GOVERNMENT OF TAMIL NADU

HIGHER SECONDARY SECOND YEAR

ECONOMICS

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Department of School Education

Untouchability is Inhuman and a Crime

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HOW TO USE THE BOOK

Chapter content	It presents a complete overview of the chapter
Introduction	Summary of the presentation in every chapter
Objectives	Goals to transform the class room processes into learner centric with a list of bench marks
Think and Do	Amazing facts and rhetorical questions to lead students to economic inquiries
Boxes	Additional inputs to the content is provided
Activity	Directions are provided to students to conduct activities in order to explore and enrich the concept.
	To motivate the students to further explore and enrich the concept
 **ICT**	The use of ICT for improving the teaching – learning skills is given
Schedules	Give the values derived from functions which are graphed in the diagrams
Concept Diagrams	Conceptual diagrams that depict relationships between concepts to enable students to learn the content schematically.
Figures	To illustrate the situations.
Glossary	Explanation of scientific terms
Model Question Papers	Evaluation
References	List of related books for further details of the topic
Web links	List of digital resources

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CAREER GUIDANCE

CAREER PROSPECTS IN ECONOMICS

The career prospects for economics graduates are many. Numerous fields are waiting for economic graduates both in public as well as private sectors. In the government sector, one may try for Indian Economic Services, jobs in Reserve Bank of India, PSUs and other public sector banks. All these jobs have wonderful career options. These jobs give social prestige along with financial stability. Private sector also offers jobs for economic graduates in the fields like private banks, MNCs, BPOs, KPOs, Business journals and newspapers. A good opportunity is also waiting for economic students in higher education. One can pursue Ph.D. in economics to enter into the field of teaching in schools, colleges and universities and research in hundreds of Research Institutes and funding agencies – national & international.

One makes a successful career as a Corporate Lawyer after BA in economics followed by LLB. BA in economics and MBA placed one at a better position in the private sector. Economic Journalism is another shining area for job perspective.

FAMOUS UNIVERSITIES AND COLLEGES OFFERING ECONOMICS

There are many institutes, colleges and universities that have economics in its BA, MA and Ph.D. level courses. Here are the lists of institutions offering economics. One can easily see other information related with the respective universities/colleges/institutes with their given website.

Delhi School of Economics www.econdse.org	**Sri Ram College of Commerce** www.srcc.edu	**University of Delhi, South Campus** www.south.du.ac.in	**University of Agriculture Science** www.uasbangalore.edu.in
Jawaharlal Nehru University, Delhi www.jnu.ac.in	**St. Stephen College, Delhi** www.ststephens.edu	**University of Bombay** www.mu.ac.in	**Ravenshaw University, Cuttack** www. ravenshawuniversity.ac.in
IIT Kanpur www.jnu.ac.in	**Madras School of Economics** www.mse.ac.in	**BITS –Pilani** www.bits-pilani.ac.in	**Gokhale Institute of Economics & Politics, Pune** www.gipe.ac.in
IIT Madras https://www.iitm.ac.in	**Presidency College, Kolkata** www.presiuniv.ac.in	**Indian Statistical Institute, Kolkata Bangalore** www. isical.ac.in	**Symbiosis School of Economics** www.sse.ac.in
Banaras Hindu University www.bhu.ac.in	**University of Hyderabad** www.uohyd.ernet.in	**IGIDR-Mumbai** www.igidr.ac.in	**Centre for Development Studies Thiruvananthapuram** www.cds.edu

For world recognised institution in the field of economics, everybody wishes to join London School of Economics

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Jobs in Economics Field

An array of employment opportunities is available in economics field. Meritorious candidates can get excellent job opportunities after successfully completing their BA or MA in economics.

Government Sectors

Economics graduates can get prestigious jobs in the government sectors like

- **Indian Civil Services**
- **Indian Economic Services**
- **Reserve Bank of India**
- **National Sample Survey**
- **Ministry of Economic Affairs**
- **Planning Board**
- **Planning Commission (State & Central)**
- **National Council for Applied Economic Research and**
- **National Institute of Public Finance and Policy.**

Other than Government Sectors

Job opportunities are also waiting in the private sectors, NGOs and International Aid Agencies. The firms like World Bank, Asian Development Bank, IMF, and other Development Banks, Aid agencies, Financial Consultancy firms are hiring the economic graduates for their various positions. One can assume in these organisations as economist, economic advisor, executive, analyst, consultant, researcher, financial analyst, business analyst, economic research analyst and stock market analyst. As far as salary is concerned, lots of candidates are hired through campus placement. The average salary is Rs. 4 to 8 lakh per annum. But for the deserving candidates, the field opens plethora of options and remuneration is also beyond expectation. The filed like accountancy, actuarial, banking, insurance also open many jobs opportunities.

Economics Employment Opportunities

The various fields are offering better job opportunity after passing BA or MA in economics. Some of the high demand sectors are given below where job prospects are huge.

CAREERS FOR AN ECONOMIST

Banking and Finance	Government and Public Sector	Education and Communications	Business
Commodities Broker	Claims Examiner	Professor	Market Research Analyst
Bank Management Trainee	Foreign Trade analyst	Technical Writer	Retail Buyer
Financial Analyst	Tax Auditor	Journalist/Columnist	Staff Training and Development Specialist
Economic Forecaster	Public Administrator	Teacher	Insurance Underwriting Trainee
Investment Banker	Legislative Assistant	Higher Education, Administration	Management Consultant
Loan Counsellor	Regional/Urban Planner	Educational Television Advisor	Strategic Planner
Securities Analyst	Financial Planner	Information Analyst	Business Administrator

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Assessment

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CHAPTER

1

Introduction to Macro Economics

"Macro economics is very much about tying together facts and theories".

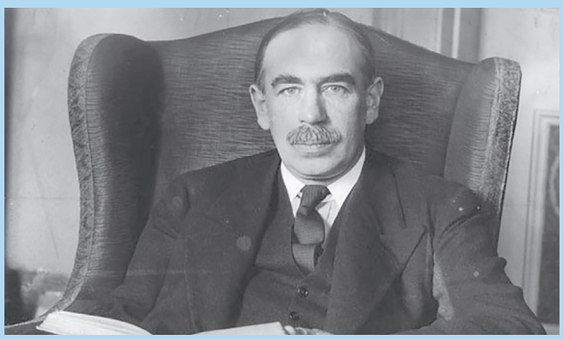
- Dorn Busch, Fischer and Startz

Learning Objectives

1. To enlighten the evolution, importance and basic concepts of macroeconomics, and
2. To understand the functioning of an economy.

1.1 Introduction

The subject Economics is classified into two branches, namely, Micro Economics and Macro Economics. Ragnar Frisch, a Norwegian economist and the co-recipient of the first Nobel Prize in Economic Sciences coined the words 'micro' meaning small and 'macro' meaning large in the year 1933. However, macroeconomics in its modern form, began with John Maynard Keynes and his book "The General Theory of Employment, Interest and Money" published in 1936. Keynes offered an explanation for fallout from the Great Depression, when goods remained unsold and workers unemployed. Hence, Keynes is regarded as the 'Father of Modern Macro Economics'.

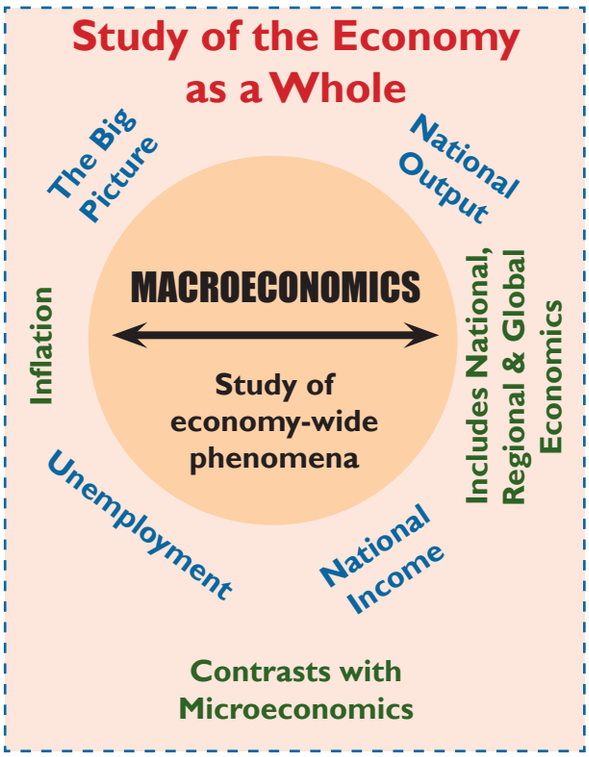


J.M.Keynes
Father of Modern Macro Economics

1.2 Meaning of Macro Economics

The word 'Macro' is derived from the Greek word 'Makros' meaning 'large'. Hence, Macro Economics is the study of

the economy as a whole. In other words, macro economics deals with aggregates such as national income, employment, output etc. Macro Economics is also known as 'Income Theory'.



The subject matters covered in Macro Economics are the areas such as employment, national income, inflation, business cycle, poverty, inequality, disparity, investment and saving, capital formation, infrastructure development, international trade, balance of trade and balance of payments, exchange rate and economic growth.

1.3 Importance of Macro Economics

The importance and the need for introducing a macro outlook of an economy are given below:

- There is a need to understand the functioning of the economy at the aggregate level to evolve suitable strategies and to solve the basic problems prevailing in an economy.
- Understanding the future problems, needs and challenges of an economy as a whole is important to evolve precautionary measures.
- Macro economics provides ample opportunities to use scientific investigation to understand the reality.
- Macro economics helps to make meaningful comparison and analysis of economic indicators.
- Macro economics helps for better prediction about future and to formulate suitable policies to avoid economic crises.

