard of living for these consumers has significantly improved.

Effects on Producers and Workers

- The effects of globalisation have been disparate among producers and workers. Migrations of workers throughout the world occurred.

Increased Investments by MNCs

- Over the last 15 years, MNCs have ramped up their investments in India, indicating a favourable investment climate.
- Their focus has been on industries like cell phones, automobiles, electronics, soft drinks, fast food, and urban services like banking, which cater to a well-off clientele.
- These sectors have seen job creation and growth for local companies supplying raw materials.

Upliftment of Top Indian Companies

- Many top-tier Indian companies have leveraged the increased competition to upgrade technology, production methods, and standards.
- Some have benefited from successful collaborations with foreign entities.

Emergence of Indian Multinationals

- Globalisation has propelled certain large Indian companies into the multinational arena.
- Examples include Tata Motors, Infosys, Ranbaxy, Asian Paints, and Sundaram Fasteners, which are extending their operations globally.

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- **Boost to Service Sector**
- The service sector, especially IT-oriented services, has seen new avenues opening up due to globalisation.
- Examples include an Indian company producing a magazine for a London-based firm and the proliferation of call centers.
- Services like data entry, accounting, administrative tasks, and engineering are being exported to developed countries as they can be executed cost-effectively in India.

Outsourcing as a By-product of Globalisation

- One significant outcome of globalisation is outsourcing, where companies seek regular services from external sources, often from other countries, as opposed to internal sources or within the country.
- Facilitated by the advancement of communication technologies, particularly Information Technology (IT), outsourcing has seen a surge in recent times.
- Services like voice-based business processes (BPO or call centres), record keeping, accountancy, banking services, and many others are commonly outsourced to countries like India due to cheaper costs and a reasonable degree of skill and accuracy.
- The combination of low wage rates and skilled manpower has positioned India as a favourable destination for global outsourcing, especially in the post-reform era.

Steps to Attract Foreign Investment

In a bid to appeal to foreign enterprises for investment, both central and state governments in India have orchestrated specific initiatives. Here's a detailed exposition:

Establishment of Special Economic Zones (SEZs)

- Industrial domains known as Special Economic Zones (SEZs) are being constructed.
- These zones are envisaged to possess top-tier amenities including electricity, water, roads, transport, storage, recreational, and educational facilities.
- Companies establishing production hubs within these SEZs are granted tax exemptions for the initial five-year timeframe.

Amendments to Labour Laws

- To further allure foreign investment, modifications have been made in the labour laws.
- Typically, organized sector companies are mandated to adhere to certain regulations designed to safeguard workers' rights.
- However, recent relaxations in these laws now allow companies to employ workers "flexibly" during periods of heightened workload, thereby decreasing the company's labour expenses.
- This flexibility is aimed at temporary hiring during high-demand phases instead of regular employment.
- Despite these relaxations, foreign entities are advocating for further flexibility in the labour laws to potentially reduce operational costs further.

The Struggle For Fair Globalisation

- **Disparities Emanating from Globalisation:** Globalisation has predominantly benefited individuals with education, skills, and wealth, while a significant portion of the population remains alienated from its advantages.
- **The vision of Fair Globalisation:** A just form of globalisation should extend opportunities to all and ensure a more equitable distribution of benefits.
- **Government's Role**
  - The government is envisaged as a crucial player in fostering fair globalisation.
  - Ensuring the effective implementation of labour laws to uphold workers' rights.

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- ✧ Aiding small producers in enhancing their capacities until they are competitively robust.
- ✧ Employing trade and investment barriers if necessary to protect domestic interests.
- ✧ Advocating for 'fairer rules' at global forums such as the World Trade Organisation (WTO), possibly in alliance with other developing nations to challenge the hegemony of developed countries.

✤ **People's Representation**

- ✧ In recent years, collective actions and representations by people's organizations have impacted significant decisions concerning trade and investments at the WTO.
- ✧ This signifies the potential role of the populace in steering the narrative towards fair globalization.

Indian Economy During Reforms: An Assessment

As the reform process in India completes three decades, an assessment of the Indian economy reveals a mixed scenario. Growth is primarily gauged by the **Gross Domestic Product (GDP).**

GDP Growth and Sectoral Performance

✤ Post-1991, India saw a substantial rise in GDP growth, from 5.6% during 1980-91 to 8.2% during 2007-12, mainly driven by the service sector. (Refer to table 13.1)

Table 13.1: Growth of GDP in Major Sectors (in %)

Sector	1980-91	1992-2001	2002-07	2007-12	2012-13	2013-14	2014-15
Agriculture	3.6	3.3	2.3	3.2	1.5	4.2	–0.2*
Industry	7.1	6.5	9.4	7.4	3.6	5	7.0*
Services	6.7	8.2	7.8	10	8.1	7.8	9.8*
Total	5.6	6.4	7.8	8.2	5.6	6.6	7.4

Source: Economic Survey for various years, Ministry of Finance, Government of India.

Note: *Data pertaining to Gross Value Added (GVA). The GVA is estimated from GDP by adding subsidies on production and subtracting indirect taxes.

✤ However, the agriculture sector saw a decline in growth, while the industrial sector showed fluctuations.

✤ Despite a setback in growth rates across sectors during 2012-15, the service sector continued to thrive, notably with a 9.8% growth rate in 2014-15.

Foreign Investments and Reserves

Table 13.2: FDI in India inflows over the last ten years: The table below provides the FDI in India inflows over the past decade, with data sourced from UNCTAD.

Financial year (April-March)	Total FDI inflow (US $)	% of GDP
2013	28.19B	1.52%
2014	34.58B	1.70%
2015	44.06B	2.09%
2016	44.48B	1.94%
2017	39.90B	1.51%
2018	42.15B	1.56%

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Financial year (April-March)	Total FDI inflow (US $)	% of GDP
2019	50.55B	1.78%
2020	64.07B	2.41%
2021	44.73B	1.42%
2022	49.35B	1.47%

- The reform era ushered in a significant increase in **Foreign Direct Investment (FDI)** and foreign exchange reserves, with FDI and **Foreign Institutional Investment (FII)** rising from about US $100 million in 1990-91 to US $30 billion in 2017-18.
- Foreign exchange reserves surged from about US $6 billion in 1990-91 to about US $413 billion in 2018-19, making India one of the largest foreign exchange reserve holders globally.

Export Dynamics

- India emerged as a successful exporter of auto parts, pharmaceutical goods, engineering goods, IT software, and textiles post-1991.

Employment and Growth

- Criticism surrounds reform-led growth for not generating adequate employment opportunities, indicating a disconnect between GDP growth and employment generation.

POINTS TO PONDER

The post-1991 economic reforms in India during the LPG era brought about positive changes in the country's economy. Other nations had already adopted similar policies and experienced benefits, including communist China, which embraced them as early as the 1970s. What factors do you believe hindered India from embracing a fully open and capitalistic economy, and why did the country adhere to socialist economic policies?

Agricultural Reforms and Impact

- The agriculture sector has not significantly benefited from the reforms, with declining public investment in infrastructure and adverse policy changes like reduction in import duties on agricultural products, impacting the farmers negatively.

Industrial Reforms and Globalization

- Industrial growth has faced a slowdown due to factors like cheaper imports and inadequate infrastructure investment.
- Globalization has been viewed as a double-edged sword, potentially harming local industries and employment while not providing sufficient market access in developed countries.

Disinvestment of Public Sector Enterprises (PSEs)

- Targets for disinvestment of PSEs were set annually, with the proceeds used to offset government revenue shortages rather than reinvesting in PSEs or social infrastructure, drawing criticism regarding the undervaluation and sale of public assets.

Fiscal Policies and Reforms

- Economic reforms have curtailed public expenditure growth, especially in the social sectors.
- Tax reductions and tariff reduction policies, aimed at enlarging revenue and attracting foreign investment, haven't significantly increased the government's tax revenue, adversely affecting developmental and welfare expenditures.

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World Trade Organisation (WTO) and India's Participation

- The **WTO**, established in 1995 as a successor to the **General Agreement on Trade and Tariff (GATT, 1948),** aims to administer multilateral trade agreements, providing equal trade opportunities to all member countries and establishing a rule-based trading regime.
- Its broader objectives include expanding the production and trade of services, ensuring optimum utilisation of world resources, and protecting of environmental.
- India, as an important member of the WTO, has been proactive in framing fair global rules and advocating for the interests of the developing world. India has adhered to its commitments towards trade liberalisation as per WTO agreements by eliminating quantitative restrictions on imports and reducing tariff rates.
- However, there is a discourse questioning the benefit of India's membership in the WTO, highlighting the perceived unfairness in trade relationships, especially concerning the developed nations that dominate international trade.

Conclusion

India's shift from a mixed economy to embracing globalisation post-1991 has brought both opportunities and challenges. Key reforms aimed at attracting foreign investment and integrating India with the global economy yielded mixed outcomes. While urban consumers and certain sectors, like IT, benefited, the agrarian sector and small producers faced hurdles. The chapter underlines the need for a balanced approach to ensure **'fair globalisation',** safeguarding the interests of the less privileged while fostering inclusive growth.

Glossary

- **Production:** It is the act or process of making or manufacturing something.
- **Multinational Corporation (MNC):** It is a company that operates in more than one country.
- **Outsourcing:** It is a business practice where a company hires a third party to perform tasks or provide services.
- **Foreign trade:** It is the exchange of goods and services between countries.
- **Foreign exchange (forex):** It is the conversion of one country's currency into another.
- **Liberalisation:** It means the removal of governmental restrictions, allowing businesses greater freedom in deciding what to import or export.
- **Privatisation:** It means the transition from government ownership or management to private sector control of enterprises.
- **Disinvestment:** It is a form of privatisation, that involves selling off a portion of the equity of Public Sector Enterprises (PSEs) to the private.
- **Globalisation:** It is the integration of a nation's economy with the global economy, fostering greater interdependence and integration.
- **Gross Domestic Product (GDP):** It is the total monetary value of all the final goods and services produced within a country's borders in a specific time period.

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Human Development and Related Concepts

Bibliography: This chapter encompasses the summary of **Chapter 4 of Class XI NCERT** (Indian Economic Development) and **Chapter 2 of Class IX NCERT** (Economics)

Introduction

The capacity to store and transmit knowledge has significantly propelled human evolution, with education playing a central role in enhancing this capacity. The labour skills of an educated individual are notably higher than those of an uneducated one, leading to increased income generation and a substantial contribution to economic growth. Besides financial benefits, education elevates one's social standing, enables informed life choices, and fosters innovation. Furthermore, it facilitates the adaptation of new technologies, accelerating national development. Therefore, the expansion of educational opportunities is widely advocated for, as it not only enriches individual lives but also catalyses economic and societal advancement.

Human Capital

Human capital refers to the transformation of human resources into a more skilled and knowledgeable workforce, like engineers and doctors, through education and training. This transformation is analogous to turning physical resources like land into physical capital like factories.

Sources of Human Capital

- **Education:** It is the primary source of human capital formation as it significantly enhances future earning capacities, akin to companies investing in capital goods to increase future profits.
- **Health:** As a crucial input for individual and national development, expenditures on preventive, curative, and social medicine, clean drinking water, and good sanitation are vital for increasing the supply of a healthy labour force. Refer to Table 14.1.

Table 14.1: Select Indicators of Development in Education and Health Sectors

Particulars		1951	1981	1991	2001	2016-17
Real Per Capita income (in Rs)		7,651	12,174	15,748	23,095	77,659
Crude Death Rate (Per 1,000 Population)		25.1	12.5	9.8	8.1	6.3
Infant Mortality Rate		146	110	80	63	33
Life Expectancy at Birth (In Years)	Male	37.2	54.1	59.7	63.9	67
	Female	36.2	54.7	60.9	66.9	70
Literacy Rate (%)		16.67	43.57	52.21	65.20	76
Source: Economic Survey for various years, Ministry of Finance; National Statistical Office, Ministry of Statistics and Programme Implementation, Government of India						

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- **On-the-Job Training:** Firms provide on-the-job training to improve worker productivity; expenses incurred in in-house or off-campus training are seen as investments with returns in the form of enhanced labour productivity.
- **Migration:** Individuals migrate for better job opportunities and higher salaries, despite the costs associated with migration; this mobility is an aspect of human capital formation.
- **Information:** Expenditures on acquiring market information are crucial for making informed decisions regarding investments in human capital and its efficient utilisation.

Physical and Human Capital

Both physical and human capital formations are the results of deliberate investment decisions aimed at increasing the asset base and enhancing productivity. However, they differ fundamentally in several aspects, from the decision-making process to their impact on society and the economy.

Aspect	Physical Capital	Human Capital
Decision-Making Process	Investment decisions are based on knowledge and expected rates of return. Largely an economic and technical process led by rational choices.	Formation influenced by parents, society, and educators. A social and conscious decision, especially at tertiary education levels.
Ownership and Utilization	Tangible and can be separated from its owner. Utilization doesn't require the owner's presence.	Intangible, inseparable from its owner. Requires the owner's presence for utilization, as only services are sold, not the capital itself.
Mobility	Highly mobile between countries, barring artificial trade restrictions.	Mobility is restricted by nationality and culture, necessitating country-specific policy formulations for development.
Depreciation and Upgrading	Depreciated with continuous use and technological obsolescence.	Depreciates with age but can be mitigated through continuous investment in education, health, etc., enabling adaptation to technological changes.
Benefit Dispensation	Primarily generates private benefits for the owner.	Yields both private and social benefits, contributing to democratic processes, socio-economic progress, and public health.

Human Capital and Economic Growth

There is a positive relationship between human capital and economic growth. A sufficient amount of human capital is essential for producing more skilled professionals, which, in turn, is critical for economic growth.

Income Generation

- Productivity is a measure of how efficiently a person, company, or country produces goods and services.
- Innovation is the act of introducing something new, such as a new idea, method, or device.

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- Educated and healthy individuals contribute more to national income due to their higher labour skills and uninterrupted labour supply.

Productivity and Innovation

- Human capital boosts labour productivity, stimulates innovations, and creates the ability to absorb new technologies, facilitating economic growth.

Education and Technological Adaptation

- Education enables understanding of societal changes and scientific advancements, fosters inventions and innovations, and facilitates adaptation to new technologies.

Empirical Evidence

- Although empirical evidence linking human capital and economic growth is somewhat nebulous due to measurement challenges, it is recognised that a high level of human capital can stimulate income growth and vice versa.

POINTS TO PONDER

Human capital refers to the transformation of human resources into a more skilled and knowledgeable workforce through education and training. Can you list out the schemes by the central government in education, health and training for developing human capital?

National Perspective

- **India's Recognition:** India acknowledged the importance of human capital in economic growth early on, emphasising human resource development as a key part of its development strategy in the **Seventh Five-Year Plan.**
- **National Education Policy 2020:** The policy underscores the rapid global changes in the knowledge landscape and the growing demand for a multidisciplinary, skilled workforce in light of technological advances and global challenges like climate change and pandemics.
- **Policy Vision:** The vision outlines how human capital formation, steered by the evolving knowledge landscape, will propel India towards a higher growth trajectory, aligning with its ambition to become one of the world's three largest economies.

Economic Activities and Gender Disparities

- **Gender disparity** is a statistical difference between men and women, boys and girls, that reflects inequality in some quantity.
- Economic activities are categorised into three primary sectors: primary, secondary, and tertiary.
- These sectors encompass a range of activities that contribute to the production of goods and services, ultimately adding value to the national income.
  - **Primary Sector:** Involves agriculture, forestry, animal husbandry, fishing, poultry farming, mining, and quarrying.
  - **Secondary Sector:** Primarily focused on manufacturing.
  - **Tertiary Sector:** The sector encompasses trade, transport, communication, banking, education, health, tourism, services, and insurance.
- **Market and Non-Market Activities:** Economic activities are further divided into market and non-market activities.
  - **Market Activities:** These are performed for pay or profit, including the production of goods and services and government service.
  - **Non-Market Activities:** Entail production for self-consumption such as consumption and processing of primary products and own account production of fixed assets.

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- **Historical Gender Division of Labour:** Due to historical and cultural factors, a division of labour exists between men and women, often relegating women to unpaid domestic chores while men engage in paid work.
- **The Impact of Education:** Education and skill level are major determinants of earnings in the market. Women with higher education and skill levels tend to earn comparable to men and find opportunities in organised sectors like teaching, medicine, administration, and technologically driven jobs.
- **Challenges Faced by Women:** Women, especially those with meagre education and low-skill formation, face disparities like lower pay, lack of job security, and inadequate legal protection in the workforce. The absence of basic facilities like maternity leave, childcare, and other social security systems further exacerbates the challenges for women.

POINTS TO PONDER

According to the World Economic Forum, Gender parity can boost India's GDP by 27% by increasing women's participation in the labour force. However, we have seen the greatest decline in women's labour force participation in recent years. Can you think of the reasons why women's capital development is lacking and what steps can be taken to ensure their participation?

Human Capital and Human Development

- While the terms human capital and human development may sound alike, they have distinct meanings and implications.
- Their differences primarily revolve around the objectives and values associated with education and health.

Human Capital	Human Development
➢ It regards education and health as tools for increasing labour productivity. ➢ The central objective is to enhance productivity. Any investment in education and health is deemed unproductive if it doesn't augment the output of goods and services. ➢ It treats human beings as means to an end, with the end being the increase in productivity.	➢ It views education and health as crucial for human well-being, enabling individuals to make valued life choices. ➢ The central objective is to augment human welfare. Investments in education and health are valued even if they do not result in higher labour productivity. ➢ It treats human beings as ends in themselves, emphasising the intrinsic value of education and health. ➢ Advocates for the right of every individual to receive basic education and health care, emphasising literacy and a healthy life as fundamental rights.

State of Human Capital Formation in India

- Human capital formation in India is primarily driven by investments in education, health, on-the-job training, migration, and information. Among these, education and health are important.
- This section delves into the education sector's state and the necessity for government intervention in promoting human capital formation.

Framework of Governance

- India, being a federal country, has governance at union, state, and local levels (Municipal Corporations, Municipalities, and Village Panchayats) with distinct functions as outlined in the Constitution.

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- The responsibility for expenditures on education and health is shared across all three tiers of government, aiming for a holistic development approach.

Need for Government Intervention

- Education and health services create **both private and social benefits,** necessitating a balance of private and public institutions in these sectors.
- Given the long-term impact and irreversible nature of investments in education and health, government intervention is crucial to ensuring quality and accessibility.
- The lack of complete information about the quality and cost of services can lead to monopoly power and exploitation by service providers, underscoring the government's role in stipulating and enforcing standards.