1.4 Scope of Macro Economics

The study of macro economics has wide scope and it covers the major areas as follows

- **National Income:** Measurement of national income and its composition by sectors are the basic aspects of macroeconomic analysis. The trends in National Income and its composition provide a long term understanding of the growth process of an economy.
- **Inflation:** Inflation refers to steady increase in general price level. Estimating the general price level

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by constructing various price index numbers such as Wholesale Price Index, Consumer Price Index, etc, are needed.

- **Business Cycle:** Almost all economies face the problem of business fluctuations and business cycle. The cyclical movements (boom, recession, depression and recovery) in the economy need to be carefully studied based on aggregate economic variables.

- **Poverty and Unemployment:** The major problems of most resource - rich nations are poverty and unemployment. This is one of the economic paradoxes. A clear understanding about the magnitude of poverty and unemployment facilitates allocation of resources and initiating corrective measures.

- **Economic Growth:** The growth and development of an economy and the factors determining them could be understood only through macro analysis.

- **Economic Policies:** Macro Economics is significant for evolving suitable economic policies. Economic policies are necessary to solve the basic problems, to overcome the obstacles and to achieve growth.

1.5 Limitations

Macro economics suffers from certain limitations. They are:

1. There is a danger of excessive generalisation of the economy as a whole.

2. It assumes homogeneity among the individual units.

3. There is a fallacy of composition. What is good for an individual need not be good for nation and viceversa. And, what is good for a country is not good for another country and at another time.

4. Many non - economic factors determine economic activities; but they do not find place in the usual macroeconomic books.

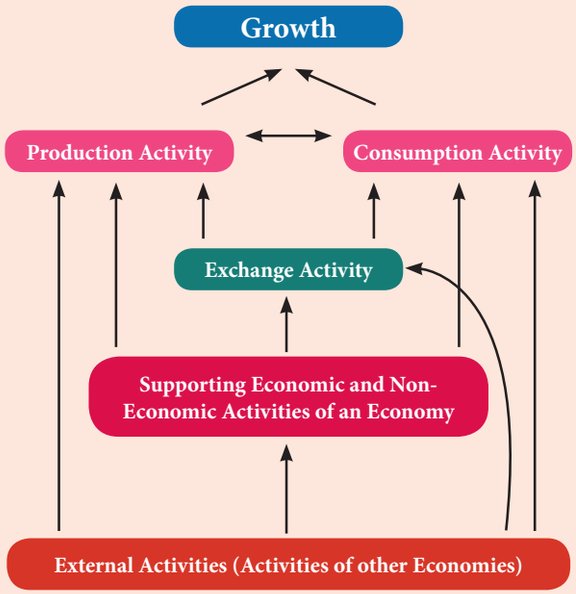
1.6 Economy and its Types

The term economy has been defined by A. J. Brown as, "A system by which people earn their living." J. R. Hicks defined it as, "An economy is a cooperation of producers and workers to make goods and services that satisfy the wants of the consumers."

In short, an economy is referred to any system or area where economic activities are carried out. Each economy has its own character. Accordingly, the functions or activities also vary. The functioning of an economy by its activities is explained in flow chart 1.

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Flow Chart: 1
Functioning of an Economy Based on Activities



In an economy, the fundamental economic activities are production and consumption. These two activities are supported by several other activities. The ultimate aim of these activities is to achieve growth. The 'exchange activity' supports the production and consumption activities. These activities are influenced by several economic and non-economic activities. The major economic activities include transportation, banking, advertising, planning, government policy and others. The major non-economic activities are environment, health, education, entertainment, governance, regulations etc. In addition to these supporting activities, external activities from other economies such as import, export, international relations, emigration, immigration, foreign investment, foreign exchange earnings, etc. also influence the entire functioning of the economy.

Economies can be classified into different types based on the

1. **Status of Development:** Developed, underdeveloped, undeveloped and developing economies.
2. **System of Activities:** Capitalist, Socialist and Mixed Economies.
3. **Scale of Activities:** Small and Large Economies.
4. **Nature of Functioning:** Static and Dynamic Economies.
5. **Nature of Operation:** Closed and Open Economies.
6. **Nature of Advancement:** Traditional and Modern Economies.
7. **Level of National Income:** Low Income, Middle Income and High Income Economies.

1.7 Economic Systems



Economic System refers to the manner in which individuals and institutions are connected together to carry out economic activities in a particular area. It is the methodology of doing economic activities to meet the needs of the society. There are three major types of economic systems. They are:

1. Capitalist Economy (Capitalism),
2. Socialist Economy (Socialism)and
3. Mixed Economy (Mixedism)

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Globalism

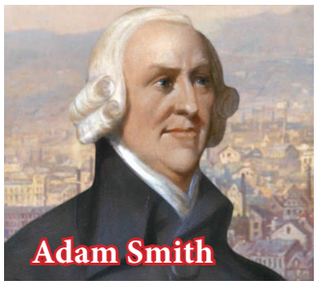
The term coined by Manfred D Steger (2002) to denote the new market ideology of globalisation that connects nations together through international trade and aiming at global development. This ideology is also termed as 'Extended Capitalism'.

Capitalism and socialism are two extreme and opposite approaches. In capitalism, there is total freedom and private ownership of means of production. In socialism, there is no freedom for private and there is public ownership of means of production. Mixedism denotes the Co-existence of capitalism and socialism. The features, merits and demerits of various economic systems are discussed below.



1.7.1 Capitalist Economy (Capitalism)

Adam Smith is the 'Father of Capitalism'. Capitalist economy is also termed as a free economy (Laissez faire, in Latin) or market economy where the role of the government is minimum and market determines the economic activities.



The means of production in a Capitalist economy are privately owned. Manufacturers produce goods and services with profit motive. The private individual has the freedom to undertake any occupation and develop any skill. The USA, West Germany, Australia and Japan are the best examples for Capitalist economies. However, they do undertake large social welfare measures to safeguard the downtrodden people from the market forces.

Features of Capitalist Economy

1. **Private Ownership of Property and Law of Inheritance:** The basic feature of capitalism is that all resources namely, land, capital, machines, mines etc. are owned by private individuals. The owner has the right to own, keep, sell or use these resources according to his will. The property can be transferred to heirs after death.
2. **Freedom of Choice and Enterprise:** Each individual is free to carry out any occupation or trade at any place and produce any commodity. Similarly, consumers are free to buy any commodity as per their choice.
3. **Profit Motive:** Profit is the driving force behind all economic activities in a Capitalist economy. Each individual and organization produce only those goods which ensure high profit. Advance technology, division of labour, and specialisation are followed. The golden rule for a producer under capitalism is 'to maximize profit.'

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4. **Free Competition:** There is free competition in both product market and factor market. The government or any authority cannot prevent firms from buying or selling in the market. There is competition between buyers and sellers.
5. **Price Mechanism:** Price mechanism is the heart of any Capitalist economy. All economic activities are regulated through price mechanism i.e, market forces of demand and supply.
6. **Role of Government:** As the price mechanism regulates economic activity, the government has a limited role in a Capitalist economy. The government provides basic services such as, defence, public health, education, etc.
7. **Inequalities of Income:** A capitalist society is divided into two classes of people viz 'haves' and have - nots are those who own property and 'have-nots' who do not own property but work for their living. The outcome of this situation is that the rich become richer and poor become poorer. Here, economic inequality goes on increasing.

Merits of Capitalism

1. **Automatic Working:** Without any government intervention, the economy works automatically.
2. **Efficient Use of Resources:** All resources are put into optimum use.
3. **Incentives for Hard work:** Hard work is encouraged and entrepreneurs get more profit for more efficiency.
4. **Economic Progress:** Production and productivity levels are very high in Capitalist economies.
5. **Consumers Sovereignty:** All production activities are aimed at satisfying the consumers. Consumers' desire determines what to produce. so they are like sovereigns.
6. **Higher Rates of Capital Formation:** Increase in saving and investment leads to higher rates of capital formation.
7. **Development of New Technology:** As profit is aimed at, producers invest on new technology and produce quality goods.

Demerits of Capitalism

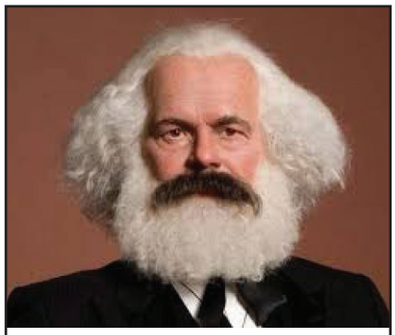
1. **Concentration of Wealth and Income:** Capitalism causes concentration of wealth and income in a few hands and thereby increases inequalities of income.
2. **Wastage of Resources:** Large amount of resources are wasted on competitive advertising and duplication of products.
3. **Class Struggle:** Capitalism leads to class struggle as it divides the society into capitalists and workers.
4. **Business Cycle:** Free market system leads to frequent violent economic fluctuations and crises.
5. **Production of non essential goods:** Even the harmful goods are produced if there is possibility to make profit from them.