Educational and Health Governance in India

- The union and state-level ministries of education, alongside organisations like the **National Council of Educational Research and Training (NCERT), University Grants Commission (UGC), and the All India Council of Technical Education (AICTE),** play significant roles in facilitating the education sector.
- Similarly, the health sector is facilitated by the union and state-level ministries of health, departments of health, and organizations like the **National Medical Commission and the Indian Council for Medical Research (ICMR).**

Challenges and Government Initiatives

- With a significant portion of the population living below the poverty line, many Indians cannot afford basic education and health care services.
- The challenge extends to accessing higher education and super-speciality health care, especially for the socially oppressed classes.
- Both the union and state governments have been increasing expenditures in the education sector over the years to achieve full literacy and elevate the average educational attainment of Indians, reflecting a sustained commitment towards human capital formation.

Education Sector in India

Government expenditure on education is a crucial aspect of human capital formation in India, evaluated in terms of its percentage of total government expenditure and its percentage of **Gross Domestic Product (GDP).**

Government Expenditure Trends

- The percentage of education expenditure out of total government expenditure reflects the government's prioritization of education, while the percentage of education expenditure in GDP signifies the portion of people's income dedicated to education development.

Historical Trend (1952-2014)

- Education expenditure as a percentage of total government expenditure rose from **7.92 to 15.7.**
- Education expenditure as a percentage of GDP increased from **0.64 to 4.13.**
- The increase has been irregular, with periods of rise and fall.

Elementary vs Tertiary Education Expenditure

- Elementary education consumes a major share of the total education expenditure.
- In contrast, the share for higher/tertiary education is the least, though the expenditure per student at this level is higher than that of elementary education.

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Need for Balanced Expenditure

- An expansion in school education necessitates more trained teachers from higher educational institutions, advocating for increased expenditure across all education levels.
- **State-wise Disparity (2014-15):** Per capita public expenditure on elementary education varied considerably across states, **from Rs 34,651 in Himachal Pradesh to Rs 4,008 in Bihar,** indicating a disparity in educational opportunities and attainments.

Comparative Analysis with Desired Levels

- Various commissions recommended education expenditures of at least 6% of GDP to achieve significant growth in educational achievements.
- The **Tapas Majumdar Committee (1999)** estimated a need for around **Rs 1.37 lakh crore over 10 years (1998-99 to 2006-07)** to bring all Indian children aged 6-14 under school education.
- The current level of education expenditure (a little over 4% of GDP) is inadequate compared to the desired 6% of GDP, which has been accepted as a crucial goal for the upcoming years.

Legislative and Fiscal Initiatives

- The **Right of Children to Free and Compulsory Education Act, 2009** was enacted to make free education a fundamental right for all children aged 6-14.
- A 2% **'education cess'** on all Union taxes has been initiated to fund elementary education.
- Additionally, the government has sanctioned a large outlay for promoting higher education and introduced new loan schemes for students pursuing higher education.

Educational Achievements Indicators

- Educational achievements are usually indicated by adult literacy levels, primary education completion rates, and youth literacy rates, as outlined in Table 14.2.

Table 14.2: Educational Attainment in India

S.No.	Particulars	1990	2000	2011	2017-18
1.	Adult Literacy Rate (percent of people aged 15+)				
	1.1 Male	61.9	68.4	79	82
	1.2 Female	37.9	45.4	59	66
2.	Primary completion rate (percent of relevant age group)				
	2.1 Male	78	85	92	93
	2.2 Female	61	69	94	96
3.	Youth literacy rate (percent of people aged 15+ to 24)				
	3.1 Male	76.6	79.7	90	93
	3.2 Female	54.2	64.8	82	90

Impact of Education, Health, and Employment on India's Economy

- The quality of a population, which hinges on **literacy rates, health** (indicated by life expectancy), and skill acquisition, significantly influences a nation's growth trajectory.
- A well-educated and healthy populace is considered an asset.

Education

- Education plays a pivotal role in opening up new vistas, nurturing aspirations, and instilling life values, thereby contributing to individual and societal growth.

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- The government has made strides in ensuring universal access to elementary education, with a focus on girls' education, through initiatives like **"Sarva Siksha Abhiyan".**
- Investment in education has seen an uptick from Rs 151 crore in the first plan to Rs 99,300 crore in the 2020-21.
- However, literacy rates, although improving **(from 18% in 1951 to 85% in 2018),** reveal disparities across gender and urban-rural divides.
- The goal to improve the **Gross Enrolment Ratio (GER)** in higher education in the age group of 18 to 23 years was 27% in 2019–20 aims to align India with global averages, with a strategic focus on vocational training, distance education, and IT-enabled learning.

Health

- Health is a cornerstone for optimising an individual's potential and productivity and is crucial for an efficient workforce.
- India has developed a substantial health infrastructure over the decades, catering to primary, secondary, and tertiary healthcare needs.
- However, challenges persist with inadequate healthcare facilities in certain regions and a disparity in the distribution of medical and dental colleges across states (Refer to Table 14.3).

Table 14.3: Health infrastructure over the years

	2013	2014	2015	2016	2017
SC/PHC/CHC	181,139	182,709	184,359	185,933	187,505
Dispensaries and Hospitals	29,274	29,715	29,957	30,044	31,641
Beds (Govt.)	628,708	675,779	754,724	6,34,879	710,761
Registered Doctor in Medical Council	45,106	33,536	20,422	25,282	17,982
Nursing Personnel (ANM+RN&RM+LHV)	2,344,241	2,621,981	2,639,229	2,778,248	2,878,182

SC: Sub centre, PHC: Primary Health Centre, CHC: Community Health Centre, ANM: Auxiliary Nurse Hydrides, RN&RM: Registered Nurses & Registered Midwives, LHV: Lady Health Visitors.
Source: National Health Policy, 2013, 2014, 2015. (National Health Profile, 2016, 2017, 2018, Central Bureau of Health Intelligence, Ministry of Health and Family Welfare.)

Employment and Unemployment

- **Employment** is defined as a paid mutual work arrangement between a recruiter and an employee.
- **Unemployment** is when someone is actively looking for work but is unable to find it.
- Employment dynamics in India are influenced by various factors, including age, willingness to work, and the sectoral distribution of jobs.
- Unemployment is prevalent in **both urban and rural areas,** albeit with different characteristics:
- Rural areas experience seasonal and disguised unemployment, largely tied to agricultural cycles.

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- Urban areas face educated unemployment, with a notable mismatch between education levels and job availability.
- Unemployment leads to social and economic repercussions, including a decline in living standards, an increased economic burden on the working population, and a detrimental impact on overall economic growth.
- Despite a statistically low unemployment rate, many individuals in India are engaged in low-income, low-productivity jobs, essentially representing underemployment.
- The employment structure, particularly in the agricultural sector, often masks the true extent of unemployment or underemployment, known as disguised unemployment.
- Migration trends from rural to urban areas and from agriculture to secondary and tertiary sectors highlight an ongoing shift in employment patterns.

India as a Knowledge Economy

- The Indian software industry has been showing an impressive record over the past two decades.
- Entrepreneurs, bureaucrats, and politicians are now advancing views about how India can transform itself into a knowledge-based economy by using information technology (IT).
- There have been some instances of villagers using e-mail which are cited as examples of such transformation. Likewise, e-governance is being projected as the way of the future. The value of IT depends greatly on the existing level of economic development.

Sectoral Employment Dynamics

- Agriculture remains a significant employer, although there's a discernible migration of surplus labour to secondary and tertiary sectors.
- The secondary sector, with small-scale manufacturing, and the tertiary sector, with emerging fields like biotechnology and information technology, offer alternative employment avenues.

Future Prospects

A reflective assessment of the educational landscape in India projects certain future prospects that need to be addressed to enhance literacy and employability, especially among the youth.

Education for All: An Unfulfilled Aspiration

- Despite an increase in literacy rates among adults and youth, the absolute number of illiterates remains stark, equal to India's population at the time of independence.
- The **Directive Principles of the Constitution** in 1950 envisioned free and compulsory education for all children up to age 14 within a decade, a goal yet to be fully realised. Achieving this would have propelled India towards 100 percent literacy.

Educated Youth Unemployment: A Rising Concern

- Unemployment rates among educated youth are alarmingly high, with **National Sample Survey Office (NSSO)** data from 2011-12 showing:
  - 19% unemployment among rural male graduates.
  - 16% unemployment among urban male graduates.
  - There is a staggering 30% unemployment among young rural female graduates.
- In contrast, only about 3-6% of primary-level educated youth in rural and urban areas were unemployed.
- The **Periodic Labour Force Survey 2017-18** indicates the situation hasn't improved significantly.

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Urgent Need for Higher Education Reforms

- Increasing allocation for higher education is crucial.
- Improving the standard of higher education institutions to ensure the impartation of employable skills is paramount.
- Addressing the paradox of higher unemployment rates among the educated necessitates re-evaluating and reforming the higher education system to better align with employment opportunities.

Advancements in Gender Equity

- A notable positive trend is the narrowing gap in literacy rates between males and females, reflecting progress in gender equity.
- However, promoting education for women remains a priority to foster economic independence, improve social status, and positively impact fertility rates and healthcare for women and children.
- Despite the upward trend in literacy rates, achieving cent per cent adult literacy, especially among women, remains a significant challenge.

Conclusion

Education and health are important in enhancing human development, enriching the quality of life, and propelling economic growth. They equip individuals with essential skills and a healthier life, enabling them to contribute significantly to society. By investing in education and health, a nation not only fosters economic advancement but also cultivates a well-rounded, informed, and healthier populace, thereby accelerating holistic human development.

Glossary

- **Human capital:** It refers to the transformation of human resources into a more skilled and knowledgeable workforce, like engineers and doctors, through education and training.
- **Economic growth:** It is the increase in the size of a country's economy over a period of time.
- **Human development:** It is a process that increases people's choices and opportunities.
- **Productivity:** It is a measure of how efficiently a person, company, or country produces goods and services.
- **Innovation:** It is the act of introducing something new, such as a new idea, method, or device.
- **Gender disparity:** It is a statistical difference between men and women, boys and girls that reflects an inequality in some quantity.
- **Unemployment:** It is when someone is actively looking for work but is unable to find it.
- **Literacy rate:** It is the percentage of people in a given population who can read and write.
- **Migration:** It is the movement of a person or people from one country, locality, place of residence, etc., to settle in another.
- **Employment:** It is termed as a paid mutual work arrangement between a recruiter and an employee.

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Employment and Poverty

Bibliography: This chapter encompasses the summary of **Chapter 4 of Class XII** (Introductory Macroeconomics) **Chapter 6 of Class XI** (Indian Economic Development), and **Chapter 3** of Class **IX (Economics)** of NCERT.

Introduction

So far, we have discussed various economic factors like national income, price levels, and interest rates without delving into the underlying forces that influence them. In this chapter, we will study a few macroeconomic models which help to understand the processes that influence these economic factors. Further, we will delve into the multifaceted issue of poverty in India and its various dimensions. We will also examine the government's initiatives and anti-poverty programs, such as the Mahatma Gandhi National Rural Employment Guarantee Act and others. This chapter will shed light on the progress made in poverty reduction, the disparities that persist, and the broader goals of human development, gender equality, and empowerment that underpin the fight against poverty in India.

Determination of Income and Employment

- As we know economic processes are influenced by different variables such as price levels, interest rates etc. but considering the complexity of economic systems, it is challenging to account for all variables simultaneously.
- Therefore, when we focus on determining a specific variable, we assume that all other variables remain constant.
- This assumption, known as "**ceteris paribus**," which translates to "**other things remaining equal**," is a common simplification in theoretical exercises.

Based on the above considerations, we can examine how National Income is determined, assuming that the prices of final goods and the interest rate remain fixed in the economy. The theoretical model we use is based on the ideas developed by **John Maynard Keynes.**

Aggregate Demand And Its Components

- In earlier chapters, we have encountered terms like consumption, investment, and GDP, which have different meanings.
- However, consumption may refer to what people intended to consume during a given period, and investment can signify the amount a producer planned to add to their inventory, which might differ from the actual outcome.
- For example, a producer plans to invest Rs 100 in goods but ends up with Rs 70 due to unexpected market demand. These planned values are known as **ex-ante** measures.
- In simpler terms, **ex-ante reflects what was planned**, while **ex-post reflects what actually occurred**.

To understand income determination, it's essential to grasp the planned values of various components of aggregate demand. *Let's explore these components now.*

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Consumption

- The consumption function is a fundamental concept in economics that explores the **relationship between household income and spending**.
- The simplest form of this function assumes that **consumption changes consistently as income changes.**
- Even when income is minimal or zero, households tend to have a certain level of consumption, which is termed "**autonomous consumption**."

The relationship between income and consumption can be expressed using this function:

$$C = \bar{C} + cY$$

The above equation is called the **consumption function**. Here C is the consumption expenditure by households. This consists of two components: **autonomous consumption and induced consumption(cY).**

Autonomous consumption is denoted by C and shows the consumption which is independent of income. If consumption takes place even when income is zero, it is because of autonomous consumption. The induced component of consumption, cY shows the dependence of consumption on income. When income rises by Re 1. induced consumption rises by MPC i.e. *c* or the marginal propensity to consume.

It may be explained as a rate of change of consumption as income changes.

$$MPC = \Delta C/\Delta Y = c$$

Now, let us look at the value that MPC can take.

When income changes, change in consumption (ΔC) can never exceed the change in income (ΔY). The maximum value which *c* can take is 1. On the other hand, consumers may choose not to change consumption even when income has changed.

In this case MPC = 0. Generally, MPC lies between 0 and 1 (inclusive of both values). This means that as income increases either the consumers do not increase consumption at all (MPC = 0) or use the entire change in income on consumption (MPC = 1) or use part of the change in income for changing consumption (0 < MPC < 1).

Imagine a country called *Imagenia* which has a consumption function described by C=100 + 0.8Y.

This indicates that even when *Imagenia* does not have any income, its citizens still consume Rs. 100 worth of goods. *Imagenia*'s autonomous consumption is 100. Its marginal propensity to consume is 0.8. This means that if income goes up by Rs. 100 in *Imagenia*, consumption will go up by Rs. 80.

Let us also look at another dimension of this i.e. savings. Savings is that part of income that is not consumed. In other words,

$$S = Y - C$$

We define the marginal propensity to save (MPS) as the rate of change in savings as income increases

$$MPS = \Delta S/\Delta Y = s$$

Since, S = Y - C.

$$S = \Delta(Y - C)/\Delta Y$$
$$= \Delta Y/\Delta Y - \Delta C/\Delta Y$$
$$= 1 - c$$

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Investment

Investment refers to the increase in a nation's physical assets, such as machinery, buildings, and infrastructure, which enhances its future productivity. Additionally, it encompasses alterations in a producer's inventory of finished goods. Notably, investment goods like machines are considered final goods, not raw materials, and contribute to production over several years.

The determination of investment decisions, such as the acquisition of new machinery by producers, is significantly influenced by the prevailing market interest rate. However, for simplification, we assume a constant annual investment plan for firms. This can be expressed as:

$$I = \bar{I}$$

Where $\bar{I}$ is a positive constant which represents the autonomous (given or exogenous) investment in the economy in a given year.

Determination of Income in Two-Sector Model

In an economy without a government, the ex ante aggregate demand for final goods is the sum total of the ex ante consumption expenditure and ex ante investment expenditure on such goods, viz. AD = C + I. Substituting the values of C and I, aggregate demand for final goods can be written as

$$AD = \bar{C} + \bar{I} + c.Y$$

If the final goods market is in equilibrium this can be written as

$$Y = \bar{C} + \bar{I} + c.Y$$

where Y is the ex ante, or planned, output of final goods. This equation can be further simplified by adding up the two autonomous terms, C and I , making it

$$Y = \bar{A} + c.Y$$

where $\bar{A} = \bar{C} + \bar{I}$ is the total autonomous expenditure in the economy.

In practice, these two elements of autonomous expenditure exhibit distinct behaviors. $\bar{C}$, representing the subsistence consumption level of an economy, remains relatively stable over time. Conversely, $\bar{I}$ has been observed to undergo periodic fluctuations.

It's important to note that Y on the left side of the equation signifies the ex ante output or the planned supply of final goods. Conversely, the expression on the right side represents the ex ante or planned aggregate demand for final goods in the economy. These two values are equal only when the final goods market, and consequently the entire economy, is in equilibrium.

If the ex ante demand for final goods falls short of the planned output of final goods for a given year will not hold. In such cases, **unintended accumulation of inventories** occurs. This unanticipated accumulation or depletion of inventories is called **inventory investment**, which can be either positive (a rise in inventory) or negative (a reduction in inventory).

Inventory investment can occur for two reasons:

- **Planned inventory investment:** firms decide to maintain some stocks for various purposes or
- **Unplanned inventory investment:** actual sales differ from the planned sales, forcing firms to either increase or reduce existing inventories.

Therefore, **even if planned Y exceeds planned C + I, actual Y will equal actual C + I, with the additional output appearing as unintended accumulation of inventories in the ex post I on the right hand side of the accounting identity.**

At this point, we can introduce the role of government in this economy. The primary fiscal variables that influence aggregate demand for final goods and services are fiscal variables Tax (T) and Government Expenditure (G). Government, through its spending G on final goods and services, contributes to aggregate demand similar to households.

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Conversely, taxes levied by the government subtract a portion of income from households, resulting in disposable income becoming $Y_d = Y - T$. Households only allocate a fraction of this disposable income to consumption purposes.

Hence the equation has to be modified in the following way to incorporate the government:

$$Y = \bar{C} + \bar{I} + G + c\,(Y - T)$$

Determination of Equilibrium Income in the short run

In microeconomic theory, when we analyze the equilibrium of supply and demand in a single market, the interaction of the demand and supply curves simultaneously determines both the equilibrium price and the equilibrium quantity.

However, in macroeconomic theory, we approach the analysis in two stages:

- **First stage:** In the first stage, we calculate macroeconomic equilibrium while treating the price level as fixed.
- **Second stage:** In the second stage, we allow the price level to vary and then analyze macroeconomic equilibrium under these conditions.

*The justification for taking the price level as fixed initially can be explained for **two reasons**:*

- In the first stage, we are assuming an economy with unused resources like machinery, buildings, and labour. In such a situation, the law of diminishing returns does not apply. This means that additional output can be produced without an increase in marginal cost. Therefore, the price level remains stable even if the quantity produced changes.
- This assumption of a fixed price level is primarily a simplifying assumption made at the early stages of macroeconomic analysis, which can be considered in later stages of analysis.

Macroeconomic Equilibrium with Price Level Fixed

(A) Graphical Method

As already explained, the consumer's demand can be expressed by the equation

$$C = \bar{C} + cY$$

Where $\bar{C}$ is Autonomous expenditure and c is the marginal propensity to consume.

$$Y = a + bX$$

Here, the variables are X and Y and there is a linear relation between them. a and b are constants. This equation is depicted in figure 15.1. The constant 'a' is shown as the "intercept" on the Y axis, i.e, the value of Y when X is zero. The constant 'b' is the slope of the line i.e. tangent θ = b.

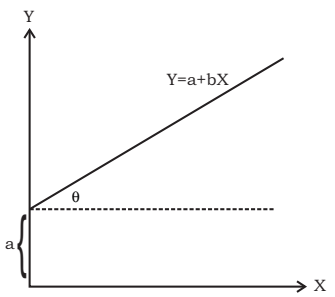

Figure 15.1: Intercept form of the linear equation.

Consumption Function – Graphical Representation

Using the same logic, the consumption function can be shown as follows (Refer Figure 15.2):

Consumption function $C = \bar{C} + cY$

where, $\bar{C}$ = intercept of the consumption function,

c = slope of consumption function = tan α

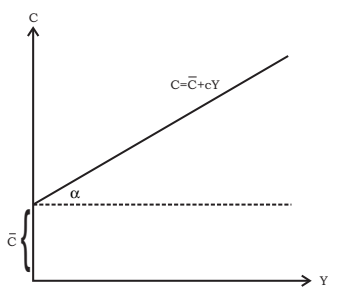

Figure 15.2: Consumption function with intercept C.

Investment Function – Graphical Representation

In a two-sector model, there are two sources of final demand, the first is consumption and the second is investment.

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The investment function was shown as $I = \bar{I}$

Graphically, this is shown as a horizontal line at a height equal to $\bar{I}$ above the horizontal axis(Refer Figure 15.3).

In this model, I is autonomous which means, it is the same no matter whatever is the level of income.

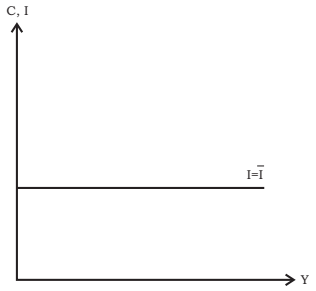

Figure 15.3: Investment function with I as autonomous.

Aggregate Demand: Graphical Representation

The Aggregate Demand function represents the combined demand for goods and services in an economy, consisting of both consumption and investment. Graphically, this can be visualized by vertically adding the consumption and investment functions to derive the Aggregate Demand curve.

Here,

$$OM = \bar{C}$$

$$OJ = \bar{I}$$

$$OL = \bar{C} + \bar{I}$$

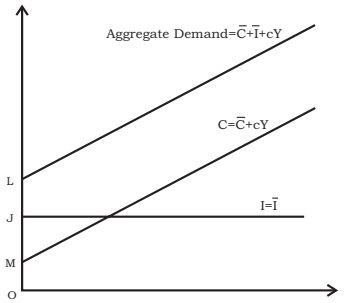

Figure 15.4: Aggregate demand is obtained by vertically adding the consumption and investment functions.

The aggregate demand function is parallel to the consumption function i.e., they have the same slope c. It may be noted that this function shows ex ante demand(Refer Figure 15.4).

Supply Side of Macroeconomic Equilibrium

In microeconomic theory, we typically illustrate the supply curve on a graph with price on the vertical axis and quantity supplied on the horizontal axis.

However, in the initial stages of macroeconomic analysis, we consider the price level to be fixed. In this context, we assume that the aggregate supply, or the Gross Domestic Product (GDP), can smoothly vary up or down because there are unused resources of various types available. Regardless of the level of GDP, it is assumed that the economy will supply exactly that amount, and the price level is not a determining factor in this scenario. This type of supply situation is represented by a 45-degree line on the graph (Refer Figure 15.5).

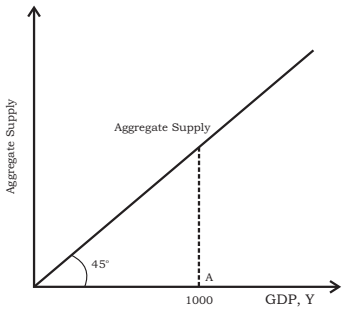

Figure 15.5: Aggregate supply curve with 45-degree line.

The distinctive feature of the 45-degree line is that every point on it has identical horizontal and vertical coordinates.

Equilibrium

Equilibrium is depicted by combining ex ante aggregate demand and supply on a diagram (as shown in Figure 15.6). The point at which ex ante aggregate demand equals ex ante aggregate supply represents the equilibrium.

In this context, the equilibrium point is denoted as E, and the corresponding equilibrium income level is 'OY$_1$.

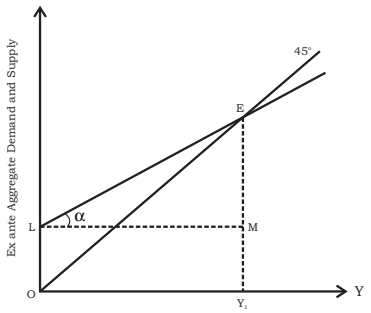

Fig. 15.6: Equilibrium of ex ante aggregate demand and supply.

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(B) Algebraic Method

Ex ante aggregate demand = $\bar{I}$ + $\bar{C}$ + cY

Ex ante aggregate supply = Y

Equilibrium requires that the plans of suppliers are matched by plans of those who provide final demands in the economy. Thus, in this situation, ex ante aggregate demand = ex ante aggregate supply (Refer Figure 15.7),

$$\bar{C} + \bar{I} + cY = Y$$
$$Y(1-c) = \bar{C} + \bar{I}$$
$$Y = (\bar{C} + \bar{I}) / (1-c)$$

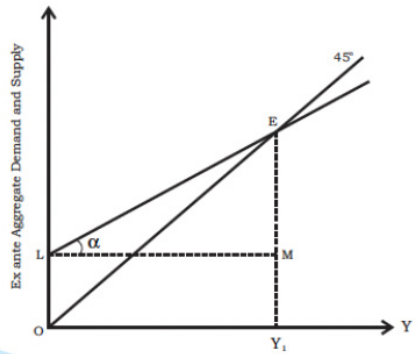

Fig. 15.7: Equilibrium of ex ante aggregate demand and supply.

Effect of an Autonomous Change in Aggregate Demand on Income and Output

The equilibrium level of income is contingent on aggregate demand, and alterations in aggregate demand can result from various factors. Changes in aggregate demand can arise from:

1. **Change in consumption:** This can occur due to two factors, change in $\bar{C}$ and changes in c.
2. **Change in investment:** While we have assumed that investment is autonomous and not influenced by income, it simply means that it is not directly tied to income. There are several variables, apart from income, that can affect investment. Notably, the availability of credit plays a significant role; when credit is easily accessible, it tends to stimulate investment. Another critical factor is the interest rate; it represents the cost of acquiring investible funds, and when interest rates are high, firms often reduce their level of investment.

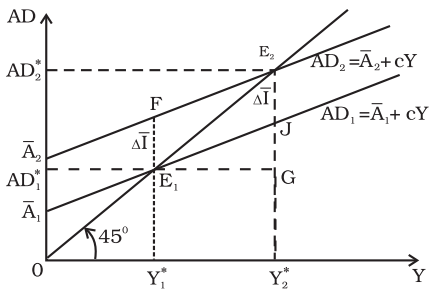

Fig. 15.8: Equilibrium Output and Aggregate Demand in the Fixed Price Model.

In the new equilibrium, output and aggregate demand have increased by an amount $E_1G = E_2G$, which is greater than the initial increment in autonomous expenditure,

$$\Delta \bar{I} = E_1F = E_2J.$$

Thus an initial increment in the autonomous expenditure seems to have a multiplier on the equilibrium values of aggregate demand and output.

The Multiplier Mechanism

The change in equilibrium income by 50 units (from 250 to 300) due to a change in autonomous expenditure of 10 units can be understood through the multiplier mechanism, which is explained as follows:

The production of final goods involves various factors such as labour, capital, land, and entrepreneurship. Assuming no indirect taxes or subsidies, the total value of final goods output is distributed among these factors as payments - wages for labour, interest for capital, rent for land, and the remainder as profit to entrepreneurs. The sum of these aggregate factor payments in the economy, known as National Income, is equal to the aggregate value of the final goods output, which is the Gross Domestic Product (GDP).

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The increase in the equilibrium value of total output is greater than the initial increase in autonomous expenditure. The ratio of the total increase in the equilibrium value of final goods output to the initial increase in autonomous expenditure is known as the **investment multiplier** of the economy. Recalling that 10 and 0.8 represent the values of $\Delta \bar{I} = \Delta \bar{A}$ and mpc, respectively, the expression for the multiplier can be explained as

$$\text{Investment Multiplier} = \Delta Y / \Delta \bar{A}$$
$$= 1 / (1\text{-}c)$$
$$= 1 / S$$

Where:

ΔY is the total increase in final goods output and c = mpc. It is important to note that the size of the multiplier is influenced by the value of c. When c becomes larger, the multiplier increases as well.

In other words, a higher marginal propensity to consume results in a more significant multiplier effect.

Paradox of Thrift

- The Paradox of Thrift suggests that when individuals in an economy collectively increase the proportion of their income that they save (i.e., when the marginal propensity to save, or MPS, increases), the total value of savings in the economy may not necessarily increase; it can either decline or remain unchanged (Refer Figure 15.9).
- This paradox may seem counterintuitive at first glance, but it can be understood as a consequence of the economic model we've learned.
- An exogenous shift in people's expenditure pattern results in an increase in the marginal propensity to save (MPS) or a decrease in the marginal propensity to consume (MPC), leading to a decrease in aggregate consumption spending and aggregate demand.
- The decrease in aggregate demand causes producers to reduce production to restore market equilibrium. This reduction in production leads to a decrease in income and consumption expenditure.
- The process of adjustment continues with each round of production and income decreases being proportional to the new MPC value.
- The process is convergent, meaning that it eventually reaches a new equilibrium.
- The total decrease in the value of output and aggregate demand due to the change in MPC is calculated as a geometric series, resulting in a significant reduction in both values.
- Despite changes in MPC, the total value of savings in the economy remains unchanged.
- Changes in parameters A (autonomous spending) and c (MPC) affect the position and slope of the aggregate demand (AD) line in the AD-AS (Aggregate Demand-Aggregate Supply) model.

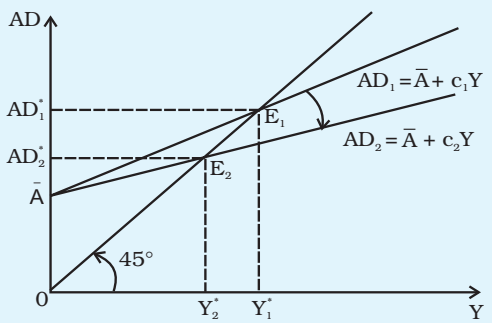

Fig. 15.9: Paradox of Thrift – Downward Swing of AD Line.

- An increase in MPS or a decrease in MPC results in a downward shift of the AD line, indicating a reduction in equilibrium output and aggregate demand.

Overall, this analysis demonstrates the impact of changes in the MPC on the equilibrium output and aggregate demand in an economy and highlights the role of MPC in influencing economic stability.

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Employment: Deficient and Excess Demand in the Economy

- The equilibrium level of output in the economy plays a crucial role in determining the level of employment, given the quantities of other factors of production. This can be understood by thinking of a production function at the aggregate level, where output depends on the combination of various inputs.
- Full employment of resources occurs when all factors of production are fully utilized in the production process.
- Equilibrium does not necessarily mean full employment of resources. The equilibrium level of output may be either higher or lower than the level of output at full employment.
- **Deficient Demand:** If the equilibrium level of output is lower than the full employment level, it suggests that the demand in the economy is insufficient to employ all available factors of production. This situation is known as deficient demand, and it can lead to a long-term decline in prices as businesses reduce production due to weak demand.

POINTS TO PONDER

Just like Marginal propensity to Consume(MPC), Marginal propensity to save tells us the rate of change in saving with unit increase in income. Usually if the expenditure is fixed then extra income goes into savings. However that is not always the case. Can you think of situations when people spend more than save?

- **Excess Demand:** Conversely, if the equilibrium level of output is higher than the full employment level, it indicates that demand is greater than what can be produced at the full employment level. This situation is called excess demand and can result in long-term price increases as businesses struggle to meet the heightened demand.

Employment: Growth, Informalisation and Other Issues

People engage in various forms of work, from farming and factory jobs to office work and remote employment. Technology now allows for remote production of factory goods. Also, during the 2020-21 Covid-19 pandemic, many worked from home.

People work for a living and a sense of self-worth, contributing to the national economy and supporting dependents. **Mahatma Gandhi** emphasized education and training through various crafts.

> What I object to, is the 'craze' for machinery, not machinery as such. The craze is for what they call labour-saving machinery. Men go on 'saving labour' till thousands are without work and thrown on the open streets to die of starvation…
>
> **Mahatma Gandhi**

*Let us understand **different aspects of employment** in detail.*

Workers and Employment

- Employment encompasses **all economic activities** contributing to a country's **gross national product (GNP).**
- Workers include **individuals engaged in economic activities**, whether employed by an employer or self-employed.
- Even those temporarily unable to work due to various reasons are considered workers. This definition extends to those assisting primary workers.
- The **nature of employment in India is diverse**, with some working year-round and others seasonally. Many face issues like unfair wages.
- In India, the workforce in 2017-18 totalled approximately 471 million, with a higher proportion in rural areas.

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- About 77% are men, while women make up one-fourth of the rural workforce and one-fifth of the urban workforce.
- Women often perform **unpaid tasks** like cooking and farm labour, leading economists to argue they should also be considered workers.

Participation of People in Employment

- The **worker-population ratio** is a crucial indicator for assessing employment situations. It reveals the percentage of the population actively involved in producing goods and services.
- A **higher ratio** signifies greater workforce engagement, while **medium or low ratios** indicate a significant portion of the population not directly participating in economic activities.
- To calculate the worker-population ratio for India, we can divide the total number of workers by the country's population and multiply by 100.
- In India, about 35 out of every 100 persons are workers. Urban areas have a slightly lower ratio of around 34, while rural areas have a ratio of approximately 35 (Refer Figure 15.10).

Indicator	Rural			Urban			Rural + Urban		
	Male	Female	Person	Male	Female	Person	Male	Female	Person
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2022-23	78.0	40.7	59.4	71.0	23.5	47.7	76.0	35.9	56.0
2021-22	75.3	35.8	55.6	70.4	21.9	46.6	73.8	31.7	52.9
2020-21	75.1	35.8	55.5	70.0	21.2	45.8	73.5	31.4	52.6
2019-20	74.4	32.2	53.3	69.9	21.3	45.8	73.0	28.7	50.9
2018-19	72.2	25.5	48.9	68.6	18.4	43.9	71.0	23.3	47.3
2017-18	72.0	23.7	48.1	69.3	18.2	43.9	71.2	22.0	46.8

Note: *(ps+ss) determined considering both principal activity status and subsidiary economic activity status*

Fig 15.10: Worker Population Ratio (WPR) in usual status (ps+ss) for persons of age 15 years and above all-India

- This difference is due to **limited resources and opportunities in rural areas,** leading more people to enter the workforce.
- Urban areas offer diverse **employment opportunities**, with many pursuing education and seeking jobs suited to their qualifications and skills.
- In rural areas, economic conditions often require people to work, and there is a significant **gender disparity**, with more males engaged in economic activities.
- In urban areas, for every 100 urban females, only about 14 are working, while in rural areas, around 18 out of every 100 rural women participate in the labour market.

Fig. 15.11: Brick-making: a form of casual work.

- The **lower participation of women,** especially in urban areas, is attributed to **societal factors**. When men can earn higher incomes, families often discourage female members from working.
- Household activities performed by women are often not recognized as productive work, leading to the **underestimation of the number of women workers** in the country.

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Considering the valuable contributions made by women to household maintenance and farming, there is a question about whether their numbers should be included in the count of women workers.

Self-employed and Hired Workers

- The worker-population ratio does not provide information about **workers' social status** or **working conditions**. Instead, it helps us understand the proportion of the population actively participating in economic activities.
- To assess the **quality of employment** and the worker's position in an enterprise, it's necessary to consider their status within the enterprise.
- **Three examples from the construction industry** illustrate different statuses (Refer Figure 15.12).
  - **Self-Employed:** Workers who own and operate their own businesses for livelihood, like the cement shop owner, fall under this category. Approximately 52% of India's workforce is self-employed.
  - **Casual Wage Labourers:** These workers, like construction labourers, are engaged on a casual basis by others and receive remuneration for their work. They make up about 25% of India's workforce.
  - **Regular Salaried Employees:** Workers employed by someone or an enterprise and paid wages on a regular basis are categorized as regular salaried employees. This group represents 23% of India's workforce.

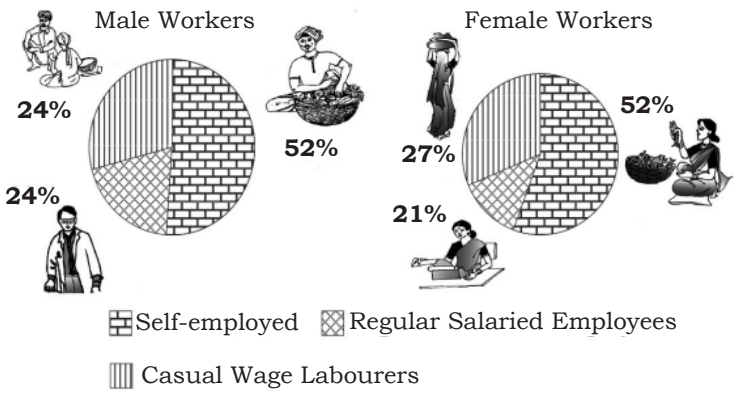

Fig. 15.12: Distribution of Employment.

- **Self-employment** is a significant source of livelihood for both men and women, accounting for over **50% of the workforce**.
- **Casual wage labour** is the second major source, slightly more prevalent among women (24-27%).
- **Regular salaried employment** is also notable, with 23% of men and 21% of women engaged in such jobs.
- The distribution of the workforce differs between rural and urban areas. Self-employed and casual wage labourers are more common in rural areas, while urban areas have a higher prevalence of self-employment and regular salaried jobs (Refer Figure 15.13).
- This variation is influenced by factors such as **land ownership** in rural areas and the **nature of enterprises** in urban areas, which require regular workers.

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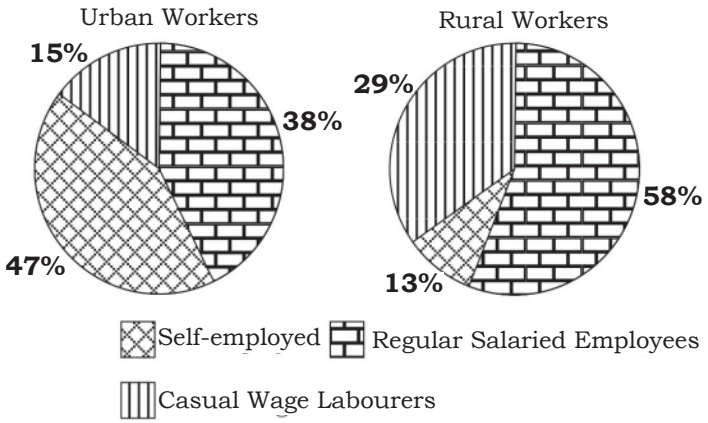

Fig. 15.13: Distribution of Employment by Region.