1.7.2 Socialist Economy (Socialism)

The **Father of Socialism** is Karl Marx. Socialism refers to a system of total planning, public ownership and state control on economic activities. Socialism is defined as a way of organizing a society in which major industries are owned and controlled by the government, A Socialist

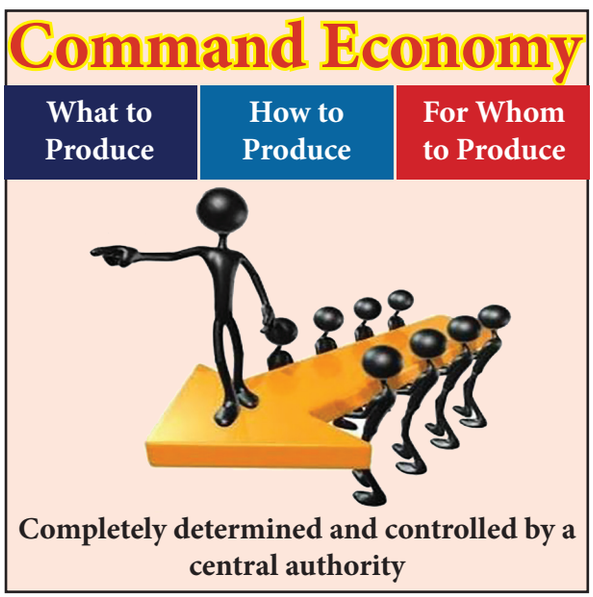
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economy is also known as 'Planned Economy' or 'Command Economy'.



Karl Marx
- Father of Socialism

In a Socialist economy, all the resources are owned and operated by the government. Public welfare is the main motive behind all economic activities. It aims at equality in the distribution of income and wealth and equal opportunity for all. Russia, China, Vietnam, Poland and Cuba are the examples of socialist economies. But, now there are no absolutely socialist economies.



Features of Socialism:

1. **Public Ownership of Means of Production:** All resources are owned by the government. It means that all the factors of production are nationalized and managed by the public authority.
2. **Central Planning:** Planning is an integral part of a Socialist economy. In this system, all decisions are undertaken by the central planning authority.
3. **Maximum Social Benefit:** Social welfare is the guiding principle behind all economic activities. Investments are planned in such a way that the benefits are distributed to the society at large.
4. **Non-existence of Competition:** Under the socialist economic system there is absence of competition in the market. The state has full control over production and distribution of goods and services. The consumers will have a limited choice.
5. **Absence of Price Mechanism:** The pricing system works under the control and regulation of the central planning authority.
6. **Equality of Income:** Another essential feature of socialism is the removal and reduction of economic inequalities. Under socialism private property and the law of inheritance do not exist.
7. **Equality of Opportunity:** Socialism provides equal opportunity for all through free health, education and professional training.
8. **Classless Society:** Under socialism, there is a classless society and so no class conflicts. In a true socialist society, everyone is equal as far as economic status is concerned.

Merits of Socialism

1. **Reduction in Inequalities:** No one is allowed to own and use private property to exploit others.

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2. **Rational Allocation of Resources:** The central planning authority allocates the resources in a planned manner. Wastages are minimised and investments are made in a pre planned manner.

3. **Absence of Class Conflicts:** As inequalities are minimum, there is no conflict between rich and poor class. Society functions in a harmonious manner.

4. **End of Trade Cycles:** Planning authority takes control over production and distribution of goods and services. Therefore, economic fluctuations can be avoided.

5. **Promotes Social Welfare:** Absence of exploitation, reduction in economic inequalities, avoidance of trade cycles and increase in productive efficiency help to promote social welfare.

Demerits of Socialism

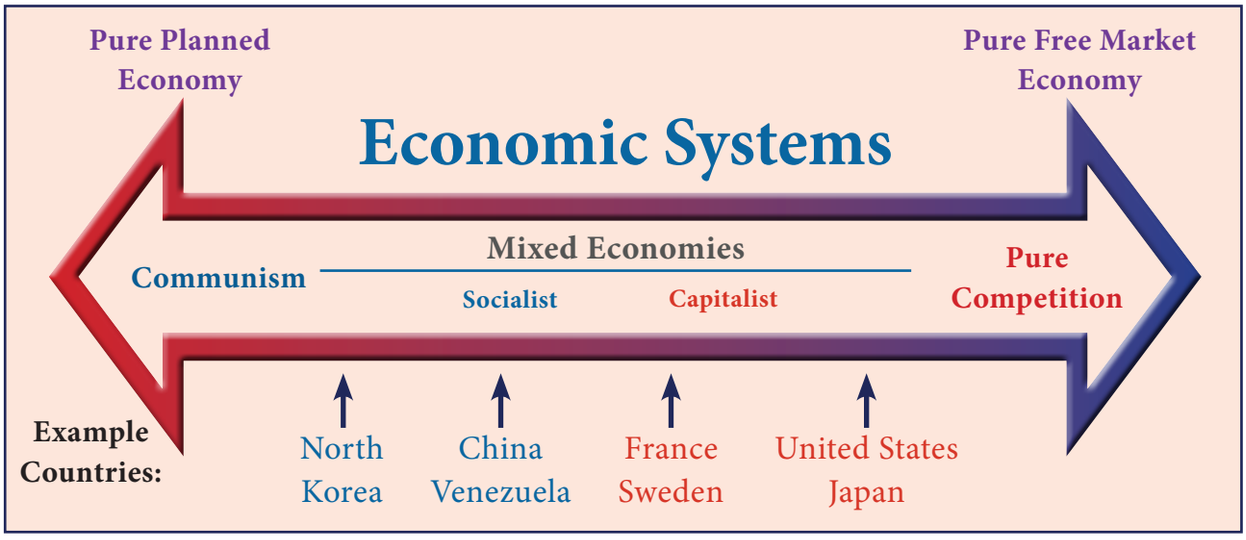
1. **Red Tapism and Bureaucracy:** As decisions are taken by government agencies, approval of many officials and movement of files from one table to the other takes time and leads to red tapism.

2. **Absence of Incentive:** The major limitation of socialism is that this system does not provide any incentive for efficiency. Therefore, productivity also suffers.

3. **Limited Freedom of Choice:** Consumers do not enjoy freedom of choice over the consumption of goods and services.

4. **Concentration of Power:** The State takes all major decisions. The private sector takes no initiative in making economic decisions. Hence, the State is more powerful and misuse of power can also take place.

1.7.3 Mixed Economy (Mixedism):



In a mixed economy system both private and public sectors co-exist and work together towards economic development. It is a combination of both capitalism and socialism. It tends to eliminate the evils of both capitalism and socialism.

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In these economies, resources are owned by individuals and the government. India, England, France and Brazil are the examples of mixed economy.

Features of Mixed Economy

1. **Ownership of Property and Means of Production:** The means of production and properties are owned by both private sector and public sector. Public and Private sectors have the right to purchase, use or transfer their resources.
2. **Coexistence of Public and Private Sectors:** In mixed economies, both private and public sectors coexist. Private industries undertake activities primarily for profit. Public sector firms are owned by the government with a view to maximize social welfare.
3. **Economic Planning:** The central planning authority prepares the economic plans. National plans are drawn up by the Government and both private and public sectors abide. In general, all sectors of the economy function according to the objectives, priorities and targets laid down in the plan.
4. **Solution to Economic Problems:** The basic problems of what to produce, how to produce, for whom to produce and how to distribute are solved through the price mechanism as well as state intervention.
5. **Freedom and Control:** Though private sector has freedom to own resources, produce goods and services and distribute the same, the overall control on the economic activities rests with the government.

Merits of Mixed Economy

1. **Rapid Economic Growth:** The best advantage of mixed economy is that it promotes rapid economic growth. Thus, both public requirements and private needs are taken care of.

2. **Balanced Economic Growth:** Mixedism promotes balanced growth of the economy. It promotes balanced growth between agriculture and industry, consumer goods and capital goods, rural and urban areas etc.

3. **Proper Utilization of Resources:** In a mixed economy, the government can ensure proper utilization of resources. The government controls most of the important activities directly and the private sector indirectly.

4. Economic Equality: The government uses progressive rates of taxation for levying income tax to bring about economic equality.

5. **Special Advantages to the Society:** The government safeguards the interest of the workers and weaker sections by legislating on minimum wages, and rationing, establishing fair price shops and formulating social welfare measures.

Demerits of Mixed Economy

1. **Lack of Coordination:** The greatest drawback of mixedism is lack of coordination between public sector and private sector. As both work with divergent motives, it creates many coordination related problems.

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2. **Competitive Attitude:** It is expected that both government and private should work with a complementary spirit towards the welfare of the society, but in reality they are competitive in their activities.

3. **Inefficiency:** Some people criticise that most of the public sector enterprises remain inefficient due to lethargic bureaucracy, red tapism and lack of motivation. But this observation is not absolute and unbiased.

4. **Fear of Nationalization:** In a mixed economy, the fear of nationalization discourages the private entrepreneurs in their business operations and innovative initiatives.

5. **Widening Inequality:** Ownership of resources, laws of inheritance and profit motive of people widens the gap between the rich and the poor.

Comparison of Different Economic Systems

S.No.	Features	Capitalism	Socialism	Mixedism
1	Ownership of Means of Production	Private Ownership	Public Ownership	Private Ownership and Public Ownership
2	Economic Motive	Profit	Social Welfare	Social Welfare and Profit Motive
3	Solution of Central Problems	Free Market System	Central Planning System	Central Planning System and Free Market System
4	Government Role	Interanal Regulation only	Complete Involvement	Limited Role
5	Income Distribution	Unequal	Equal	Less unequal
6	Nature of Enterprise	Private Enterprise	Government Enterprise	Both Private and State Enterprises
7	Economic Freedom	Complete Freedom	Lack of Freedom	Limited Freedom
8	Major Problem	Inequality	Inefficiency	Inequality and Ineffiency

1.8 Concepts of Macro Economics

The important concepts used in macro economics are presented below:

1.8.1. Stock and Flow Variables

Variables used in economic analysis are classified as stock and flow. Both stock and flow variables may increase or decrease with time.