Employment In Firms, Factories and Offices

- During a country's economic development, there is a **shift in labour** from agriculture and related activities to industry and services. This process involves **rural-to-urban migration**.
- As development progresses, the industrial sector's share of total employment decreases, while the service sector experiences rapid growth.This shift can be observed by examining the distribution of workers across various industries.
- Economic activities are typically categorized into **eight industrial divisions: Agriculture, Mining and Quarrying, Manufacturing, Electricity, Gas and Water Supply, Construction, Trade, Transport and Storage, and Services.**
- *These divisions can be simplified into **three major sectors**:*
  - the **primary sector** (including Agriculture and Mining);
  - the **secondary sector** (including Manufacturing, Electricity, Gas and Water Supply, and Construction); and
  - the **service sector** (including Trade, Transport and Storage, and Services).
- In India, the primary sector is the primary source of employment for the majority of workers, while the secondary sector employs around 24% of the workforce, and the service sector employs about 31%.
- **Rural India relies heavily on the primary sector**, with approximately 60% of its workforce engaged in agriculture, forestry, and fishing.

Fig. 15.14: Garment workers: upcoming factory employment for women.

- About 20% of rural workers are involved in manufacturing and construction, while the service sector employs another 20%.
- In contrast, **urban areas prioritize the service sector**, with approximately 60% of urban workers engaged in this sector.
- The secondary sector provides employment for around one-third of the urban workforce.
- Both **men and women are concentrated in the primary sector**, with women's participation being particularly high.
- About 57% of the female workforce is employed in the primary sector, while less than half of male workers are in that sector (Refer Figure 15.15).

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Industrial Category	Place of Residence		Sex		Total
	Rural	Urban	Men	Female	
Primary Sector	59.8	6.6	40.7	57.1	44.6
Secondary Sector	20.4	34.3	26.5	17.7	24.4
Tertiary / Service Sector	19.8	59.1	32.8	25.2	31.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Fig. 15.15: Distribution of Workforce by Industry, 2017-2018

Growth and Changing Structure of Employment

- From 1950-2022, India experienced **positive GDP growth** that was higher than employment growth, although GDP growth exhibited fluctuations.
- The above figure highlights a disheartening development in the late 1990s when employment growth began declining, reaching levels similar to those seen in the early stages of planning.

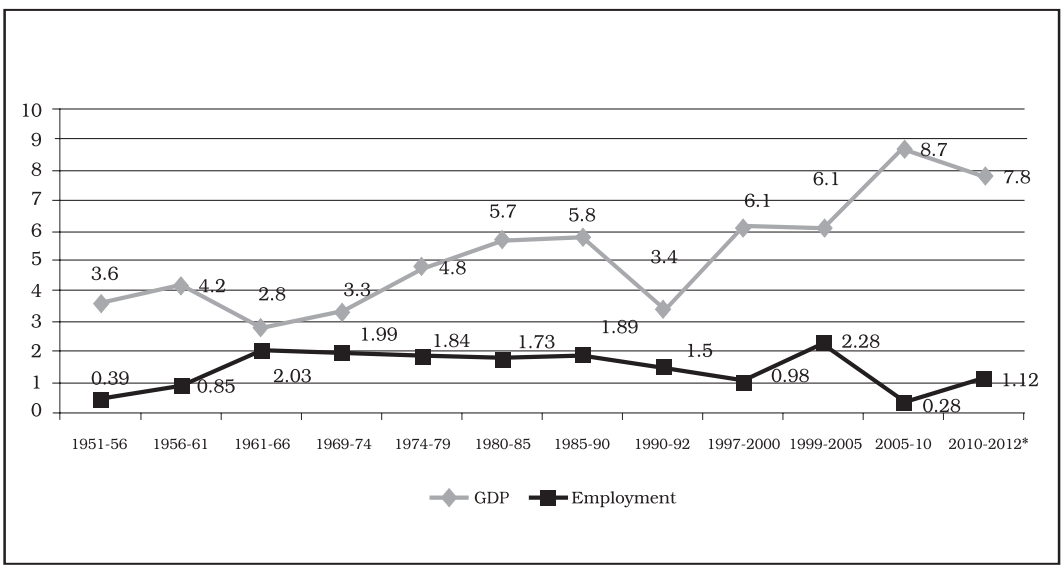

Fig 15.16: Growth of Employment and Gross Domestic Product, 1951–2012 (%).

- This period also witnessed a widening gap between GDP growth and employment, a phenomenon referred to as "**jobless growth**."
- Essentially, the Indian economy **produced more goods and services without generating proportionate employment opportunities**.
- India, being **primarily agrarian**, has a significant rural population dependent on agriculture as their main livelihood. Developmental strategies have aimed to reduce the proportion of people depending on agriculture.

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- The **distribution of the workforce across industrial sectors** indicates a substantial shift from agriculture to non-farm work.
- In 1972-73, approximately 74 percent of the workforce was engaged in the primary sector, which reduced to about 50 percent in 2011-12. The secondary and service sectors shares increased from 11 to 24 percent and 15 to 27 percent, respectively.
- Regarding employment status, over the last five decades (1972-2018), people have moved **from self-employment and regular salaried employment to casual wage work**, although self-employment remains a significant employment provider. This is referred to as the "**casualization of the workforce**."
- Additionally, there was a moderate rise in the share of regular salaried employees in 2021-22.

POINTS TO PONDER

Casualization of the workforce refers to gradual shift of workers from self-employment and regular salaried employment to casual wage work. There has been a growing trend of casualization of the workforce. Can you find out the factors that are acting as the pull factors towards casualization?

Employment Indicators (Labour Force participation Rate (LFPR), Worker Population Ratio (WPR) and Unemployment Rate (UR)) **(in percentage)**

Years	WPR			LFPR			UR		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
2017-18	69.3	18.2	43.9	74.5	20.4	47.6	6.9	10.8	7.7
2018-19	68.6	18.4	43.9	73.7	20.4	47.5	7.0	9.8	7.6
2019-20	69.9	21.3	45.8	74.6	23.3	49.3	6.4	8.9	6.9
2020-21	70.0	21.2	45.8	174.6	23.2	49.1	6.1	8.6	6.7
2021-22	70.4	21.9	46.6	74.7	23.8	49.7	5.8	7.9	6.3

Sector-wise Percentage Distribution of total Number of Estimated Workers according to Type of Worker and Gender **(in percentage)**

S.No.	Sectors	Self-Employed			Employees			Total Workers	
		M	F	Total	M	F	Total	M	F
1.	Manufacturing	1.78	0.70	2.48	76.14	21.38	97.52	77.92	22.08
2.	Construction	1.26	0.07	1.32	81.60	17.08	98.68	82.85	17.15
3.	Trade	3.12	1.05	4.16	73.56	22.27	95.84	76.68	23.32
4.	Transport	0.60	0.03	0.63	86.93	12.43	99.37	87.54	12.46
5.	Education	0.96	0.24	1.20	55.21	43.59	98.80	56.17	43.83
6.	Health	0.49	0.07	0.56	47.52	51.92	99.44	48.01	51.99
7.	Accommodation & Restaurants	4.57	2.10	6.67	72.75	20.58	93.33	77.32	22.68
8.	IT/BPOs	0.09	0.01	0.10	64.09	35.81	99.90	64.18	35.82
9.	Financial Services	0.75	5.67	6.43	58.22	35.35	93.57	58.98	41.02
	Total	**1.33**	**0.63**	**1.96**	**66.90**	**31.14**	**98.04**	**68.23**	**31.77**

Fig. 15.17

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Informalisation of Indian Workforce

- Despite seven decades of development planning in India with the objective of providing decent livelihoods, over half of the Indian workforce still relies on farming as their primary source of income.
- Economists argue that the **quality of employment in India has deteriorated** over the years, leading to questions about why some workers do not receive benefits like maternity leave, provident fund, gratuity, and pension, or why private sector workers earn less than their public sector counterparts.
- A small section of the Indian workforce enjoys regular income and the **protection of labour laws**. These workers form **trade unions** and negotiate with employers for better wages and **social security** measures.

Fig. 15.18: Road side vending: an increasing variety of informal sector employment.

The workforce can be classified into ***two categories***: workers in the **formal sector** (organized sector) and workers in the **informal sector** (unorganized sector).

- **Formal Sector:** It includes public-sector establishments and private-sector establishments with 10 or more hired workers. The workers enjoy social security benefits and generally earn higher wages.
- **Informal Sector:** This sector encompasses a wide range of workers, including farmers, agricultural labourers, owners of small enterprises, self-employed individuals without hired workers, and non-farm casual wage labourers who work for multiple employers. Workers in the informal sector do not enjoy the same level of social security, and their income can be irregular.

Formal Sector Employment

- The major employer in the formal sector in India is the **public sector**.
- In 2012, out of approximately 30 million formal sector workers, about 18 million workers were employed by the public sector.
- It's worth noting that men constitute the majority in the formal sector, with women making up only about one-sixth of the formal sector workforce.
- Economists have pointed out that the reform process initiated in the early 1990s resulted in a decline in the number of workers employed in the formal sector.
- These reforms included policies aimed at liberalizing the Indian economy, which had an impact on the structure of employment in the country.

- Developmental planning aimed to shift more workers into the formal sector as the economy grew. However, in reality, a large proportion of the workforce remains in the informal sector (Refer Figure 15.19).
- In 2011-12, only about **6% of the total workforce** in India was employed in the **formal sector**, while the rest, around **94%, belonged to the informal sector**.
- Gender-wise data for the same year showed that approximately 20% of formal sector workers and 30% of informal sector workers were women.
- The informal sector faces various challenges, including **outdated technology**, a lack of **government regulation**, and the **absence of social security measures**.

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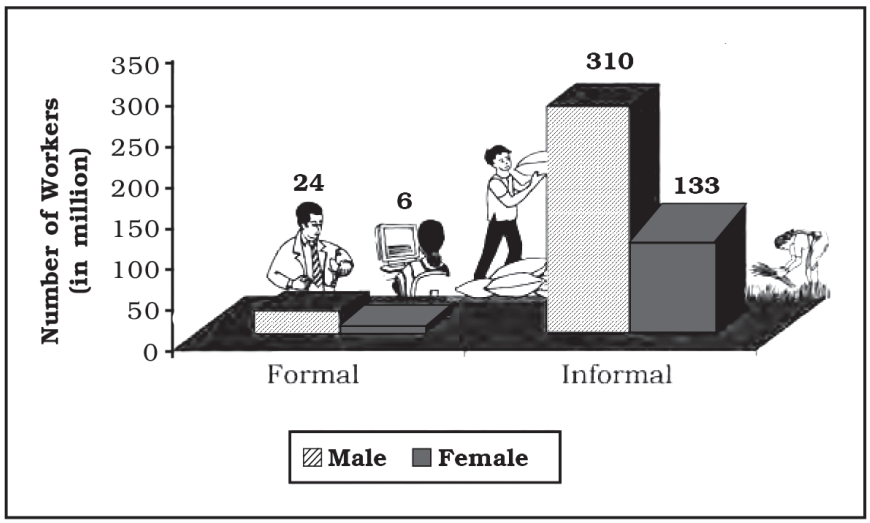

Fig. 15.19: Workers in Formal and Informal Sector, 2011-12.

- Workers in this sector often live in **impoverished conditions** and can be easily dismissed without compensation.
- Efforts have been made to modernize informal sector enterprises and provide social security measures for these workers, with the support of organizations like the **International Labour Organization (ILO)** and the Indian government.

Informalisation in Ahmedabad

- The city of Ahmedabad was once prosperous, primarily due to its more than **60 textile mills** that employed a labour force of **150,000 workers.**
- These workers enjoyed a degree of income security, including secure jobs with a living wage, coverage by social security schemes for health and old age, and the support of a **strong trade union** that not only represented them in disputes but also ran welfare programs for workers and their families.
- However, in the early 1980s, textile mills across the country, including Ahmedabad, began to close down.
- While in some places like Mumbai, the mill closures occurred rapidly, in Ahmedabad, this process was prolonged and extended over a decade.
- During this period, over 80,000 permanent workers and more than 50,000 non-permanent workers lost their jobs, pushing them into the informal sector.
- The consequences of this economic shift were profound. The city faced an **economic recession**, and there were public disturbances, particularly **communal riots**.
- A significant portion of the workforce, once considered part of the middle class, was now relegated to the informal sector, leading to poverty.
- The impact included widespread issues such as alcoholism and suicides, withdrawal of children from schools to work, and a host of other social challenges.

Fig. 15.20: Change in the balance of power in a house: an unemployed mill worker peeling garlic whereas his wife has a new job of beedi rolling.

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Unemployment

- The process of seeking employment can take **various forms** and
- People search for jobs through newspapers, rely on personal connections like friends and relatives, stand in specific areas in some cities to be hired for daily work, or visit factories and offices to submit their resumes and inquire about vacancies.
- Some individuals register themselves with **employment exchanges** to be notified about job openings.
- The National Statistical Office defines unemployment as a situation in which individuals who are not working actively seek work through various channels, including employment personal connections, or by directly expressing their willingness and availability to work under the prevailing conditions of work and remuneration.
- An **unemployed person**, according to economists, is someone who cannot secure employment for even one hour in half a day.
- Data on unemployment is collected from reports from the **Census of India,** reports from the **National Statistical Office** on the Employment and Unemployment Situation, annual reports from the **Periodic Labour Force Survey,** and data from **the Directorate General of Employment and Training** regarding registration with employment exchanges.

Fig. 15.21: Unemployed mill workers waiting for casual jobs.

Fig. 15.22: Sugarcane cutters: disguised unemployment is common in farm works.

Fig. 15.23: Dam construction work is a direct way of employment generation by the government

Types of Unemployment in India

In the Indian context, *there are different types of unemployment:*

Open Unemployment

- This is the situation where individuals actively seeking work are **unable to find any employment opportunities**.
- This is the most commonly understood form of unemployment.

Disguised Unemployment

- This type of unemployment is **prevalent in Indian farms**.
- It occurs when **more workers are employed in a task than are actually needed**.
- For example, a farmer may employ more workers than necessary for a task, even if fewer workers would suffice.
- It can result in **underutilization of labour resources**.

Seasonal Unemployment

- Seasonal unemployment occurs when people, particularly in rural areas, **migrate to urban areas** in search of employment during certain periods, such as the non-agricultural season.
- They **return to their villages** when agricultural work becomes available again.
- This type of unemployment is linked to the **seasonal nature of agricultural work**.

These various forms of unemployment highlight the complex dynamics of employment and labour force participation in India, where employment opportunities can be scarce or fluctuate with the seasons.

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Government and Employment Generation

The **Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)** of 2005 ensures 100 days of guaranteed wage employment to rural households willing to perform unskilled manual work. This scheme is one of the government's initiatives to provide employment opportunities in rural areas. Since independence, both the Union and State governments have been actively involved in generating employment and creating opportunities for employment in India.

*These can be broadly categorized as **direct** and **indirect** methods:*

Direct Employment Generation	➢ In this category, the **government directly employs people** in various administrative departments, runs industries, hotels, and transport companies, thereby providing direct employment opportunities to workers. ➢ When **government enterprises** increase their production of goods and services, it leads to an increase in employment within these enterprises. ➢ Additionally, **private companies** that source raw materials from government enterprises may also increase their production and employment levels. ➢ This represents the indirect generation of employment opportunities due to government initiatives in the economy.
Indirect Employment Generation	➢ Many government programs aimed at poverty alleviation also focus on employment generation. ➢ These programs are often referred to as **employment generation programs.** ➢ They aim to provide not only employment but also essential services, such as primary health care, primary education, access to rural drinking water, nutrition support, assistance for acquiring income-generating assets, community asset development through wage employment, housing and sanitation construction, rural road construction, and reclamation of wastelands and degraded lands.

These government initiatives play a crucial role in addressing **unemployment and poverty** by creating job opportunities and providing essential services to citizens.

Poverty as a Challenge

- Poverty is a pervasive issue in India, and it takes various forms in both rural and urban areas.
- Poverty can be seen in the lives of landless labourers in villages, overcrowded slums in cities, daily wage labourers on construction sites, child labourers in roadside dhabas, and beggars etc.
- In India, poverty is widespread, with approximately every fifth person living in poverty. This translates to around **27 crore people living in poverty** as of 2011-12.
- Poverty entails hunger and a lack of shelter and it is also a condition where parents are unable to send their children to school, and where sick individuals cannot afford medical treatment.
- Poverty signifies a lack of access to clean water and sanitation facilities, as well as the **absence of a regular job** that provides a minimum standard of living.

Poverty as Seen by Social Scientists

- ➢ Poverty is a multifaceted issue, and social scientists approach it through a range of indicators.
- ➢ Traditionally, indicators related to **income and consumption levels** have been used to measure poverty.
- ➢ However, contemporary approaches to understanding poverty also consider other social indicators, such as **illiteracy rates, malnutrition** leading to weakened immunity, limited access to **healthcare, job opportunities, safe drinking water, sanitation,** and more.
- ➢ The analysis of poverty has expanded to include concepts of social exclusion and vulnerability, which are increasingly prevalent in contemporary discussions of poverty.

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- Most importantly, it entails living with a sense of **helplessness**, where poor individuals are subjected to **mistreatment** in various aspects of life, whether on farms, in factories, government offices, hospitals, railway stations, and more.
- One of the greatest challenges India has faced since gaining independence has been the task of **lifting millions of its citizens out of abject poverty**.
- Mahatma Gandhi consistently emphasized that India would truly achieve independence only when its poorest citizens were liberated from the shackles of human suffering.

Social exclusion and vulnerability *are important concepts in understanding poverty and its various dimensions. Let us understand them in detail:*

Social Exclusion	➢ This concept recognizes that poverty is not solely about **lacking material resources** but also about being **excluded from social and economic opportunities** that others enjoy. ➢ It is the process by which individuals or groups are **marginalized or excluded** from essential facilities, benefits, and opportunities in society. ➢ Social exclusion can be both a **cause and a consequence** of poverty. ➢ For example, in the context of India, the **caste system** historically excluded certain groups from equal opportunities, contributing to their poverty. ➢ Social exclusion can have more profound effects than merely having a low income, as it affects an individual's or group's access to education, healthcare, employment, and other aspects of a dignified life.
Vulnerability	➢ **Vulnerability to poverty** refers to the increased likelihood that certain communities or individuals will **become poor or remain in poverty** in the future. ➢ It takes into account various factors that make some groups or people more susceptible to poverty. ➢ Vulnerability is determined by the options available to these communities or individuals in terms of assets, education, health, and job opportunities. ➢ It also considers the **greater risks these groups face** during natural disasters, economic downturns, or other adverse events. ➢ Vulnerability essentially describes the **likelihood of being more adversely affected than others** when faced with challenges that impact everyone, such as a natural disaster or an economic crisis.