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- **Stock** refers to a quantity of a commodity measured at a point of time. In macro economics, money supply, unemployment level, foreign exchange reserves, capital etc are examples of stock variables.

- **Flow variables** are measured over a period of time. National Income, imports, exports, consumption, production, investment etc are examples of flow variables.

- **Economic Models** A model is a simplified representation of real situation. Economists use models to describe economic activities, their relationships and their behaviour. A model is an explanation of how the economy, or part of the economy, works. Most economic models are built with mathematics, graphs and equations, and attempt to explain relationships between economic variables. The commonly used economic models are the supply-demand models and circular flow models and Smith models.

1.9 Circular Flow of Income



The circular flow of income is a model of an economy showing connections between different sectors of an economy. It shows flows of income, goods and services and factors of production between economic agents such as firms, households, government and nations. The circular flow analysis is the basis of national accounts and macroeconomics.

There are three models of circular flow of income, representing the major economic systems.

1. **Two Sector Model:** It is for a simple economy with households and firms.

2. **Three Sector Model:** It is for a mixed and closed economy with households, firms and government.

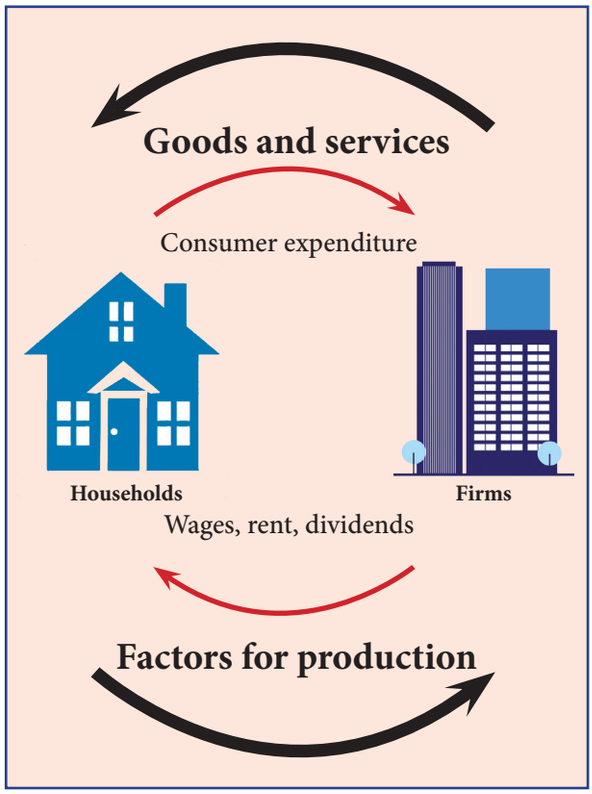
3. **Four Sector Model:** It is for an open economy with households, firms, government and rest of the world (External sector).

1.9.1 Circular Flow of Income in a Two-Sector Economy:

There are only two sectors namely, household sector and firm sector.

(i) Household Sector: The household sector is the sole buyer of goods and services, and the sole supplier of factors of production, i.e., land, labour, capital and organisation. It spends its entire income on the purchase of goods and services produced by the business sector. The household sector receives income from firm sector by providing the factors of production owned by it.

(ii) Firms: The firm sector generates its revenue by selling goods and services to the household sector. It hires the factors of production, i.e., land, labour, capital and organisation, owned by the household sector. The firm sector sells the entire output to households.



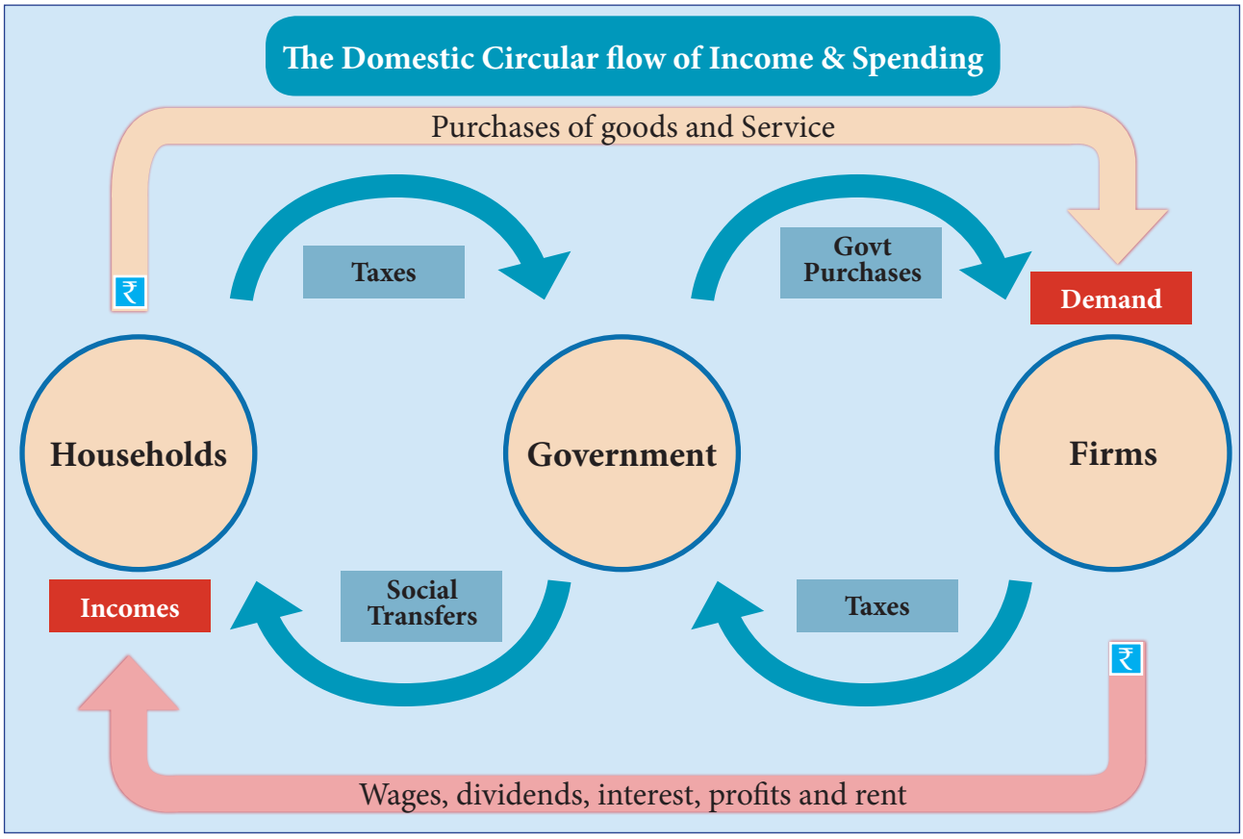
In a two-sector economy, production and sales are equal and there will be a circular flow of income and goods. The outer circle represents real flow (factors and goods) and the inner circle represents the monetary flow (factor prices and commodity prices). Real flow indicates the factor services flow from household sector to the business sector, and in turn goods and services flow from business sector to the household. The basic identities of the two-sector economy are as under:

$$Y = C + I$$

Where

Y is Income; C is Consumption; I is investment

1.9.2. Circular Flow of Income in a Three-Sector Economy:



In addition to household and firms, inclusion of the government sector makes this model a three-sector model. The government levies taxes on households and firms,

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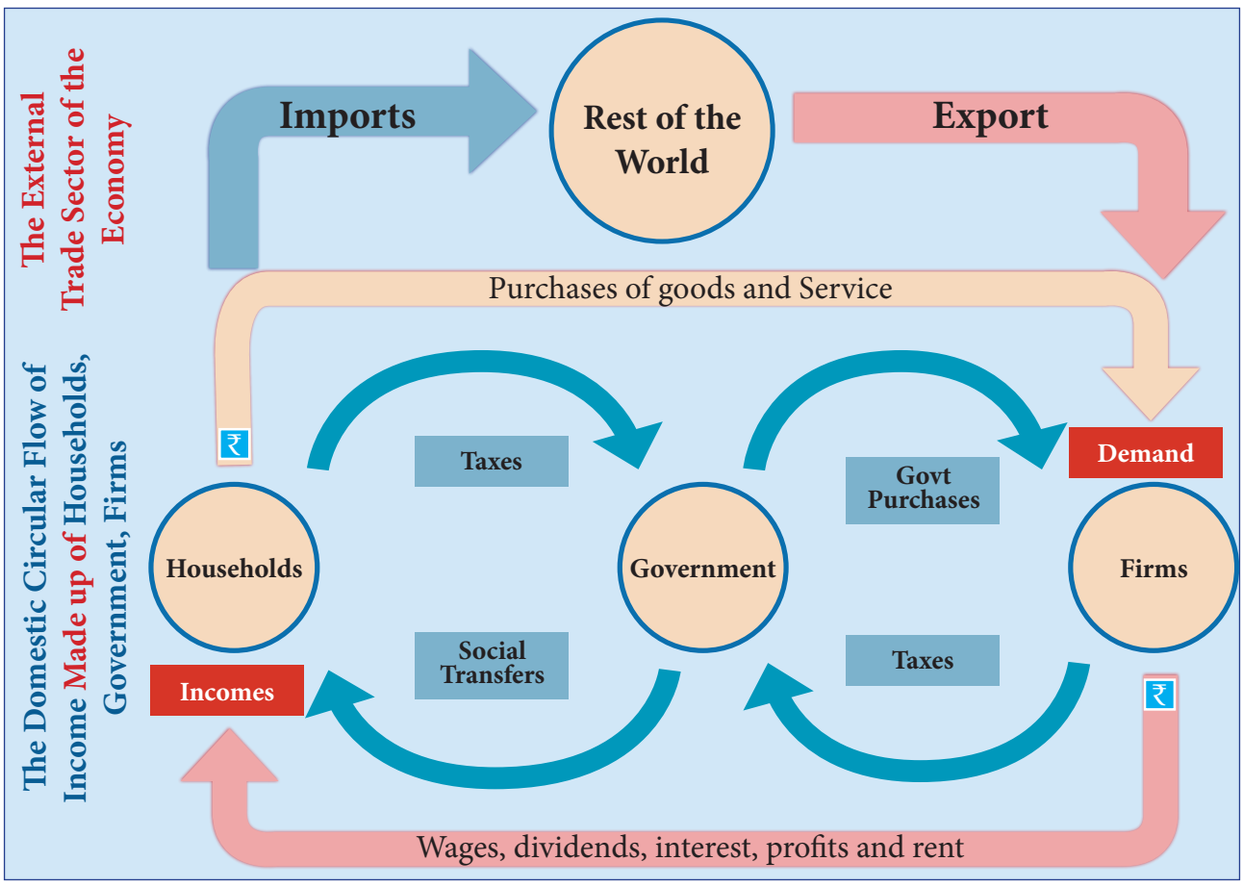
purchases goods and services from firms, and firms receive factors of production from household sector. On the other hand, the government also makes social transfers such as pension, relief, subsidies to the households. Similarly, Government pays the firms for the purchases of goods and services. The Flow Chart illustrates three-sector economy model:

Under three sector model, national income (Y) is obtained by adding Consumption expenditure (C), Investment expenditure (I) and Government expenditure (G).

Therefore:

$$Y = C + I + G$$

1.9.3 Circular Flow of Income in a Four-Sector Economy:



In a Four-sector economy, in addition to household, firms and government, a fourth sector namely, external sector is included. In real life, only four-sector economy exists. This model is composed of four sectors namely,

(i) Households, (ii) Firms,
(iii) Government, (iv) External sector

The external sector comprises exports and imports. It is illustrated in the Flow Chart.

In four-sector economy, expenditure for the entire economy include domestic expenditure (C+I+G) and net exports (X– M). Therefore,

$$Y = C + I + G + (X - M)$$

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Summary

Macroeconomics studies the behavior and performance of an economy as a whole. It covers the functioning, performance and growth of an economy. It examines the macro aspects such as employment, national income, inflation, business cycle, poverty, inequality, disparity, investment and saving, capital formation, infrastructure development, banking, public finance, international trade, balance of trade and balance of payments, exchange rate and economic growth. Economic models based on economic variables are useful in understanding an economy. Circular Flow Models provide a base to understand the functioning of a macro economy.

An economy could be classified on the basis of economic systems such as Capitalist economy, Socialist economy and mixed economy. However, nowadays it is difficult to find 100 percent capitalist system, Socialist system or perfectly mixed economy.

Glossary

- **Macroeconomics :** The branch of economics that studies the behaviour and performance of an economy as a whole
- **Economic System :** The manner in which individuals and institutions are connected together to carry out economic activities in a particular area
- **Capitalism :** The system where the means of production are privately owned and market determines the economic activities.
- **Socialism :** A way of organizing a society in which major economic activities are owned and controlled by the government rather than by individual people and companies
- **Mixedism :** An ideology that mixes or combines the principles of Capitalism (Private Role) and Socialism (Government Role) in an economy.
- **Globalism :** An economic system where the economic activities of a nation are inter connected and inter dependent on each other nation.
- **Stock :** A quantity of a commodity that is constant at a point of time (Static)
- **Flow :** Variables measured over a period of time. (Dynamic)
- **Economic Model** : It is an explanation of how the economy, or part of the economy, works.
- **Circular Flow :** It shows flows of income, goods and services and factors of production between economic agents such as firms, households, government and nations.

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MODEL QUESTIONS

Part-A

Multiple Choice Questions

1. The branches of the subject Economics are _____.

   a) Wealth and welfare
   b) production and consumption
   c) Demand and supply
   d) micro and macro

2. Who coined the word 'Macro'?

   a) Adam Smith
   b) J M Keynes
   c) Ragnar Frisch
   d) Karl Marx

3. Who is regarded as the Father of Modern Macro Economics?

   a) Adam Smith
   b) J M Keynes
   c) Ragnar Frisch
   d) Karl Marx

4. Identify the other name for Macro Economics.

   a) Price Theory
   b) Income Theory
   c) Market Theory
   d) Micro Theory

5. Macro economics is a study of _____.

   a) individuals
   b) firms
   c) a nation
   d) aggregates

6. Indicate the contribution of J M Keynes to economics.

   a) Wealth of Nations
   b) General Theory
   c) Capital
   d) Public Finance

   C9HTE

7. A steady increase in general price level is termed as_____.

   a) wholesale price index
   b) Business Cycle
   c) Inflation
   d) National Income

8. Identify the necessity of Economic policies.

   a) to solve the basic problems
   b) to overcome the obstacles
   c) to achieve growth
   d) all the above

9. Indicate the fundamental economic activities of an economy.

   a) Production and Distribution
   b) Production and Exchange
   c) Production and Consumption
   d) Production and Marketing

10. An economy consists of _____.

    a) consumption sector
    b) Production sector
    c) Government sector
    d) All the above

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11. Identify the economic system where only private ownership of production exists.

a) Capitalist Economy
b) Socialist Economy
c) Globalist Economy
d) Mixed Economy

12. Economic system representing equality in distribution is _____.

a) Capitalism
b) Globalism
c) Mixedism
d) Socialism

13. Who is referred as 'Father of Capitalism'?

a) Adam Smith
b) Karl Marx
c) Thackeray
d) J M Keynes

14. The country following Capitalism is _____ .

a) Russia
b) America
c) India
d) China

15. Identify The Father of Socialism.

a) J M Keynes
b) Karl Marx
c) Adam Smith
d) Samuelson

16. An economic system where the economic activities of a nation are done both by the private and the public sectors together is termed as_____.

a) Capitalist Economy
b) Socialist Economy
c) Globalist Economy
d) Mixed Economy

17. Quantity of a commodity measured at a point of time is termed as _____.

a)production
b) stock
c) variable
d) flow

18. Identify the flow variable.

a) money supply
b) assets
c) income
d) foreign exchange reserves

19. Identify the sectors of a Two Sector Model.

a) Households and Firms
b) Private and Public
c) Internal and External
d) Firms and Government

20. The Circular Flow Model that represents an open Economy.

a) Two Sector Model
b) Three Sector Model
c) Four Sector Model
d) All the above

Answers

1	2	3	4	5	6	7	8	9	10
d	c	b	b	d	b	c	d	c	d
11	12	13	14	15	16	17	18	19	20
a	d	a	b	b	d	b	c	a	c

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Part - B

Answer the following questions in one or two sentences

21. Define Macro Economics.
22. Define the term 'Inflation'.
23. What is meant by an 'Economy'?
24. Classify the economies based on the status of development.
25. What do you mean by Capitalism?
26. Define 'Economic Model'.
27. 'Circular Flow of Income' - Define.

Part - C

Answer the following questions in about a paragraph

28. State the importance of Macro Economics.
29. Describe the different types of economic systems.
30. Outline the major merits of capitalism.
31. Indicate the demerits of socialism.
32. Enumerate the features of mixed economy.
33. Distinguish between Capitalism and Globalism.
34. Briefly explain the two sector circular flow model.

Part - D

Answer the following questions in one page

35. Discuss the scope of Macro Economics.
36. Illustrate the functioning of an economy based on its activities.
37. Compare the features of Capitalism, Secularism and Mixedism.

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ACTIVITY

1. Internet Based Activity:

Each student may be asked allotted FOUR countries. The students may be given the responsibility of collecting basic information about each country and present them in chart papers. The list of geo, politic, socio-economic and other information to be compiled may be listed by the course teacher. Students may be asked to point out the economic system adopted in those countries. Internet sources may be used for doing this activity.

2. Role Play Activity:

Students may be grouped in to Four groups, each one representing a sector of the FOUR Sector Model. In specific, Household sector, Business Sector, Government Sector and External sector. Each sector may decide on their activities and understand how the flow of income and goods and services takes place between sectors. The class teacher may initiate the activities and do the moderator role.

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CHAPTER

2

National Income

"The concept of national income is an indispensable preparation for tackling the great issues of unemployment, inflation and growth".

- Samuelson

Learning Objectives

1. To understand the meaning of national income and some basic concepts of national income.
2. To know the methods of measuring national income.

2.1 Introduction

National Income provides a comprehensive measure of the economic activities of a nation. It denotes the country's purchasing power. The growth of an economy is measured by the rate at which its real national income grows over time. National income thus serves as an instrument of economic planning. Further, national income is one of the most significant macroeconomic variables. Thus, a clear understanding of the meaning, concepts, measurement and uses of national income is essential.

Nobel laureate Simon Kuznets first introduced the concept of national income.