Both social exclusion and vulnerability highlight that **poverty is not just about income levels but also about disparities** in opportunities, resources, and the ability to cope with adverse situations. Addressing poverty comprehensively requires considering these broader dimensions and the specific circumstances of marginalized and vulnerable groups.

POINTS TO PONDER

Both social exclusion and vulnerability highlight that poverty is not just about income levels but also about disparities in opportunities, resources, and the ability to cope with adverse situations. Then how right is it to measure poverty in economic terms based on income? Can you think of different ways to analyze poverty? Have you heard of Multidimensional poverty?

Causes of Poverty

The causes of widespread poverty in India are complex and multifaceted, with historical, economic, social, and cultural factors playing significant roles.

Let us study some ***key factors contributing to poverty*** *in India:*

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Colonial Legacy	➢ India's **low level of economic development under British colonial rule** had long-lasting effects on its economy. ➢ The policies of the colonial government discouraged the growth of indigenous industries and handicrafts, which were a major source of livelihood for many.
Population Growth	➢ India has experienced **rapid population growth** over the years. ➢ The combination of low economic growth and high population growth resulted in a **low per capita income**. ➢ This made it challenging to provide employment opportunities for the growing population.
Limited Industrialization	➢ While the **Green Revolution** and **agricultural modernization** created job opportunities in the agriculture sector in some regions, **industrialization** was limited in its capacity to absorb the workforce. ➢ Many job seekers in cities had to settle for low-paying and informal jobs.
Urbanization and Slums	➢ The **lack of job opportunities** in cities led to the growth of urban poverty. ➢ People who couldn't find stable jobs ended up working as rickshaw pullers, vendors, construction workers, or domestic servants. ➢ The **irregular and small incomes** earned in these occupations made it difficult for them to afford proper housing, resulting in the proliferation of urban slums.
Income Inequality	➢ India has significant income inequalities, with **unequal distribution of land and resources** being a major contributing factor. ➢ **Land reforms** aimed at redistributing assets in rural areas have not been effectively implemented in many states, perpetuating land concentration in the hands of a few.
Socio-cultural Factors	➢ **Social obligations and religious ceremonies** in India often require people, including the poor, to spend a substantial amount of money. ➢ This can lead to **financial strain**, especially for those with limited resources.
Indebtedness	➢ Poverty and lack of savings force many individuals to **borrow money** for various purposes, including agricultural inputs. ➢ When they are **unable to repay their debts** due to poverty, they fall into a **cycle of indebtedness,** which can exacerbate their economic struggles.

Measurements of Poverty

Poverty Line

- The concept of the "poverty line" is central to discussions and measurements of poverty. It is a common method used to **assess poverty**, primarily **based on income or consumption levels**.
- Essentially, a person or household is considered poor if their income or consumption falls below a specified "**minimum level**" required to fulfill their basic needs.
- The determination of the poverty line is influenced by various factors, including the **country's level of development** and its prevailing **social norms** and **economic conditions**.
- What constitutes basic needs can vary significantly across different times and places. For instance, owning a car may be seen as a luxury in some countries but a necessity in others.

Poverty Line in India

- In India, the poverty line is calculated by considering the **minimum requirements** for food, clothing, footwear, fuel, light, education, medical care, and more. These requirements are measured in physical quantities and are multiplied by their respective prices in rupees.

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- The present formula for determining the **food requirement** is based on the **desired calorie intake**, with different calorie needs for various age groups, sexes, and types of work.
- In rural areas, the accepted average calorie requirement in India is 2400 calories per person per day, while in urban areas, it is 2100 calories per person per day.
- The monetary expenditure needed to meet these calorie requirements through food grains and other items is revised periodically to account for rising prices.
- For example, in 2011-12, the poverty line was set at Rs 816 per month for rural areas and Rs 1000 per month for urban areas. The higher amount for urban areas reflects the generally higher prices of essential products in cities.

Organizations Calculating Poverty Line

- These poverty line estimates are conducted through sample surveys, usually **every five years**, by organizations like the **National Sample Survey Organisation (NSSO)** in India.
- However, for international comparisons, organizations like the **World Bank** often use a standardized poverty line, such as the **minimum availability of $1.90 per person per day** (2011, purchasing power parity), to assess global poverty levels across developing countries. This uniform standard allows for cross-country comparisons of poverty rates.

Poverty Estimates

- The data presented in the above figure demonstrates a significant reduction in poverty ratios in India over the years (Refer Figure 15.24). *Here's a summary of the trends:*

	Poverty ratio (%)			Number of poor (in millions)		
Year	**Rural**	**Urban**	**Total**	**Rural**	**Urban**	**Combined**
1993-94	50	32	45	329	75	404
2004-05	42	26	37	326	81	407
2009-10	34	21	30	278	76	355
2011-12	26	14	22	217	53	270

Fig. 15.24: Estimates of Poverty in India

  - In 1993-94, the poverty ratio was approximately 45 percent.
  - By 2004-05, it had declined to 37.2 percent.
  - Further progress was made, with the poverty ratio dropping to about 22 percent in 2011-12.
- These trends indicate substantial progress in reducing poverty in India during this period. If this trajectory continues, it is expected that the percentage of people living below the poverty line could decrease to **less than 20 percent** in the coming years.
- Furthermore, the data reveals that not only did the poverty ratio decrease, but also the number of people living in poverty reduced significantly.
- For instance, the number of poor individuals decreased from 407 million in 2004-05 to 270 million in 2011-12.
- This implies an **average annual decline of 2.2 percentage points** in the number of poor people during the period from 2004-05 to 2011-12.

These figures illustrate the ongoing efforts and policies aimed at reducing poverty in India and suggest that significant progress has been made in this regard over the years.

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Different Dimensions of Poverty

Vulnerable Groups

The data presented in this figure highlights the fact that the proportion of people below the poverty line in India varies significantly across different social groups and economic categories (Refer Figure 15.25). Here's a summary of the key findings:

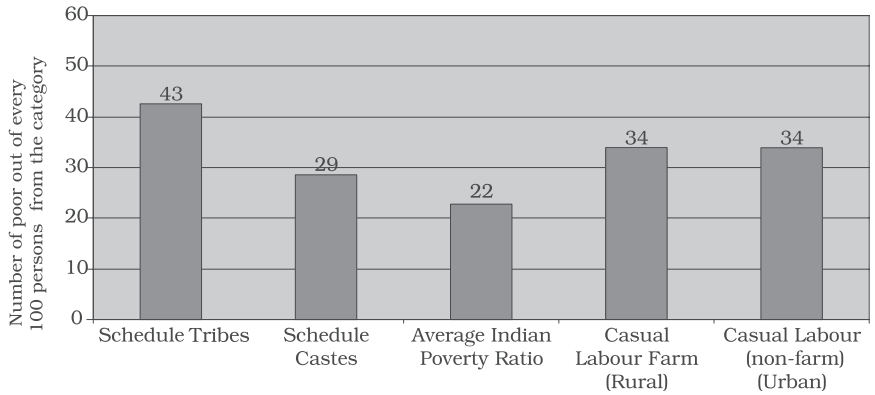

Fig. 15.25: Poverty in India 2011–12: Most Vulnerable Groups.

- **Scheduled Castes and Scheduled Tribes:** These social groups are particularly vulnerable to poverty. Approximately 43 percent of Scheduled Tribes and 29 percent of Scheduled Castes are living below the poverty line. This indicates a higher incidence of poverty among these communities compared to the national average of 22 percent.
- **Rural Agricultural Labour Households:** In rural areas, around 34 percent of agricultural labour households are below the poverty line. This signifies a substantial level of poverty among this group.
- **Urban Casual Labour Households:** In urban areas, about 34 percent of casual labour households are living in poverty. This highlights the economic challenges faced by urban casual laborers.

Social Disparities in Poverty Levels

- It is important to note that while there has been a decline in poverty levels in the 1990s for most of these vulnerable groups, the prevalence of poverty remains a significant concern.
- The double disadvantage of being both **economically vulnerable** and **belonging to socially disadvantaged groups**, such as Scheduled Castes and Scheduled Tribes, underscores the severity of the issue.
- Furthermore, within poor families, there is often **inequality in the distribution of resources**, which can result in certain family members, like women, the elderly, and female infants, having limited access to these resources.
- This **intra-household inequality** can exacerbate the hardships faced by these marginalized family members.

These disparities in poverty levels across social groups and economic categories highlight the need for targeted policies and interventions to address the specific challenges faced by vulnerable populations in India.

Inter-State Disparities

Inter-state disparities in poverty levels are a significant issue in India. The proportion of people living in poverty varies widely from one state to another, and this reflects the **diverse economic and social conditions** across different regions of the country (Refer Figure 15.26).

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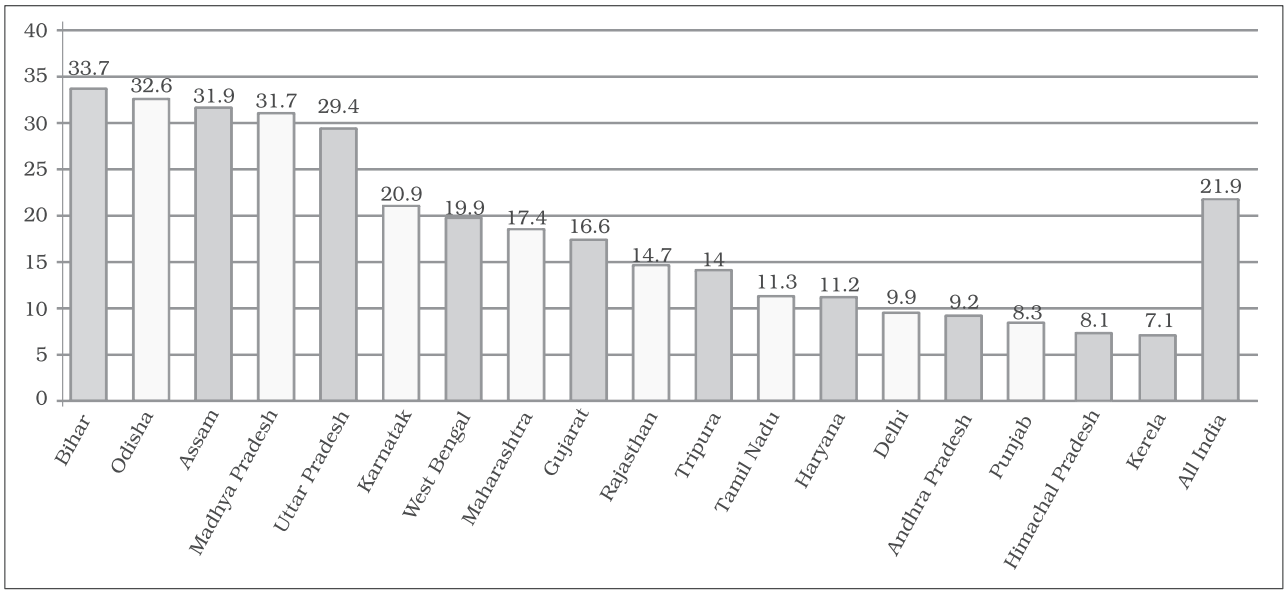

Fig. 15.26: Poverty Ratio in Selected Indian States, (As per 2011 Census).

*Here are some **key points related to inter-state disparities** in poverty:*

- **Regional Variation:** Poverty levels are not uniform across India. Some states have higher poverty rates than the national average, while others have lower rates.
- **High-Poverty States:** States like Bihar, Odisha, Madhya Pradesh, Uttar Pradesh, and Assam have poverty rates that are above the national average.
- **Rural-Urban Disparities:** In several high-poverty states, urban poverty is also a significant concern. This indicates that poverty also affects urban populations in states like Odisha, Madhya Pradesh, Bihar and Uttar Pradesh.
- **Agricultural Growth:** States like Punjab and Haryana have achieved poverty reduction through high agricultural growth rates.
- **Successful States:** Some states, such as Kerala, Maharashtra, Andhra Pradesh, Tamil Nadu, Gujarat, and West Bengal, have been relatively successful in reducing poverty. These states have implemented various strategies, including investments in human resource development, land reforms, and public distribution systems, to address poverty.

Efforts to alleviate poverty should take into account the inter-state disparities in poverty and **region-specific development strategies** should be implemented.

Global Poverty Scenario

The reduction of extreme economic poverty globally is a significant achievement, but it is important to note that there are substantial regional differences in the progress made in poverty reduction(Refer Figure 15.27).

*Here are some **key points regarding global poverty** trends:*

- **Reduction in Global Poverty:** The proportion of people living in extreme economic poverty, defined by the **World Bank** as living on less than $1.90 per day, has decreased from 36 percent in 1990 to 10 percent in 2015.

Country	% of Population below $1.90 a day (2011ppp)
1. Nigeria	39.1 (2018)
2. Bangladesh	14.3 (2016)
3. India	22.5 (2011)
4. Pakistan	4.4 (2018)
5. China	0.5 (2016)
6. Brazil	4.6 (2019)
7. Indonesia	2.7 (2019)
8. Sri Lanka	0.9 (2016)

Fig. 15.27: Poverty: Head Count Ratio Comparison among Some Selected Countries.

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- **Regional Variations:** Some regions have experienced rapid poverty reduction, while others have seen slower progress.
- **China and Southeast Asia:** China and several Southeast Asian countries have achieved remarkable success in reducing poverty due to rapid economic growth and investments in human resource development. China's poverty rate declined from 88.3 percent in 1981 to 0.6 percent in 2019.
- **South Asia:** Countries in South Asia, including India, Pakistan, Sri Lanka, Nepal, Bangladesh, Bhutan have also made progress in reducing poverty, with the poverty rate declining from 34 percent in 2005 to 15.2 percent in 2014.
- **Sub-Saharan Africa:** Poverty has been declining in Sub-Saharan Africa, the poverty rate decreased from 51 percent in 2005 to 40.2 percent in 2018.
- **Latin America:** Poverty reduction in Latin America has been relatively successful, with the poverty rate declining from 10 percent in 2005 to 4 percent in 2018.
- **Former Socialist Countries:** Some former socialist countries like Russia have experienced a resurgence of poverty, even though it was officially considered non-existent in the past.

Sustainable Development Goals of the United Nations aim to **eradicate all forms of poverty by 2030**, emphasizing the importance of continued efforts to reduce poverty globally. Achieving the goal will require sustained efforts, international cooperation, and targeted policies to address the specific challenges faced by different regions.

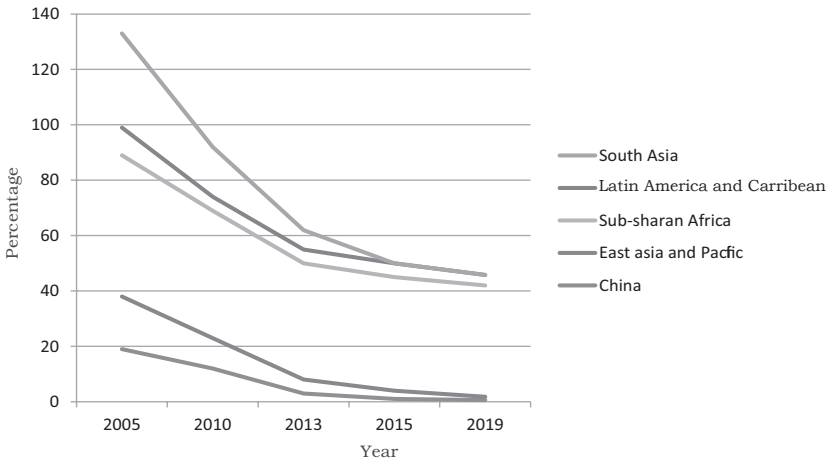

Fig. 15.28: Share of people living on $1.90 a day, 2005–2019.

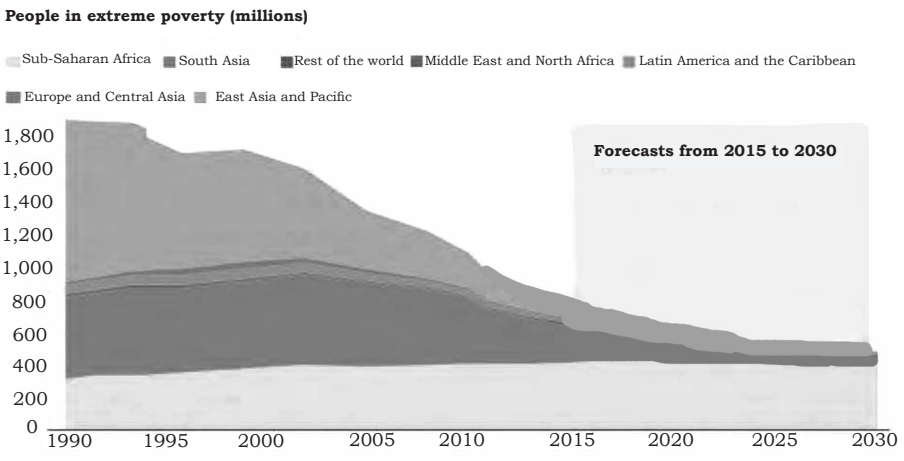

Fig. 15.29: Number of poor by region ($ 1.90 per day) in millions.

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Anti-Poverty Measures

The Indian government has adopted a multifaceted approach to address and alleviate poverty in the country. This approach is based on **two key strategies**: promoting economic growth and implementing targeted anti-poverty programs.

Promoting Economic Growth:

- India has experienced significant economic growth since the 1980s, with the growth rate increasing to around **6 percent annually**.
- This economic growth has played a crucial role in reducing poverty by creating more employment opportunities and providing the resources needed for investment in human development, such as education and healthcare.

Flagship programmes of the Government that have the potential to generate productive employment opportunities

S.No.	Programmes	Ministries	Objective
1.	Digital India	Ministry of Electronics and Information Technology	Ensuing Broadband connectivity at village level, improved access to services through IT enabled platforms, greater transparency in Government process and increased indigenous production of IT hardware and software for exports and improved domestic availability.
2.	Atal Mission for Rejuvenation and Urban Transformation (AMRUT)	Ministry of Housing and Urban Affairs	Providing basic services to households and build amenities in cities which will improve the quality of life for all.
3.	Make in India	DPIIT, Ministry of Commerce & Industry	To facilitate investment, foster innovation, enhance skill development, project intellectual property and build best in class manufacturing infrastructure.
4.	Smart Cities	Ministry of Housing & Urban Affairs	To promote cities that provide core infrastructure and give a decent quality of life to its citizens, a clean and sustainable environment and application of 'Smart' Solutions.
5.	Shyama Prasad Mukherji Rurban Mission	M/o Rural Development	To deliver integrated project based infrastructure in the rural areas, including development of economic activities and skill development.
6.	National Industrial Corridor Authority	Ministry of Finance	To coordinate the development of the industrial corridors, with smart cities linked to transport connectivity, drive India's growth in manufacturing and urbanization.
7.	Stand up India Scheme	Department of Financial Services, Ministry of Finance	To facilitates bank loans to SC/ST/ woman borrower for setting up a new enterprise in manufacturing, trading or services sector.
8.	Start Up India	DPIIT, Ministry of Commerce & Industry	To empower startups to grow through innovation and design.