2.2 Meaning of National Income

In common parlance, National Income means the total money value of all final goods and services produced in a country during a particular period of time (one year).



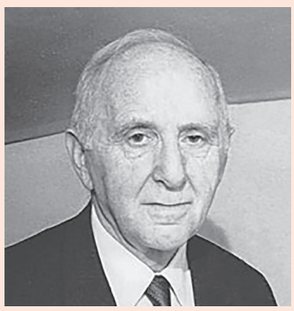
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2.3 Definitions

"The labour and capital of a country acting on its natural resources produce annually a certain net aggregate of commodities, material and immaterial including services of all kinds. This is the true net annual income or revenue of the country or national dividend".

-Alfred Marshall.

GDP and its detractors.



Simon Kuznets, (Creator of GDP) 1932

The welfare of a nation can scarcely be inferred from a measurement of national income as defined by the GDP... goals for more growth should specify of what and for what.

"The net output of the commodities and services flowing during the year from the country's productive system into the hands of the ultimate consumers or into net addition to the country's stock of capital goods".

- Simon Kuznets.

2.4 Basic concepts of national income

The following are some of the concepts used in measuring national income.

2.4.1. GDP
2.4.2. GNP
2.4.3. NNP
2.4.4. NNP at factor cost
2.4.5. Personal Income
2.4.6. Disposable Income
2.4.7. Per capita Income
2.4.8. Real Income
2.4.9 GDP deflator

2.4.1. Gross Domestic Product (GDP)

GDP is the total market value of final goods and services produced within the country during a year. This is calculated at market prices and is known as GDP at market prices.

GDP by expenditure method at market prices = C + I + G + (X – M)

Where C – consumption goods;
I – Investment goods;
G – Government purchases;
X – Exports; M – Imports
(X – M) is net export which can be positive or negative.

a) Net Domestic Product (NDP)

NDP is the value of net output of the economy during the year. Some of the country's capital equipment wears out or becomes outdated each year during the production process. Thus

Net Domestic Product = GDP - Depreciation.

2.4.2 Gross National Product (GNP)

GNP is the total measure of the flow of final goods and services at market value resulting from current production in a country during a year, including net

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income from abroad. GNP includes five types of final goods and services :

(1) value of final consumer goods and services produced in a year to satisfy the immediate wants of the people which is referred to as consumption (C);

(2) gross private domestic investment in capital goods consisting of fixed capital formation, residential construction and inventories of finished and unfinished goods which is called gross investment (I) ;

(3) goods and services produced or purchased by the government which is denoted by (G) ; and

(4) net exports of goods and services, i.e., the difference between value of exports and imports of goods and services, known as (X-M) ; Net factor incomes from abroad which refers to the difference between factor incomes (wage, interest, profits) received from abroad by normal residents of India and factor incomes paid to the foreign residents for factor services rendered by them in the domestic territory in India (R-P);

(5) GNP at market prices means the gross value of final goods and services produced annually in a country plus net factor income from abroad (C + I + G + (X-M) + (R-P)).

GNP at Market Prices = GDP at Market Prices + Net Factor income from Abroad.

2.4.3 Net National Product (NNP) (at Market price)

Net National Product refers to the value of the net output of the economy during the year. NNP is obtained by deducting the value of depreciation, or replacement allowance of the capital assets from the GNP. It is expressed as,

NNP = GNP – depreciation allowance.

(depreciation is also called Capital Consumption Allowance + Indirect taxes)

2.4.4 NNP at Factor cost

NNP refers to the market value of output. Whereas NNP at factor cost is the total of income payment made to factors of production. Thus from the money value of NNP at market price, we deduct the amount of indirect taxes and add subsidies to arrive at the net national income at factor cost.

NNP at factor cost = NNP at Market prices – Indirect taxes + Subsidies.

2.4.5 Personal Income

Personal income is the total income received by the individuals of a country from all sources before payment of direct taxes in a year. Personal income is never equal to the national income, because the former includes the transfer payments whereas they are not included in national income. Personal income is derived from national income by deducting undistributed corporate profit, and employees' contributions to social security schemes and adding transfer payment.

Personal Income = National Income – (Social Security Contribution and undistributed corporate profits) + Transfer payments

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2.4.6 Disposable Income

Disposable Income is also known as Disposable personal income. It is the individuals income after the payment of income tax. This is the amount available for households for consumption.

Disposable Income = Personal income – Direct Tax.

As the entire disposable income is not spent on consumption,

Disposal income = consumption + saving.

2.4.7 Per Capita Income

The average income of a person of a country in a particular year is called Per Capita Income. Per capita income is obtained by dividing national income by population.



$$\text{Per Capita income} = \frac{\text{National Income}}{\text{Population}}$$



2.4.8 Real Income

Nominal income is national income expressed in terms of a general price level of a particular year in other words, real income is the buying power of nominal income. National income is the final value of goods and services produced and expressed in terms of money at current prices. But it does not indicate the real state of the economy. The real income is derived as follows:

$$\text{Real Income at constant price} = \text{National Income at current price} \div P_1 / P_0$$

P_1 – Price index during current year;
P_0 – Price index during base year

2.4.9 GDP deflator

GDP deflator is an index of price changes of goods and services included in GDP. It is a price index which is calculated by dividing the nominal GDP in a given year by the real GDP for the same year and multiplying it by 100.

$$\text{GDP deflator} = \frac{\textit{Nominal GDP}}{\textit{Real GDP}} \times 100$$

2.5 Methods of Measuring National Income



All goods and services produced in the country must be counted and converted against money value during a year. Thus, whatever is produced is either used for consumption or for saving. Thus, national output can be computed at any of three levels, viz., production, income and expenditure. Accordingly, there are three methods that are used to measure national income.

1. Production or value added method
2. Income method or factor earning method
3. Expenditure method

And if these methods are done correctly, the following equation must hold

Output = Income = Expenditure

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GDP - By Sum of Spending, Factor Incomes or Output

GDP (Expenditure)	GDP (Factor Incomes)	GDP (Value of Output)

• Consumption
• Government spending
• Investment spending
• Change in value of stocks
• Exports
• –Imports
• = GDP (known as aggregate demand)
	• Income from people in jobs and in self employment (e.g. wages and salaries)
	• Profits of private sector business
	• Rent income from the ownership of land
		• Value added from each of the main economic sectors
		• These sectors are
		  • Primary sector
		  • Secondary sector
		  • Tertiary sector

This is because the three methods are circular in nature. It begins as production, through recruitments of factors of production, generating income and going as incomes to factors of production.

2.5.1 Product Method

Product method measures the output of the country. It is also called inventory method. Under this method, the gross value of output from different sectors like agriculture, industry, trade and commerce, etc., is obtained for the entire economy during a year. The value obtained is actually the GNP at market prices. Care must be taken to avoid double counting.

The value of the final product is derived by the summation of all the values added in the productive process. To avoid double counting, either the value of the final output should be taken into the estimate of GNP or the sum of values added should be taken.

In India, the gross value of the farm output is obtained as follows :

(i) Total production of 64 agriculture commodities is estimated. The output of each crop is measured by multiplying the area sown by the average yield per hectare.

(ii) The total output of each commodity is valued at market prices.

(iii) The aggregate value of total output of these 64 commodities is taken to measure the gross value of agricultural output.

(iv) The net value of the agricultural output is measured by making deductions for the cost of seed, manures and fertilisers, market charges, repairs and depreciation from the gross value.

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Similarly, the gross values of the output of animal husbandry, forestry, fishery, mining and factory establishments are obtained by multiplying their estimates of total production with market prices. Net value of the output in these sectors is derived by making deductions for cost of materials used in the process of production and depreciation allowances, etc. from gross value of output.

Net value of each sector measured in this way indicates the net contribution of the sector to the national income.

Precautions

The product method is followed in the underdeveloped countries, but it is less reliable because the margin of error in this method is large. In India, this method is applied to agriculture, mining and manufacturing, including handicrafts.

1. Double counting is to be avoided under value added method. Any commodity which is either raw material or intermediate good for the final production should not be included. For example, value of cotton enters value of yarn as cost, and value of yarn in cloth and that of cloth in garments. At every stage value added only should be calculated.
2. The value of output used for self consumption should be counted while measuring national income.
3. In the case of durable goods, sale and purchase of second hand goods (for example pre owned cars) should not be included.

2.5.2. Income Method (Factor Earning Method)

This method approaches national income from the distribution side. Under this method, national income is calculated by adding up all the incomes generated in the course of producing national product.

Steps involved

1. The enterprises are classified into various industrial groups.
2. Factor incomes are grouped under labour income, capital income and mixed income.
   i) Labour income - Wages and salaries, fringe benefits, employer's contribution to social security.
   ii) Capital income – Profit, interest, dividend and royalty
   iii) Mixed income – Farming, sole proprietorship and other professions.
3. National income is calculated as domestic factor income plus net factor incomes from abroad. In short,

$$Y = w + r + i + \pi + (R-P)$$

w = wages, r = rent, i = interest, π = profits, R = Exports and P = Imports

This method is adopted for estimating the contributions of the remaining sectors, viz., small enterprises, banking and insurance, commerce and transport, professions, liberal arts and domestic service, public authorities, house property and foreign sector transaction.

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Data on income from abroad (the rest of the world sector or foreign sector) are obtained from the account of the balance of payments of the country.

Precautions

While estimating national income through income method, the following precautions should be taken.

Items not to be included

1. Transfer payments are not to be included in estimation of national income as these payments are not received for any services provided in the current year such as pension, social insurance etc.
2. The receipts from the sale of second hand goods should not be treated as part of national income as they do not create new flow of goods or services in the current year.
3. Windfall gains such as lotteries are also not to be included as they do not represent receipts from any current productive activity.
4. Corporate profit tax should not be separately included as it has been already included as a part of company profit.

Items to be included

1. Imputed value of rent for self occupied houses or offices is to be included.
2. Imputed value of services provided by owners of production units (family labour) is to be included.

2.5.3. The Expenditure Method (Outlay method)

Under this method, the total expenditure incurred by the society in a particular year is added together. To calculate the expenditure of a society, it includes personal consumption expenditure, net domestic investment, government expenditure on consumption as well as capital goods and net exports. Symbolically,

$$GNP = C + I + G + (X-M)$$

C - Private consumption expenditure

I - Private Investment Expenditure

G - Government expenditure

X-M = Net exports

Precautions

1. **Second hand goods:** The expenditure made on second hand goods should not be included.
2. **Purchase of shares and bonds :** Expenditures on purchase of old shares and bonds in the secondary market should not be included.
3. **Transfer payments :** Expenditures incurred by the government like old age pension should not be included.
4. **Expenditure on intermediate goods :** Expenditure on seeds and fertilizers by farmers, cotton and yarn by textile industries are not to be included to avoid double counting. That is, only expenditure on final products are to be included.

Factor cost (FC)

There are a number of inputs that are included into a production process when producing goods and services. These inputs are commonly known as factors of production which include land, labour, capital and entrepreneurship.

Producers of goods and services incur a cost for using these factors of production. These costs are ultimately added onto the price of the product.

The factor cost refer to the cost of production that is incurred by a firm when producing goods and services.

Examples of such production costs include the cost of renting machines, purchasing machinery and land, paying salaries and wages, cost of obtaining capital, and the profit margins that are added by the entrepreneur.

The factor cost does not include the taxes that are paid to the government since taxes are not directly involved in the production process and, therefore, are not part of the direct production cost.

However, subsidies received are included in the factor cost as subsidies are direct inputs into the production.

Market price (MP)

Once goods and services are produced they are sold in a market place at a set market price.

The market price is the price that consumers will pay for the product when they purchase it from the sellers.

Taxes charged by the government will be added onto the factor price while subsides provided will be reduced from the factor price to arrive at the market price.

Taxes are added on because taxes are costs that increase the price, and subsidies are reduced because subsidies are already included in the factor cost, and cannot be double counted when market price is calculated.

Thus, **MP** = FC + Indirect Taxes - Subsidies ..... Equation (1)

Or, **FC** = MP - Indirect Taxes + Subsidies ..... Equation (2)

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National Income (NNP_{FC}) = Gross Value Added by all the production Enterprises within the Domestic Territory of the Country − Depreciation − Net Indirect Taxes + Net Factor Income from Abroad

[Where, Net Indirect Taxes = Indirect tax − Subsidies]

[Gross Value Added = Value of Output − Intermediate Consumption]

Value of Output = Sales + Change in Stock

Where, Change in Stock = Closing Stock − Opening Stock

Note: If entire out put is sold within the year, then value of output will be equal to sales itself.

or

Value of Output = Price x Quantity Sold

GDP_{MP} = Private Final Consumption + Government Final Consumption Expenditure + Gross Domestic Capital Formation + Net Exports (Exports − Imports)

2.6 Importance of National Income Analysis

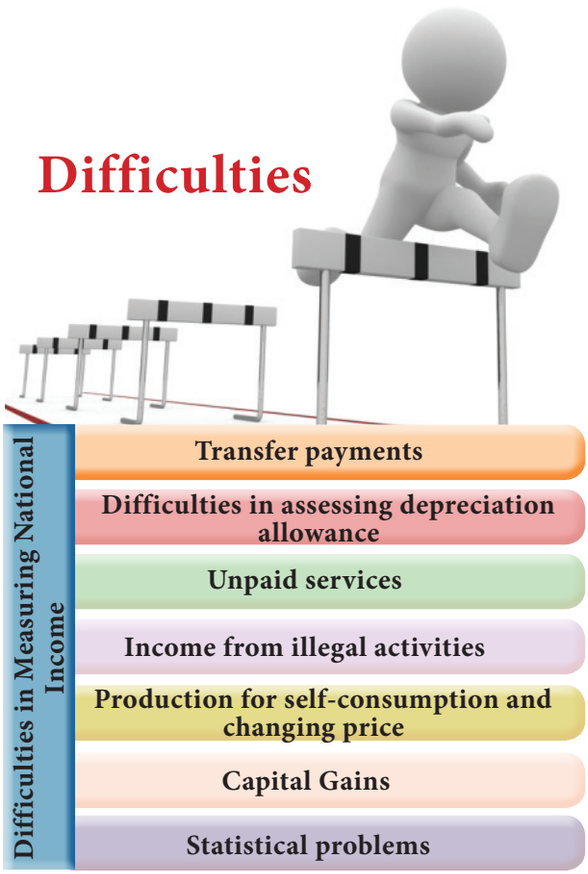
National income is of great importance for the economy of a country. Nowadays the national income is regarded as accounts of the economy, which are known as social accounts. It enables us

1. To know the relative importance of the various sectors of the economy and their contribution towards national income; from the calculation of national income, we could find how income is produced, how it is distributed, how much is spent, saved or taxed.
2. To formulate the national policies such as monetary policy, fiscal policy and other policies; the proper measures can be adopted to bring the economy to the right path with the help of collecting national income data.
3. To formulate planning and evaluate plan progress; it is essential that the data pertaining to a country's gross income, output, saving and consumption from different sources should be available for economic planning.
4. To build economic models both in short - run and long - run.
5. To make international comparison, inter - regional comparison and inter - temporal comparison of growth of the economy during different periods.
6. To know a country's per capita income which reflects the economic welfare of the country (Provided income is equally distributed)
7. To know the distribution of income for various factors of production in the country.
8. To arrive at many macro economic variables namely, Tax – GDP ratio, Current Account Deficit - GDP ratio, Fiscal Deficit - GDP ratio, Debt - GDP ratio etc.

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2.7 Difficulties in Measuring National Income

In India, a special conceptual problem is posed by the existence of a large, unorganised and non-monetised subsistence sector where the barter system still prevails for transacting goods and services. Here, a proper valuation of output is very difficult.



2.7.1 Transfer payments

Government makes payments in the form of pensions, unemployment allowance, subsidies, etc. These are government expenditure. But they are not included in the national income. Because they are paid without adding anything to the production processes.

During a year, Interest on national debt is also considered transfer payments because it is paid by the government to individuals and firms on their past savings without any productive work.

2.7.2 Difficulties in assessing depreciation allowance

The deduction of depreciation allowances, accidental damages, repair and replacement charges from the national income is not an easy task. It requires high degree of judgment to assess the depreciation allowance and other charges.

2.7.3 Unpaid services

A housewife renders a number of useful services like preparation of meals, serving, tailoring, mending, washing, cleaning, bringing up children, etc. She is not paid for these services. Her services are not directly included in national income. Such services performed by paid servants are included in national income. The reason for the exclusion of her services from national income is that the love and affection of a housewife in performing her domestic work cannot be measured in monetary terms. Similarly, there are a number of goods and services which are difficult to be assessed in money terms for the reason stated above, such as rendering services to friends, painting, singing, dancing, etc.

2.7.4 Income from illegal activities

Income earned through illegal activities like gambling, smuggling, illicit extraction of liquor, etc., is not included

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in national income. Such activities have value and satisfy the wants of the people but they are not considered as productive from the point of view of society.

2.7.5 Production for self-consumption and changing price

Farmers keep a large portion of food and other goods produced on the farm for self consumption. The problem is whether that part of the produce which is not sold in the market can be included in national income or not.

National income by product method is measured by the value of final goods and services at current market prices. But prices do not remain stable. They rise or fall. To solve this problem, economists calculate the real national income at a constant price level by the consumer price index.

2.7.6 Capital Gains

The problem also arises with regard to capital gains. Capital gains arise when a capital asset such as a house, other property, stocks or shares, etc. is sold at higher price than was paid for it at the time of purchase. Capital gains are excluded from national income.

2.7.7 Statistical problems

There are statistical problems, too. Great care is required to avoid double counting. Statistical data may not be perfectly reliable, when they are compiled from numerous sources. Skill and efficiency of the statistical staff and cooperation of people at large are also equally important in estimating national income.

The following are some of the statistical problems:

1. Accurate and reliable data are not adequate, as farm output in the subsistence sector is not completely informed. In animal husbandry, there are no authentic production data available.

2. Different languages, customs, etc., also create problems in computing estimates.

3. People in India are indifferent to the official inquiries. They are in most cases non-cooperative also.

4. Most of the statistical staff are untrained and inefficient.

Therefore, national income estimates in our country are not very accurate or adequate. There is at least 10 per cent margin of error, i.e., national income is overestimated or underestimated by at least 10 per cent. That is why the GDP estimates for India varies from 2 trillion US dollar to 5 trillion US dollar.

2.8 National Income and Social Accounting

National income is also being measured by the social accounting method. Under this method, the transactions among various sectors such as firms, households, government, etc., are recorded and their interrelationships traced. The social accounting framework is useful for economists as well as policy makers,

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because it represents the major economic flows and statistical relationships among various sectors of the economic system. It becomes possible to forecast the trends of economy more accurately.