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S.No.	Programmes	Ministries	Objective
9.	Pradhan Mantri Awas Yojana – (PMAY)	Ministry of Housing & Urban Affairs	To provide Central Assistance to the implementing agencies through States/Union Territories (UTs) and Central Nodal Agencies (CNAs) for providing houses to all eligible families/ beneficiaries against the validated demand for housing
10.	Swachh Bharat Mission-Grameen	Ministry of Jal Shakti	To accelerate the efforts to achieve universal sanitation coverage and to put focus on sanitation.
11.	Swachh Bharat Mission - Urban (SBM-U)	Ministry of Housing & Urban Affairs	To make urban India free from open defecation and achieving 100% scientific management of municipal solid waste in 4,041 statutory towns in the country.
12.	Smart City Mission	Ministry of Housing & Urban Affairs	To promote sustainable and inclusive cities that provide core infrastructure and give a decent quality of life to its citizens, a clean and sustainable environment and application of 'Smart' Solutions.
13.	Atal Mission for Rejuvenation and Urban Transformation (AMRUT)	Ministry of Housing & Urban Affairs	Providing basic services to households and build amenities in cities which will improve the quality of life for all, especially the poor and the disadvantaged is a national priority.
14.	Pradhan Mantri Garib Kalyan Yojana (PMGKY)	Ministry of Labour and Employment	Providing employment in EPFO registered establishments during post Covid period.

The Challenges Ahead

- Despite these initiatives, the effectiveness of poverty alleviation programs in India has been mixed. Challenges include **improper implementation, targeting the right beneficiaries,** and addressing **issues of overlap** among various schemes.
- It is crucial to ensure that the benefits of these programs reach the deserving poor.
- Reducing poverty in India remains a complex and ongoing challenge, but these strategies and programs are essential steps toward addressing the issue and improving the living conditions.

Addressing poverty in India requires comprehensive strategies including policies aimed at **economic development and employment generation**. Additionally, **addressing income inequality** and **promoting sustainable economic growth** are essential for long-term poverty reduction.

Further, many scholars argue for a broader concept of poverty, often referred to as "**human poverty**," which takes into account various dimensions beyond just income. Human poverty considers factors like education, shelter, healthcare, job security, self-confidence, freedom from discrimination, and more. As societies develop and standards of living improve, the definition of what constitutes poverty evolves.

Conclusion

Eradicating poverty is a dynamic process, and the target continually shifts. While providing a **minimum necessary income to all** is an important goal, there are larger challenges ahead, such as

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ensuring access to healthcare, education, and job security for all, as well as achieving gender equality and dignity for the poor. These challenges require **sustained efforts and a holistic approach** to addressing the multifaceted nature of poverty in India.

Glossary

- **Marginal propensity to consume (MPC):** It is the change in consumption per unit change in income. It is denoted by *c* and is equal to $\Delta C/\Delta Y$.
- **Marginal propensity to save (MPS):** It is the change in savings per unit change in income. It is denoted by s and is equal to $1-c$. It implies that $s + c = 1$.
- **Average propensity to consume (APC):** It is the consumption per unit of income i.e., C/Y.
- **Average propensity to save (APS):** It is the savings per unit of income i.e., S/Y.
- **Poverty Line:** The poverty line is a threshold below which individuals or families are considered to be living in poverty. It is often defined in terms of a minimum level of income or consumption necessary to meet basic needs.
- **Per Capita Income:** Per capita income is the average income earned by each individual in a specific area (such as a country or region) over a given period, usually a year. It is calculated by dividing the total income of the area by its population.
- **Head Count Ratio (HCR):** The head count ratio is a measure of poverty that represents the proportion of a population living below the poverty line.
- **Scheduled Caste (SC) and Scheduled Tribe (ST):** These are social groups in India that have historically faced social and economic disadvantages due to discrimination. Special provisions and affirmative action programs are designed to uplift these groups.
- **Rural Agricultural Labourers:** These are individuals who work as wage labourers in agricultural activities, often on a daily or seasonal basis, without owning land.
- **Urban Casual Labourers:** Urban casual labourers are individuals who work in cities or urban areas on a temporary or intermittent basis, often in low-paying and informal jobs.
- **Green Revolution:** The Green Revolution refers to a series of initiatives and technological advancements in agriculture that led to increased crop yields and food production, particularly in the 1960s and 1970s.
- **Debt Indebtedness:** It refers to the state of being in debt or having financial obligations that are difficult to repay.
- **Human Poverty:** Human poverty is a broader concept of poverty that extends beyond income or material well-being. It encompasses various dimensions of well-being, including education, healthcare, shelter, and social inclusion.
- **Empowerment:** Empowerment refers to the process of enabling individuals or groups to gain control over their lives, make choices, and exercise their rights. In the context of poverty, it often involves increasing the capacity of marginalized communities to improve their socio-economic status.
- **Gender Equality**: Gender equality is the principle of providing equal opportunities, rights, and treatment to individuals regardless of their gender. It aims to eliminate discrimination and promote fairness between genders.

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16 Rural Development

Bibliography: This chapter encompasses the summary of Chapters 5 and 8 of Class XI NCERT (Indian Economic Development) and Chapters 1 and 4 of Class IX NCERT (Economics)

Introduction

Mahatma Gandhi once said that the real progress of India did not mean simply the growth and expansion of industrial urban centres but mainly the development of the villages. In this chapter, we will look into the significant aspects of rural development with the help of a case study on the village Palampur. Further, we will delve into concerns regarding food security and India's measures in this regard. At last, we will study the developmental aspects of 3 emerging economies: India, China & Pakistan.

The story of Palampur, an imaginary village, serves as a backdrop to explore various production activities in rural India. Agriculture is the primary production activity in most Indian villages, while non-farm activities like small-scale manufacturing, transportation, and shop-keeping complement these agricultural endeavours. In the following discussion, we will delve into both types of activities after establishing a basic understanding of production.

The Story of Village Palampur

Palampur, a well-connected village, is linked to neighbouring areas via a reliable all-weather road. This road accommodates various modes of transportation, ranging from traditional bullock carts and tongas to modern vehicles like motorcycles, jeeps, tractors, and trucks. The village comprises around 450 families from diverse castes, with the upper-caste families owning the majority of the land and residing in brick houses. In contrast, the SCs (Dalits) form one-third of the population and inhabit smaller houses, some made of mud and straw. Most houses have access to electricity, which is used for various purposes, including powering tube wells and small businesses. Palampur boasts two primary schools, one high school, a government-run primary health centre, and a private dispensary for medical treatment. As compared to nearby villages, Palampur has a relatively well-developed infrastructure, including roads, transportation, electricity, education, and healthcare facilities.

Organization of Production

The aim of production is to create desired goods and services, and this process relies on four key requirements:

- **Land and Natural Resources:** It includes land and other natural resources **like water, forests, and minerals.**
- **Labour:** The second requirement is the workforce or labour, which can vary from highly educated individuals for certain tasks to manual labourers who contribute to production.

Figure 16.1: In the picture, identify the land, labour and fixed capital used in production.

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- **Physical Capital (Capital):** It comprises physical capital, which encompasses various inputs used throughout the production process. It includes:
  - **Tools and machines**, ranging from simple tools like a plough to advanced machineries like generators and computers. These are known as **fixed capital** (can be used in production over many years).
  - **Raw materials and money in hand** are necessary for the production process. These are known as **working capital** and are consumed during production.
- **Human Capital:** There is also a fourth requirement, which is **knowledge and enterprise,** needed to effectively combine land, labour, and physical capital for production. This is referred to as human capital.

Every **production process involves** the organisation of these factors: **land, labour, physical capital (capital), and human capital**. These factors are collectively known as the **factors of production**.

Farming in Palampur

- **Primary Occupation:** Farming is the primary source of livelihood for the majority of the population, with **75% of the people** engaged in **farming activities**, including both farmers and farm labourers.
- **Constraints on Land:** Village faces a constraint in expanding its farm production due to limited cultivable land. Since 1960, there has been no increase in the land area under cultivation.
- **Crop Rotation:** Farmers practice crop rotation to maximise agricultural output. Farmers grow jowar and bajra in the rainy season (kharif) which are also used as cattle feed. It is followed by the cultivation of potatoes between October and December. In the winter season (rabi), fields are sown with wheat. After keeping enough for the family, the surplus is sold in the market. A part of the land area is also devoted to sugarcane which is harvested once every year.
- **Irrigation:** A well-developed irrigation system, powered by electricity, has enabled multiple cropping in the village. Tubewells have replaced traditional Persian wheels for a more efficient water supply.
- **Multiple Cropping:** Multiple cropping, or growing more than one crop in a year on the same land, is a common practice in villages and is essential for increasing production.
- **Green Revolution in the 1960s:** The introduction of **High Yielding Variety (HYV) seeds**, along with irrigation, chemical fertilisers, and pesticides, led to **significant increase in crop yields**, particularly wheat. Farmers of Punjab, Haryana, and Western Uttar Pradesh were the first to try out the modern farming method in India (Refer to Figure 16.3). The farmers in these regions set up tube wells for irrigation and made use of HYV seeds, chemical fertilisers, and pesticides in farming. Some of them bought farm machinery, like tractors and threshers, which made ploughing and harvesting faster. They were rewarded with high yields of wheat.

Do You Know?

The **standard unit of measuring land** is **hectare,** though in the villages we may find land area being measured in local units such as **bigha, guintha,** etc. One hectare equals the area of a square with one side measuring 100 metres.

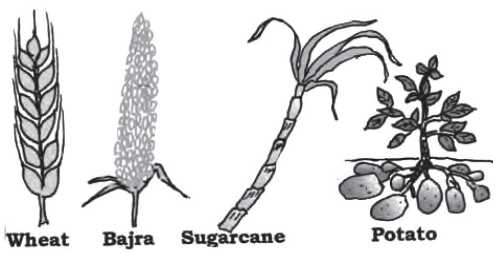

Figure 16.2: Different Crops

Year	Cultivated Area (in Million crores)
1950-51	132
1960-61	186
2000-01	186
2010-11 (P)	198
2011-12 (P)	196
2012-13 (P)	194
2013-14 (P)	201
2014-15 (P)	198
2015-16 (P)	197
2016-17 (P)	200

Table 16.1: Cultivated area over the years

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- **Sustainable Farming:** Modern farming methods have raised concerns about the **depletion of soil fertility and groundwater levels.** Sustainable farming practices are essential to **maintain long-term agricultural productivity**.
- **Land Distribution:** Land distribution in the village varies, with some families owning small plots and others cultivating larger areas. Around one-third of the families are landless, primarily belonging to the Dalit community (Refer to Figure 16.4 to understand the distribution of cultivated area and number of farmers).
- **Labour:** Labor is a crucial factor in farming, and many small farmers engage in farming activities with their families. Larger farmers hire farm labourers, often from landless or small farming families.
- **Capital in Farming:** Modern farming methods require significant capital investment, and small farmers often need to borrow money at high interest rates to arrange for capital. The rate of interest on such loans is very high. They are put in great distress to repay the loan. In contrast to the small farmers, the medium and large farmers have their own savings from farming. They are thus able to arrange for the capital needed.
- **Sale of Surplus Produce:** Farmers sell surplus agricultural produce in the market, with medium and large farmers supplying most of the surplus. They save some of their earnings to invest in capital for future farming seasons or other non-farm activities.

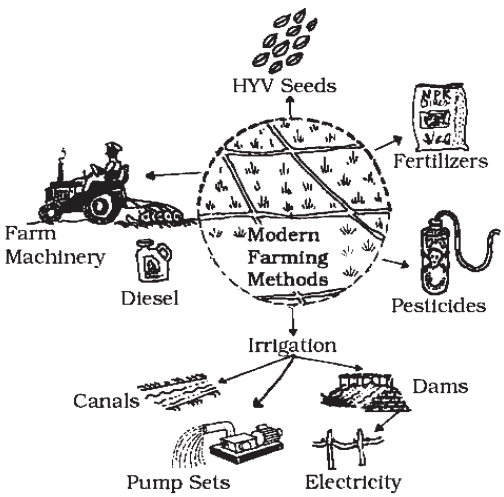

Figure 16.3 - Modern Farming Methods: HYV seeds, chemical fertilizer etc.

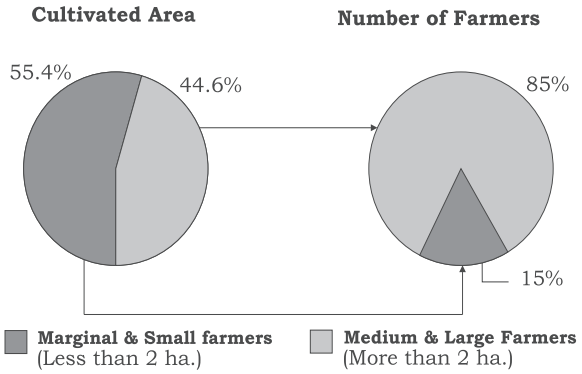

Figure 16.4 - Distribution of Cultivated Area and Farmers

Non-Farm Activities in Palampur

Only 25 percent of the people working in Palampur are engaged in activities other than agriculture.

Dairy Farming:

- Dairy farming is a common activity in the village, where people feed their buffalos on locally grown grass, jowar, and bajra. Milk is sold in nearby Raiganj, and traders from Shahpur operate collection and chilling centres there to transport milk to distant towns and cities.

Glimpse into Non-Farm Activities in Palampur

Mishrilal has modernised sugarcane processing in Palampur by using an electric sugarcane crushing machine. He processes sugarcane into jaggery and sells it to traders in Shahpur, making a small profit.

Kareem recognized the demand for computer education in Palampur due to increased college attendance in Shahpur. He set up a computer class centre with two local women who had computer application degrees, attracting high school students.

Kishora, formerly a farm labourer, improved his family's income by taking a cheap loan from a government program. He has purchased a buffalo, sells its milk, and uses it for transporting various goods. Kishora also earns from occasional transport work, significantly increasing his income.

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Small-Scale Manufacturing:

Palampur has small-scale manufacturing activities involving simple production methods and family labour. Farmers are engaged in activities like **sugarcane processing, jaggery making, etc**.

Shopkeepers:

- Shopkeepers play a role in trade in Palampur. They purchase various goods from wholesale markets in cities and sell them in the village. These **small general stores** offer a range of items like rice, wheat, sugar, tea, oil, biscuits, soap, toothpaste, batteries, candles, and stationery. Some families near the bus stand also run **small shops** selling food items.

Transport Sector:

- The transport sector in Palampur is diverse and includes rickshaw pullers, tonga drivers, jeep and tractor operators, truck drivers, bullock carts and bogey operators. They transport people and goods, earning income in return. Over the years, the number of people involved in the transport sector has grown significantly.

Thus, the story of Palampur provides a glimpse of rural life. This helps to plan and study various aspects of rural development.

Rural Development

Rural development in India involves various aspects that require attention and fresh initiatives for improving the **overall development of rural areas.** These areas include:

- **Human Resource Development:** Efforts are needed to enhance human resources, with a focus on **female literacy, education, and skill development**. Health-related aspects such as **sanitation and public health** are also essential components.
- **Land Reforms:** Addressing issues related to land **ownership, distribution, and utilisation** is crucial for rural development.
- **Productive Resource Development:** It is vital to develop productive resources in each locality, including initiatives to increase agricultural productivity and diversify into non-farm activities such as food processing.
- **Infrastructure Development:** Rural areas require infrastructure development, including access to electricity, irrigation, credit facilities, marketing opportunities, transportation (including road construction), and facilities for agricultural research and extension.
- **Poverty Alleviation:** Special measures are required to alleviate poverty and improve the living conditions of marginalised populations. Access to productive employment opportunities is a key aspect.

Issue of Stagnant Growth of the Agriculture Sector

- The challenges faced by the agriculture sector in India include a **declining contribution to GDP and stagnant employment.**
- Additionally, after the economic reforms of 1991, the agriculture sector's growth rate slowed to around 3 percent per year from 1991 to 2012, which was lower than in previous years.
- Recently, this sector has experienced volatility, with the **Gross Value Added (GVA)** growth rate in 2014-15 being less than one percent.
- Factors contributing to this decline include reduced public investment, inadequate infrastructure, limited non-farm employment opportunities, and increased casualization of labour.

In this context, a critical examination of rural development aspects, including credit and marketing systems, agricultural diversification, and the role of organic farming in promoting sustainable development, is necessary.

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Credit and Marketing in Rural Areas

The availability of credit facilities and efficient marketing mechanisms play a crucial role in the development of a rural economy.

Credit Facilities

- The rural economic growth depends significantly on capital infusion to enhance productivity in both agricultural and non-agricultural sectors.
- Farmers often need to borrow funds to cover initial investments, such as seeds, fertilisers, equipment, and various family expenses, given the lengthy-time period between crop sowing and income realisation after production.

Emergence of Formal Banking Centres:

- Historically, at the time of India's independence, moneylenders and traders exploited small farmers, marginal farmers, and landless labourers by offering loans at high-interest rates and manipulating accounts to keep them in a debt trap.
- However, a significant shift occurred in 1969 when India adopted **social banking** and a **multi-agency** approach to meet rural credit needs.
- Subsequently, **the National Bank for Agriculture and Rural Development (NABARD)** was established in 1982 to coordinate the activities of all institutions involved in rural financing.
- The **Green Revolution** played a pivotal role in reshaping the credit system by diversifying the rural credit portfolio toward production-oriented lending.

The Poor Women's Bank

'**Kudumbashree**' is a women-oriented **community-based poverty reduction programme** being implemented in **Kerala.** In 1995, a thrift and credit society was started as a small savings bank for poor women with the objective to encourage savings. The thrift and credit society mobilised Rs 1 crore as thrift savings. These societies have been acclaimed as the largest informal banks in Asia in terms of participation and savings mobilised.

- Today's institutional structure for rural banking includes various multi-agency institutions such as commercial banks, **regional rural banks (RRBs), cooperatives, and land development banks**. These institutions are expected to provide adequate credit at more affordable interest rates.

Role of SHGs:

- To bridge gaps in the formal credit system, Self-Help Groups (SHGs) have emerged, addressing the inadequacy of the formal credit delivery mechanism and its limited integration into overall rural social and community development.
- SHGs promote small-scale savings through contributions from each member. Pooled funds are then provided as a credit to members in need, repayable in small installments at reasonable interest rates.
- This approach, often referred to as micro-credit programs, has empowered women, but concerns exist regarding the utilisation of funds primarily for consumption rather than productive purposes.

Positive Outcomes of Rural Banking:

- Rural banking expansion had a positive impact on rural farm and non-farm output, income, and employment, especially after the Green Revolution.
- It helped farmers access services, credit facilities, and various loans to meet their production needs. Famines became rare events, and food security was achieved, which is evident in abundant grain buffer stocks.

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Issues in Credit Decentralization:

- Formal banking institutions, except for commercial banks, have struggled to develop a **culture of deposit mobilisation**, lending to deserving borrowers, and effective loan recovery.
- Agricultural **loan default** rates have remained high, and farmers' refusal to repay loans is a significant issue.

Recent initiatives like the **Jan-Dhan Yojana** have encouraged all adults to open bank accounts, indirectly promoting thrifty habits and efficient financial resource allocation, particularly in rural areas. Over 40 crore people have opened bank accounts through this scheme, and banks have mobilised funds exceeding Rs. 1,40,000 crores through these accounts.

Agricultural Market System

Agricultural marketing involves various processes, including the assembly, storage, processing, transportation, packaging, grading, and distribution of agricultural commodities across India.

Challenges in Pre-Independence Agricultural Marketing:

- Before independence, farmers faced issues such as faulty weighing, manipulation of accounts, lack of price information, and inadequate storage facilities.
- These challenges necessitated government intervention to promote efficient agricultural marketing.

Government Initiatives in Agricultural Marketing:

Four key measures were introduced to enhance agricultural marketing:

- **Market Regulation:** Government-regulated markets to ensure **transparency and fair conditions**, benefiting both farmers and consumers. However, more rural periodic markets need development.
- **Infrastructure Development:** Investment in physical infrastructure like **roads, warehouses, and cold storage** is crucial due to the current inadequacies.
- **Cooperative Marketing:** Cooperative marketing initiatives aimed **to secure fair prices for farmers' products**, with the success of milk cooperatives serving as a notable example. Challenges include insufficient farmer participation and inefficient financial management.
- **Policy Instruments:** Policy instruments like **minimum support prices (MSP)**, **buffer stocks**, and **public distribution systems (PDS)** were implemented to safeguard farmers' income and provide **subsidised food to the poor**. Despite these measures, private trade still dominates agricultural markets.

Emerging Alternate Marketing Channels:

Several alternative marketing channels have emerged to benefit farmers and increase their incomes. Examples include:

- **Apni Mandi:** Operational in Punjab, Haryana, and Rajasthan, where farmers directly sell produce to consumers.
- **Hadapsar Mandi:** Located in Pune, Maharashtra, provides a direct sales platform for farmers.
- **Rythu Bazars:** Vegetable and fruit markets in Andhra Pradesh and Telangana, allowing direct farmer-to-consumer transactions.
- **Uzhavar Mandi:** Farmers markets in Tamil Nadu, facilitating direct sales.

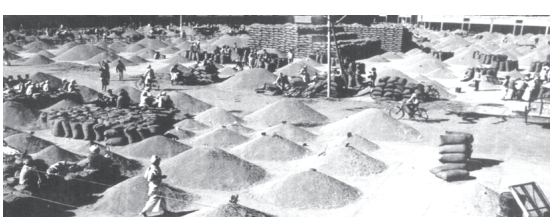

Figure 16.5: Regulated market yards benefit farmers as well as consumers

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Additionally, national and multinational fast-food chains are forming alliances with farmers, offering seeds, inputs, and assured procurement at pre-decided prices. These arrangements aim to reduce price risks for farmers and expand markets for farm products. The impact of these arrangements on small farmers' incomes is debatable and requires further analysis.

2020 Agriculture Reforms

- In 2020, the Indian Parliament passed three agricultural reform laws aimed at transforming the marketing system.
- These laws have generated mixed reactions, with some farmers supporting them and other sections of farmers opposing them.

Thus, government intervention in agricultural marketing has evolved over time. While some argue for reduced intervention to encourage agricultural commercialization, the extent of government involvement remains a subject of debate.

Diversification into Productive Activities

Diversification in rural livelihoods involves two aspects: **a change in cropping patterns** and **a shift of the workforce from agriculture to other allied activities** (livestock, poultry, fisheries, etc.) and the non-agriculture sector. This diversification is essential to mitigate the risks associated with relying solely on farming for a livelihood.

Need for Diversification

- **Risk Reduction:** Relying solely on agriculture presents greater risks. Diversification helps reduce this risk.
- **Sustainable Livelihoods:** Diversification offers sustainable livelihood options for rural populations, especially during seasons with limited agricultural employment opportunities.

Focus Areas for Diversification

- **Allied Activities:** Expanding into allied activities such as livestock, poultry, and fisheries.
- **Non-Farm Employment:** Encouraging the workforce to seek non-farm employment.
- **Emerging Alternatives:** Identifying and promoting emerging livelihood alternatives in rural areas.
- **Labor Force Shift:** Given the overcrowding in agriculture, a significant portion of the labour force must seek alternative employment opportunities in non-farm sectors.
- **Significant Participation of Women:** Historically, the majority of rural women have been employed in agriculture, while men typically seek non-farm employment. However, in recent times, women have also begun exploring non-farm job opportunities.

Segments of the Non-Farm Economy

- **Dynamic Sectors:** Some segments of the non-farm economy, like **agro-processing industries**, food processing industries, leather industry, and tourism, offer substantial growth opportunities.
- **Subsistence Sectors:** Other segments, such as **traditional home-based industries** like pottery, crafts, and handlooms, have potential but lack the necessary infrastructure and support.
- Major sectors in the Non-Farm Economy include **animal husbandry, fisheries, horticulture,** etc.

Let's analyze a few of these major activities in the Non-Farm economy.

Animal Husbandry:

- India practises mixed crop-livestock farming, with cattle, goats, and fowl being common.
- Livestock provides stability in income, food security, transport, fuel, and nutrition for rural families.

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- Over 70 million small and marginal farmers, including landless labourers, rely on livestock for alternate livelihoods.
- Women also find employment opportunities in the livestock sector.
- Poultry accounts for the largest share of livestock, followed by other animals like camels, horses, and mules.
- In India, livestock includes animals like camels, asses, horses, ponies, and mules, which form the lowest category. Refer to Figure 16.6 to understand the distribution of Poultry and Livestock in India, as per 2019.
- As of 2019, India had approximately 303 million cattle, including 110 million buffaloes.
- Meat, eggs, wool, and by-products also offer diversification opportunities.

Dairy Farming in India:

- The Indian dairy sector has shown remarkable performance over the last three decades. Additionally, milk production has increased tenfold between 1951 and 2016.
- The success is attributed to **'Operation Flood**,' a system where farmers pool their milk, grade it based on quality, process it, and market it to urban areas through cooperatives.
- This cooperative system assures farmers fair prices and income from their milk supply.

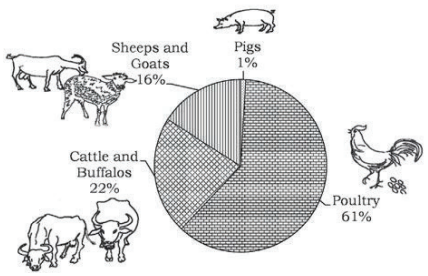

Figure 16.6 - Distribution of Poultry and Livestock in India, 2019

Major States in Milk Production:

- **Gujarat** serves as a success story in the efficient milk cooperative implementation, inspiring other states.
- Major milk-producing states include Gujarat, Madhya Pradesh, Uttar Pradesh, Andhra Pradesh, Maharashtra, Punjab, and Rajasthan.
- Gujarat's successful milk cooperatives serve as an example of efficient implementation, benefiting farmers with fair prices.

Fisheries:

- Fisheries play a vital role in the livelihoods of fishing communities.
- Inland sources contribute 65% to total fish production, while the marine sector contributes 35%.
- Total fish production accounts for **0.9% of India's GDP.**
- Challenges faced by fishing communities include underemployment, low earnings, and high illiteracy rates.
- Women play a significant role in export and internal marketing but require better credit facilities through cooperatives and Self-Help Groups (SHGs).

Horticulture:

- India's diverse climate and soil conditions support the cultivation of various horticultural crops, including **fruits, vegetables, and spices**.
- Horticulture contributes nearly one-third of the value of agricultural output and **6% of India's GDP.**
- India is a leading producer of fruits like mangoes, bananas, coconuts, cashew nuts, and spices.
- The sector has improved the economic condition of many farmers and provides livelihood opportunities for underprivileged classes.

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- Opportunities for women in rural areas include flower harvesting, nursery maintenance, seed production, and food processing.
- Enhancing livestock productivity requires improved technology, promotion of good breeds, veterinary care, and credit facilities.

Emerging Livelihood Options

- **Information Technology (IT)** has revolutionised various sectors in India.
- IT can contribute to **sustainable development** and **food security** by providing information on emerging technologies, prices, weather, and more.
- It has the potential to **generate employment in rural areas** and support agriculture through knowledge dissemination.
- Experiments with IT applications in rural development are ongoing in different parts of India.

Adoption of Village by Parliamentarians

In October, 2014, The Government of India introduced a new scheme called **Saansad Adarsh Gram Yojana (SAGY).** Under this scheme, **Members of India's Parliament need to identify and develop one village from their constituencies.** To begin with, MPs can develop one village as a model village by 2016, and two more by 2019, covering over 2,500 villages in India. According to the scheme, the village can have a population of 3,000-5,000 in the plains and 1,000-3,000 in the hills and should not be MPs' own or their spouse's village. MPs are **expected to facilitate a village development plan, motivate villagers to take up activities and build infrastructure in the areas of health, nutrition and education.**

Sustainable Development and Organic Farming

Increasing awareness of the harmful effects of chemical-based fertilisers and pesticides on health has led to a rise in interest in **eco-friendly agricultural practices**. Conventional agriculture heavily relies on chemical inputs, which can contaminate food, and water sources, harm livestock, deplete soil quality, and disrupt ecosystems. Efforts to evolve technologies that are eco-friendly are essential for sustainable development and one such technology which is eco-friendly is **organic farming.**

Organic Farming

- Organic farming is recognized as an **eco-friendly alternative**, aiming to restore, maintain, and enhance ecological balance in agriculture.
- There is a growing global demand for organically grown food due to its perceived **safety and nutritional value**.

Benefits from Organic Farming :

- Organic agriculture can substitute expensive inputs like high-yield variety seeds (HYV seeds), chemical fertilisers, and pesticides with locally produced, cost-effective organic inputs.

Organically Produced Cotton in Maharashtra

In 1995, when **Kisan Mehta of Prakruti (an NGO)** first suggested that cotton, the biggest user of chemical pesticides, could be grown organically, the then Director of the Central Institute for Cotton Research, Nagpur, famously remarked, "Do you want India to go naked?" At present, as many as 130 farmers have committed 1,200 hectares of land to grow cotton organically on the **International Federation of Organic Agriculture Movement's** standards. The produce was later tested by the German Accredited Agency, AGRECO, and found to be of high quality. Kisan Mehta feels that about 78 percent of Indian farmers are marginal farmers owning about less than 0.8 hectare but accounting for 20 percent of India's cultivable land. For such farmers, organic agriculture is more profitable in terms of money and soil conservation in the long run.

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- It generates income through exports and provides **healthier**, **pesticide-free food.**

Challenges in Organic Farming:

- Organic farming **requires more labour** but is attractive to small and marginal farmers.
- Initial yields may be lower in organic farming, and the produce may have blemishes and a shorter shelf life compared to conventionally grown crops.
- Other challenges include inadequate infrastructure, marketing issues, and the need for supportive agriculture policies.

Despite challenges, India has a clear advantage in producing organic products for both domestic and international markets.

Tamil Nadu Women in Agriculture (TANWA)

Tamil Nadu Women in Agriculture (TANWA) was a project initiated in the late 1980s in Tamil Nadu **to train women in the latest agricultural techniques and in organic farming.** It encouraged women **to actively participate in raising agricultural productivity and family income.** At a Farm Women's Group in Thiruchirapalli, run by **Anthoniammal**, trained women are successfully making and selling vermicompost and earning money from this venture. Many other Farm Women's Groups are creating savings in their group by functioning like mini banks through a micro-credit system. With the accumulated savings, they promote **small-scale household activities** like mushroom cultivation, soap manufacture, doll making, or other income-generating activities.

POINTS TO PONDER

Organic farming can be defined as an agricultural process that uses biological fertilisers and pest control acquired from animal or plant waste. Given the increasing use of fertilizers and losing soil fertility this can be a sustainable farming practice. Have you heard of Zero Budget Natural Farming? Can you find out its benefits?

The Concept of Food Security

In the 1970s, food security was primarily about the "availability at all times of adequate supply of basic foodstuffs." However, **Amartya Sen** introduced a new dimension by emphasising **"access"** to food through entitlements, which include what one can produce, exchange in the market, and state or socially-provided supplies. This led to a significant shift in the understanding of food security.

Emerging Notion of Food Security

- The **1995 World Food Summit** redefined food security as the condition where all individuals, households, regions, nations, and the world have both physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and preferences for an active and healthy life. It also acknowledged that poverty eradication is crucial for improving access to food.
- Food security encompasses **several dimensions**, including the availability, accessibility, and affordability of food.
  - **Availability** refers to the presence of an adequate food supply within the country, including imports and government-held stock.
  - **Accessibility** means that food is within reach of every individual.
  - **Affordability** implies that individuals have enough money to purchase sufficient, safe, and nutritious food that meets their dietary needs.

Importance of Food Security

- Food security is crucial to ensure that all individuals have access to food at all times, including during calamities and disasters.

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- Natural disasters, pandemics, and economic crises can disrupt food availability, leading to price increases and food insecurity.
- Food security is vital for poverty eradication and preventing situations of famine, where widespread starvation and death occur.
- A Famine is characterised by widespread deaths due to starvation and epidemics caused by forced use of contaminated water or decaying food and loss of body resistance due to weakening from starvation.
- The most devastating famine that occurred in India was the **Famine of Bengal in 1943**. This famine killed thirty lakh people in the province of Bengal (the most affected were agricultural labourers, fishermen, transport workers, and other casual labourers).
- Pandemic like the **COVID-19** had an adverse impact on food security. Restriction on the movement of people and goods and services impacted economic activity, hampering accessibility, availability, and affordability of food to a greater extent.

Groups Vulnerable to Food Insecurity

- A large section of people suffer from food and nutrition insecurity in India.
- Vulnerable groups include landless people, traditional artisans, petty self-employed workers, destitute, and those engaged in low-wage, seasonal labour.
- Scheduled Castes (SCs), Scheduled Tribes (STs), and some lower-caste groups among Other Backward Classes (OBCs) who have either poor land-base or very low land productivity are also at risk.
- People affected by natural disasters and those who migrate in search of work are highly food insecure.
- Pregnant and nursing mothers, as well as children under 5 years old, face a higher risk of malnutrition (according to the National Health and Family Survey (NHFS) 1998–99, the number of such women and children is approximately 11 crore).

Regional Disparities

- Certain regions of India, such as economically backward states, tribal areas, and disaster-prone regions, have a higher concentration of food-insecure individuals.
- States like Uttar Pradesh, Bihar, Jharkhand, Orissa, West Bengal, Chattisgarh, Madhya Pradesh, and Maharashtra have a significant number of food insecure people.

Hunger and Food Insecurity

- Hunger is both a consequence of poverty and a contributor to poverty.
- It can be **chronic**, resulting from persistently inadequate diets, or **seasonal** due to the cyclic nature of agricultural activities or casual labour. Refer to Table 16.2 to understand the percentage of households with seasonal and chronic hunger in India.
- India has seen a decline in both chronic and seasonal hunger over the years.

Year	Types of Hunger		
	Seasonal	Chronic	Total
Rural			
1983	16.2	2.3	18.5
1993–94	4.2	0.9	5.1
1999–2000	2.6	0.7	3.3
Urban			
1983	5.6	0.8	6.4
1993–94	1.1	0.5	1.6
1999–2000	0.6	0.3	0.9

Table 16.2: Percentage of Households with Hunger in India

Measures to Ensure Food Security in India

Since the Green Revolution in the early 1970s, India has avoided famine even during adverse weather conditions. The country has achieved self-sufficiency in food grains over the past 30 years through diverse crop production.

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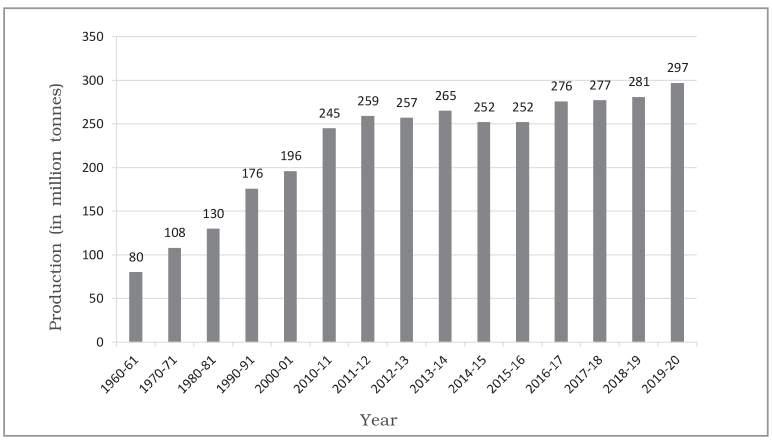
Green Revolution and Self-Sufficiency

- India has pursued self-sufficiency in food grains since Independence.
- The "Green Revolution" in agriculture, especially in wheat and rice production, has contributed significantly to food security.
- Wheat and rice production saw substantial growth, with Uttar Pradesh and Madhya Pradesh leading in production.
- The Final Estimates of production of major crops for the year 2022-23 have been released by the Department of Agriculture and Farmers Welfare. As per Final Estimates for 2022-23, total Foodgrain production in the country is estimated at record 3296.87 Lakh tonnes which is higher by 140.71 Lakh tonnes than the production of foodgrains of 3156.16 Lakh tonnes achieved during 2021-22. Further, the production during 2022-23 is higher by 308.69 Lakh tonnes than the previous five years' (2017-18 to 2021-22) average production of foodgrains.
- States like **West Bengal and Uttar Pradesh** excelled in rice production, while wheat production was significant in **Uttar Pradesh and Madhya Pradesh**.

Buffer Stock

- Buffer Stock is a reserve of foodgrains, wheat, and rice, procured by the government through the **Food Corporation of India (FCI).** The FCI purchases wheat and rice from the farmers in states where there is surplus production (Refer to Graph 16.1: Production of Foodgrains in India (Million Tonnes)).
- Farmers are paid a **Minimum Support Price (MSP)** for their crops, and the purchased food grains are stored in granaries.
- The purpose of creating a buffer stock is to distribute food grains in deficit areas and among the poorer sections of society at a price lower than the market price (also known as **Issue Price**) during adverse conditions or calamities.



Graph 16.1: Production of Foodgrains in India (Million Tonnes)

Rationing in India

- Rationing in India dates back to the 1940s, particularly in response to the Bengal famine.
- The rationing system was revived in the 1960s before the Green Revolution due to food shortages.
- Food intervention programs like the **Public Distribution System (PDS), Integrated Child Development Services (ICDS), and Food-for-Work (FFW)** were introduced in the 1970s.
- These programs have evolved and expanded over the years to include various **poverty alleviation programs (PAPs)** that enhance food security, especially in rural areas.
- Employment programs, in particular, contribute to food security by increasing the income of the poor.

Public Distribution System (PDS)

- The PDS is a system through which the FCI distributes food procured from farmers among the poorer sections of society.
- Ration shops, also known as **Fair Price Shops**, are present in most localities, villages, towns, and cities, totaling about 5.5 lakh shops nationwide.

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- Ration shops sell food grains, sugar, and kerosene at prices lower than the market rate.
- Families with ration cards can purchase a specified quantity of these items every month from nearby ration shops.

Current Status of the Public Distribution System

- PDS is a crucial government initiative for ensuring food security in India.
- Over the years, the PDS policy has evolved to make it more efficient and targeted.
- In 1992, the **Revamped Public Distribution System (RPDS)** was introduced to provide benefits to remote and backward areas.

Antyodaya Anna Yojana (AAY)

AAY was launched in December 2000. Under it, 1 crore of the poorest among the BPL families, benefiting from **Targeted PDS,** were identified by the respective state rural development departments through a **Below Poverty Line (BPL) survey. Twenty-five kilograms of foodgrains** were made available to each eligible family at a highly subsidised rate of Rs 2 per kg for wheat and Rs 3 per kg for rice. This quantity has been enhanced from 25 to 35 kg with effect from April 2002.

- From June 1997, the **Targeted Public Distribution System (TPDS)** aimed to target the poor in all areas with a differential price policy.
- In 2000, two special schemes, **Antyodaya Anna Yojana (AAY) and Annapurna Scheme (APS)**, were launched to target the poorest of the poor and indigent senior citizens.
- The PDS has effectively stabilised prices, ensured affordable food availability, and averted hunger and famine.
- It has contributed to increased food grain production and provided income security to farmers in certain regions.
- Refer to Table 16.2 to understand some important features of PDS.

Name of scheme	Year of introduction	Coverage target group	Latest volume	Issue price (Rs per kg.)
PDS	Up to 1992	Universal	-	W-2.34 R-2.89
RPDS	1992	Backward blocks	20 kg of foodgrains	W-2.80 R-3.77
TPDS	1997 launched in 2000	Poor and non-poor , BPL, APL	35 kg of foodgrains/ month	BPL- W-4.15 R-5.65 APL-W-6.10 R-8.30
AAY	2002	Poorest of the poor	35 kg of per household foodgrains per month	W-2.00 R-3.00
APS	2000	Indigent senior citizens	10 kg of foodgrains	Free
National Food Security Act (NFSA)	2013	Priority households	5 Kg per person per month	W-2.00 R-3.00 Coarse grains - 1.00

Note: W - Wheat; R - Rice; BPL - Below poverty line; APL - Above poverty line
Table 16.2: Some Important Features of PDS

Criticism and Challenges

- Despite overflowing granaries, instances of hunger persist in India.
- Food Corporation of India's godowns often have surplus grains, some of which rot or are damaged.

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- High levels of buffer stocks are deemed wasteful due to storage costs and grain quality deterioration.
- The increase in MSP for food grains has led to shifts in crop production, resulting in environmental degradation and sustainability concerns.
- There is a decline in per capita consumption of rice and wheat in both rural and urban India.
- Public Distribution System dealers sometimes engage in malpractices, such as diverting grains to the open market, selling poor-quality grains, or irregularly opening shops.
- The introduction of different price levels for ration cards has reduced incentives for **above-poverty-line (APL)** families to purchase items from ration shops, as their prices are close to open market prices.

Role of Cooperatives in Food Security

- Cooperatives play a significant role in ensuring food security in India, particularly in the southern and western regions.
- Cooperative societies establish shops to provide affordable goods to low-income individuals.
- In Tamil Nadu, approximately 94 percent of fair-price shops are operated by cooperatives.
- Delhi's Mother Dairy offers milk and vegetables at controlled prices determined by the Delhi government, contributing to food security.
- Amul, a cooperative from Gujarat, has made significant strides in milk and milk product distribution, sparking the White Revolution in India.
- Maharashtra's **Academy of Development Science (ADS)** has facilitated the establishment of grain banks through a network of NGOs.
  - ADS conducts training and capacity-building programs on food security for NGOs.
  - Grain banks are emerging in various parts of Maharashtra, thanks to ADS's efforts.
  - The ADS Grain Bank program is recognized as a successful and innovative food security intervention.

POINTS TO PONDER

Food security is crucial to ensure that all individuals have access to food at all times, including during calamities and disasters. India has been self-sufficient since the Green Revolution. It has maintained buffer stocks and been able to deliver food through the PDS network even during the COVID-19. Which do you think is more important: availability of food or availability of nutritious food? What do you know about nutritional security?

Development Experiences of India: A Comparison with Neighbours

Over the last two decades, global economic changes due to **globalisation** have had both short and long-term effects on countries, including India. Nations are striving to strengthen their economies, forming alliances like **SAARC, EU, ASEAN, G-8, G-20, and BRICS**. Understanding neighbours' developmental processes is crucial, especially for developing countries facing competition within the limited economic space of the developing world.

We will compare India's developmental strategies with its neighbours, **Pakistan and China**. Despite abundant natural resources, India differs politically as the world's largest democracy with a secular constitution. Contrasted are Pakistan's militarist structure and China's command economy, moving slowly toward democracy and liberal economic restructuring.

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Developmental Path : A Snapshot View

> Geography has made us neighbours. History has made us friends. Economics has made us partners, and necessity has made us allies. Those whom God has so joined together, let no man put asunder. - **John F. Kennedy**

- The three nations—India, Pakistan, and China—share similarities in their developmental strategies.
- In a speech at that time, **Jawaharlal Nehru said**, "These new and revolutionary changes in China and India, even though they differ in content, symbolise the new spirit of Asia and new vitality which is finding expression in the countries in Asia."
- They all began their developmental paths around the same time, with India and Pakistan gaining independence in 1947 and China establishing the People's Republic in 1949.
- **Initially, they followed similar planning approaches with Five Year Plans, and today, Pakistan is on its 12th Five Year Development Plan (2018–23), while China is on its 14th (2021–25).**
- India and Pakistan had similar strategies, emphasising a large public sector and increased public expenditure on social development.
- Till the 1980s, all these 3 nations had comparable growth rates and per capita incomes. However, their global standing today is at a different level, mainly as a result of the differential economic path followed by these nations.

Let's first delve into the historical paths of China and Pakistan:

China

- After the People's Republic was established, China brought critical sectors, enterprises, and lands under government control.
- **The Great Leap Forward (GLF) in 1958** aimed at massive industrialization, but it faced challenges like severe drought and conflicts with Russia.
- Later**, The Great Proletarian Cultural Revolution (1966–76)** was initiated under which students and professionals were sent to learn from the countryside.
- In 1978, reforms started, initially in agriculture, foreign trade, and investment, later extending to the industrial sector. Private and collective enterprises were allowed, and state-owned enterprises faced competition.
- Dual pricing and special economic zones attracted foreign investors, contributing to China's current rapid industrial growth.

Figure 16.7: Wagah Border is not only a tourist place but also used for trade between India and Pakistan

Pakistan

- Similar to India, Pakistan adopted a mixed economy model with public and private sectors.
- In the late 1950s and 1960s, it introduced a regulated policy framework for import substitution-based industrialization.
- **The Green Revolution** led to mechanisation, increased public investment, and changed the agrarian structure.
- In the 1970s, capital goods industries were nationalised, but in the late 1970s and 1980s, there was a shift towards denationalisation and encouraging the private sector.
- Financial support from Western nations and remittances from emigrants along with 1980s reforms created a conducive climate for new investments.

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Demographic Indicators

Let's break down the comparison of demographic indicators for India, China, and Pakistan:

Population Distribution:

- India and China collectively account for one-third of the global population.
- Pakistan's population is significantly smaller, approximately one-tenth of China or India.

Geographical Factors:

- China, despite being the largest nation geographically, has the lowest population density among the three.

Country	Estimated Population (in million)	Annual Growth of Population	Density (per sq. km)	Sex Ratio	Fertility Rate	Urbanisation
India	1352	1.03	455	924	2.2	34
China	1393	0.46	148	949	1.7	59
Pakistan	212	2.05	275	943	3.6	37

Table 16.3: Demographic Indicators 2017 - 18

Population Growth:

- Pakistan exhibits the highest population growth rate, followed by India and then China.
- China's lower population growth rate is attributed to the one-child norm introduced in the late 1970s, resulting in demographic implications.

Sex Ratio:

- The sex ratio is low and biased against females in all three countries.
- Scholars attribute this to prevailing son meta-preference.
- Recent measures in all three countries aim to address and improve the skewed sex ratio.

Fertility Rate:

- China has a low fertility rate, influenced by the one-child norm.
- Pakistan, in contrast, has a very high fertility rate.

Urbanisation:

- China has a high level of urbanisation.
- India has 34% of its population living in urban areas.

Population Ageing:

- China, due to the one-child norm, faces a future scenario with more elderly people relative to young people.
- As a response, China has relaxed its one-child policy, allowing couples to have two children.

Growth Rate Indicators

Gross Domestic Product (GDP):

- China has the second-largest GDP (PPP) globally at $22.5 trillion, followed by India at $9.03 trillion, and Pakistan at $0.94 trillion (approximately 11% of India's GDP).
- India's GDP is about 41% of China's GDP.

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Historical Growth Rates:

- In the 1980s, China maintained a near double-digit growth rate while Pakistan was ahead of India. However, by 2015–17, there was a decline in Pakistan and China's growth rates, while India experienced a moderate increase.

Country	1980-90	2015-2017
India	5.7	7.3
China	10.3	6.8
Pakistan	6.3	5.3

Table 16.4: Annual Growth of Gross Domestic Product (%), 1980–2017

- Some scholars attribute Pakistan's declining growth rate to reform processes and prolonged political instability.

Sector-wise Contributions to Gross Value Added (GVA) (Refer to Table 16.5):

- In China, 26% of the workforce is engaged in agriculture, contributing 7% to GVA.
- In India and Pakistan, agriculture contributes 16% and 24% to GVA, with a higher proportion of the workforce (43% in India and 41% in Pakistan) engaged in agriculture.
- China's industries contribute 41% to GVA, employing 28% of the workforce.
- In India, industries contribute 30% to GVA, employing 25% of the workforce.
- Pakistan's industry workforce accounts for 24%, contributing 19% to GVA.
- The service sector is the largest contributor to GVA in all three countries.

Employment Shift and Service Sector Growth:

- Countries typically shift employment and output from agriculture to industry and then to services. This pattern is evident in China.
- In the 1980s, Pakistan showed a faster shift to the service sector, employing 27% of its workforce, compared to India (17%) and China (12%).
- **In 2019, the service sector employed 35% of Pakistan's workforce, 32% in India, and 46% in China.**

Sector	Contribution to GVA			Distribution of Workforce		
	India	China	Pakistan	India	China	Pakistan
Agriculture	16	7	24	43	26	41
Industry	30	41	19	25	28	24
Services	54	52	57	32	46	35
Total	100	100	100	100	100	100

Table 16.5: Sectoral Share of Employment and GVA (%) in 2018–2019

Decades-long Trends

- Over the last five decades, the growth of the agriculture sector, which employs the largest proportion of the workforce, has declined in all three countries (Refer to Table 16.6).

Country	1980-90			2014-18		
	Agriculture	Industry	Services	Agriculture	Industry	Services
India	3.1	7.4	6.9	3.1	6.9	7.6
China	5.9	10.8	13.5	3.1	5.3	7.1
Pakistan	4	7.7	6.8	1.7	4.8	5.0

Table 16.6: Trends in Output Growth in Different Sectors, 1980–2015

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- China's growth is contributed by the manufacturing and service sectors, while India's growth is mainly attributed to the service sector.
- Pakistan has shown deceleration in all three sectors during this period.

Indicators of Human Development

- Table 16.7 indicates that China is outperforming India and Pakistan across various human development indicators, including **income indicators (GDP per capita), poverty rates, health indicators (mortality rates, access to sanitation), literacy, life expectancy, and malnourishment**.

Item	India	China	Pakistan
Human Development Index (Value)	0.645	0.761	0.557
Rank (Based on HDI)	130	87	154
Life Expectancy at Birth (years)	69.7	76.9	67.3
Mean years of Schooling (% aged 15 and above)	65	8.1	5.2
Gross National Income per capita (PPP US$)	6.681	16.057	5.005
Percentage of People living Below Poverty Line (National)	21.9*	1.7*	24.3*
Infant Mortality Rate (per 1000 live births)	29.9	7.4	57.2
Maternal Mortality Rate (per 1 lakh births)	133	29	140
Population using at least basic Sanitation(%)	60	75	60
Population using at least basic drinking Water Source (%)	93	96	91
Percentage of Undernourished Children	37.9	8.1	37.6

Note: * for the year 2011; for the years 2015.

Table 16.7: Some Selected Indicators of Human Development, 2017-2019

- Both China and Pakistan are ahead of India in reducing the proportion of people below the poverty line and achieving better sanitation outcomes.
- China has a significantly lower maternal mortality rate compared to India and Pakistan. For every one lakh births, only 29 women die in China, while in India and Pakistan, the figures are about 133 and 140, respectively.
- Surprisingly, all three countries report providing improved drinking water sources for most of their populations.
- China has the smallest share of the poor among the three countries.

Challenges and Limitations of Human Development Indicators:

- While human development indicators are crucial, they may not be sufficient for a comprehensive assessment.
- The limitations include the absence of what are referred to as **'liberty indicators**,' which encompass aspects like democratic participation, constitutional protection of citizens' rights, and independence of the judiciary and the rule of law.
- The construction of a human development index may be considered incomplete without these liberty indicators, and their importance in the overall assessment is emphasised.

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	Pre-Reform Period	Post-Reform Period
India	✤ India initiated economic reforms in 1991 due to a balance of payments crisis, necessitating borrowing from the IMF and World Bank.	✤ Post-1991, India shifted its focus towards the sustainable export of manufactured goods, ushering in a liberalised economic model. ✤ The country witnessed positive outcomes with stable and improved macroeconomic indicators.
Pakistan	✤ Pakistan embarked on economic reforms in 1988, encountering challenges in GDP growth and sectoral performance.	✤ Pakistan's foreign exchange earnings relied heavily on remittances and volatile agricultural exports, leading to increased dependence on foreign loans. ✤ Despite challenges, Pakistan has seen economic recovery, with a notable 5.5% GDP growth in 2017-18. ✤ The agricultural sector's growth remained below satisfactory levels, while the industrial and service sectors experienced growth at 4.9% and 6.2%, respectively.
China	✤ In 1978, China introduced reforms due to dissatisfaction with the slow growth under Maoist rule and the perceived failure of a decentralised, self-sufficient model.	✤ Post-1978, China implemented reforms in education, health, and land, resulting in positive impacts on social and income indicators. ✤ Basic health services were extended, and equitable food distribution was promoted through experimentation under decentralised governance. ✤ Reforms in agriculture, such as land distribution, contributed to prosperity and rural industrial growth, paving the way for rapid economic development.

Table 16.8: Development of India, Pakistan, and China

Conclusion

In this chapter, we have explored critical facets of India's economic landscape, focusing on rural development and food security, while also drawing comparative insights from the developmental paths of China and Pakistan. India's path reflects its commitment to democracy and inclusive growth, with a focus on addressing rural disparities and food security.

As India continues to navigate the complexities of rural development, food security, and its broader developmental path, the lessons learned from its own history and those of its neighbours can provide valuable insights into shaping a sustainable and equitable economic future. These experiences serve as critical reference points in the ongoing pursuit of prosperity, social equity, and food security in the South Asian region.

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Glossary

- **Commercialisation of Agriculture:** The shift from subsistence farming to market-oriented crop production, was especially notable during British rule when cash crops were prioritised for industrial use.
- **Demographic Transition:** A concept by Frank Notestein describing the changing patterns of birth and death rates in response to economic development, divided into pre-industrial, developing, modern industrialised, and post-industrial phases.
- **European Union (EU):** A political and economic union of 25 independent European states formed to foster cooperation within the continent.
- **Formal Sector Establishments:** Refers to public sector establishments and private sector businesses with 10 or more hired workers.
- **G-20:** A forum of 19 countries, along with the European Union, aimed at promoting global economic stability and sustainable growth.
- **G-8:** Comprising major industrialised nations, the G-8 holds an annual summit for economic and political discussions.
- **Gross Domestic Product (GDP):** The total value of goods and services produced within a country's borders in a year, irrespective of ownership.
- **Gross Value Added (GVA):** Represents a country's GDP plus subsidies and minus indirect taxes, providing a measure of economic output.
- **Household:** A group of individuals living together and sharing a common kitchen.
- **Infant Mortality Rate:** The number of infant deaths before the age of one per 1,000 live births in a specific year.
- **Land/Revenue Settlement:** A system during British rule to administer territories based on land surveys, determining revenues from peasants, revenue villages, or proprietary landholders.
- **Life Expectancy at Birth:** The expected number of years a newborn would live if mortality rates remain constant.
- **Maternal Mortality Rate:** The ratio of maternal deaths related to childbearing to live births or the sum of live births and foetal deaths in a given year.
- **Mortality Rate:** An annual count of deaths per 1,000 people, distinct from morbidity rate.
- **MRTP Act:** The Monopolies Restrictive Trade Practices Act, is designed to prevent monopolistic practices and regulate business conduct.
- **Multilateral Trade Agreements:** Trade agreements involving a country with more than two nations for the exchange of goods and services.
- **Planning Commission:** An organisation in India responsible for assessing resources, formulating plans for their balanced utilisation, and determining priorities.
- **Poverty Line:** The per capita expenditure on minimum needs, including daily calorie intake, used to measure poverty levels.
- **Private Sector Establishments:** Businesses owned and operated by individuals or groups.
- **Unemployment:** A situation where individuals actively seek employment but are not currently working.
- **Urbanisation:** The expansion of metropolitan areas or the increase in the proportion of urban population relative to the total population.
- **Worker-Population Ratio:** The percentage obtained by dividing the total number of workers by the population.

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