2.8.1 Social Accounting and Sectors

Under this method, the economy is divided into several sectors. A sector is a group of individuals or institutions having common interrelated economic transactions. The economy is divided into the following sectors

(i) Firms,

(ii) Households,

(iii) Government,

(iv) Rest of the world and

(v) Capital sector.

- **"Firms"** undertake productive activities. Thus, they are all organizations which employ the factors of production to produce goods and services.

- **"Households"** are consuming entities and represent the factors of production, who receive payment for services rendered by them to firms. Households consume the goods and services that are produced by the firms.

Thus, firms make payment to households for their services. Households spend money incomes they received on the goods and services produced by the firms. This is a circular flow of money between these two groups.

- **"The Government sector"** refers to the economic transactions of public bodies at all levels, centre, state and local. In their work concerning social accounting, Edey and Peacock have defined government as a collective 'person' that purchases goods and services from firms. These purchases may be financed through taxation, public borrowings, or any other fiscal means. The main function of the government is to provide social goods like defence, public health, education, etc. This means satisfying the collective wants of society. However, public enterprises like Post Offices and railways are separated from the Government sector and included as "Firms".

- **"Rest of the world sector"** relates to international economic transactions of the country. It contains income, export and import transactions, external loan transactions and allied overseas investment incomes and payments.

- **"Capital sector"** refers to saving and investment activities. It includes the transactions of banks, insurance corporations, financial houses, and other agencies of the money market. These are not included under "Firms". These agencies merely provide financial assistance to the firms' activities.

While assessing sectoral contribution to GDP, the economy is divided into three namely Primary, Secondary and Tertiary sectors.

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2.8.2 National Income and Welfare

National Income is considered as an indicator of the economic wellbeing of a country. The economic progress of countries is measured in terms of their GDP per capita and their annual growth rate. A country with a higher per capita income is supposed to enjoy greater economic welfare with a higher standard of living.

But the rise in GDP or per capita income need not always promote economic welfare. The per capita income as an index of economic welfare suffers from limitations which are stated below:

1. The economic welfare depends upon the composition of goods and services provided. Incase of greater proportion of capital goods over consumer goods, the improvement in economic welfare will be lesser. Similarly the production of luxuries is meant for rich classes only.
2. Higher GDP with greater environmental hazards such as air, water and soil pollution will be of little economic welfare.
3. The production of war goods will show the increase in national output but not welfare.
4. An increase in per capita income may be due to employment of women and children or forcing workers to work for long hours. But it will not promote economic welfare.

Therefore the Physical Quality of Life Index (PQLI) is considered a better indicator of economic welfare. It includes standard of living, life expectancy at birth and literacy.

2.8.3 National Income & Erosion of national Wealth

For achieving higher GDP, larger natural resources are being depleted or damaged. This means reduction of potential for future growth. Hence, it is suggested that while assessing national income, loss of natural resources should be subtracted from national income.

2.8.4 National income in terms of US$

When Indian national income is expressed in terms of US$, the former looks very low. If Purchasing Power Parity (PPP) method is adopted India looks better.

2.8.5 Social and Environmental Cost

While producing economic goods, many environmental and social bads are also generated. Hence, they also must be considered while enumerating National income.

Summary

The national income of a country describes the economic performance or production performance of a country. Economists, planners, government, businessmen and international agencies (IMF, World Bank, etc.,) use national income data and analyses them for various purposes. National income data help in measuring changes in the standard of living over time and also enable us to compare standard of living of different countries. Level of development of a country is also measured by using national income figures.

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Glossary

- **GNP :** Total money value of final goods and services produced in a country during a particular year (one year) including depreciation and net exports
- **NNP :** Total money value of final goods and services produced in a country during a particular year (one year) excluding depreciation including net exports
- **NNP at Factor cost :** The total of income payment made to factors of production
- **Personal Income :** Total income received by the individuals of a country before payment of direct taxes
- **Disposable income :** It is the sum of the consumption and saving of individuals after the payment of income tax
- **Per capita income :** Annual average income of a person
- **Social Accounts :** The accounts of national income considering the social cost generated by economic activities.
- **Unpaid services :** Rendering useful services like preparation of meals, washing, leaning, bringing up children, services to friends and relatives without payment
- **Capital sector :** It includes saving and investment activities.
- **Transfer payments :** Government makes payments in the form of pensions, unemployment allowance, subsides, etc.

MODEL QUESTIONS

Part – A

Multiple choice questions

1. Net National product at factor cost is also known as

   (a) National Income
   (b) Domestic Income
   (c) Per capita Income
   (d) Salary.

2. Primary sector is ……..

   (a) Industry
   (b) Trade
   (c) Agriculture
   (d) Construction.

HCWP6

3. National income is measured by using ……. methods.

   (a) Two
   (b) Three
   (c) Five
   (d) Four

4. Income method is measured by summing up of all forms of ……

   (a) Production
   (b) Taxes
   (c) expenditure
   (d) Income

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5. Which is the largest figure?

(a) Disposable income
(b) Personal Income
(c) NNP
(d) GNP

6. Expenditure method is used to estimate national income in ……..

(a) Construction sector
(b) Agricultural Sector
(c) Service sector
(d) Banking sector

7. Tertiary sector is also called as ……. sector

(a) Service
(b) Income
(c) Industrial
(d) Production

8. National income is a measure of the …… performance of an economy.

(a) Industrial
(b) Agricultural
(c) Economic
(d) Consumption

9. Per capita income is obtained by dividing the National income by ……

(a) Production
(b) Population of a country
(c) Expenditure
(d) GNP

10. GNP = ……. + Net factor income from abroad.

(a) NNP
(b) NDP
(c) GDP
(d) Personal income

11. NNP stands for …….

(a) Net National Product
(b) National Net product
(c) National Net Provident
(d) Net National Provident

12. …… is deducted from gross value to get the net value.

(a) Income
(b) Depreciation
(c) Expenditure
(d) Value of final goods

13. The financial year in India is ……

(a) April 1 to March 31
(b) March 1 to April 30
(c) March 1 to March 16
(d) January 1 to December 31

14. When net factor income from abroad is deducted from NNP, the net value is …….

(a) Gross National Product
(b) Disposable Income
(c) Net Domestic Product
(d) Personal Income

15. The value of NNP at production point is called ……

(a) NNP at factor cost
(b) NNP at market cost
(c) GNP at factor cost
(d) Per capita income

16. The average income of the country is ….

(a) Personal Income
(b) Per capita income
(c) Inflation Rate
(d) Disposal Income

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17. The value of national income adjusted for inflation is called ….

(a) Inflation Rate
(b) Disposal Income
(c) GNP
(d) Real national income

18. Which is a flow concept ?

(a) Number of shirts
(b) Total wealth
(c) Monthly income
(d) Money supply

19. PQLI is the indicator of ……

(a) Economic growth
(b) Economic welfare
(c) Economic progress
(d) Economic development

20. The largest proportion of national income comes from …….

(a) Private sector
(b) Local sector
(c) Public sector
(d) None of the above

Answers

1	2	3	4	5	6	7	8	9	10
a	c	b	d	d	a	a	c	b	c
11	12	13	14	15	16	17	18	19	20
a	b	a	c	a	b	d	c	b	a

Part – B

Answer the following questions in one or two sentences.

21. Define National Income.
22. Write the formula for calculating GNP.
23. What is the difference between NNP and NDP?
24. Trace the relationship between GNP and NNP.
25. What do you mean by the term 'Personal Income'?
26. Define GDP deflator.
27. Why is self consumption difficult in measuring national income?

Part – C

Answer the following questions in one Paragraph.

28. Write a short note on per capita income.
29. Differentiate between personal and disposable income.
30. Explain briefly NNP at factor cost.
31. Give short note on Expenditure method.

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32. What is the solution to the problem of double counting in the estimation of national income?

33. Write briefly about national income and welfare.

34. List out the uses of national income.

Part - D

Answer the following questions in about a page.

35. Explain the importance of national income.

36. Discuss the various methods of estimating the national income of a country.

37. What are the difficulties involved in the measurement of national income?

38. Discuss the importance of social accounting in economic analysis.

ACTIVITY

Compare GDP of different countries since 2001

References

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2. Keshava.S.R. Economics, New Age Internatonal Publishers, 2010
3. Mitani D.M. Macroeconomics, Himalaya Publishing House,
4. www.articlelibrary.com

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ICT CORNER

National Income

This activity enables the students to calculate the National Income.

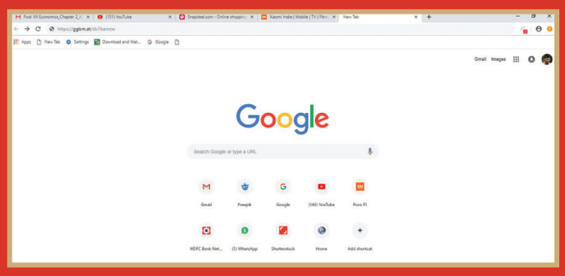


Steps 1:

- Open the Browser and type the URL given (or) Scan the QR Code. Work sheet named "Factor Cost and Market price" will open

Steps 2:

- You can change your values by typing in the boxes given in Left hand side. Right hand side all the values are calculated and shown. Check the output values. For detailed formula scroll down to next page.



Step1



Step2

Pictures are indicatives only*

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CHAPTER

3

Theories of Employment and Income

"Unemployed people suffer the demoralization, frustration and loss of self respect that come from enforced idleness".

– Wonnacott. P and Wonnacott. R

Learning Objectives

1. To understand the meaning of full employment and unemployment and its types.
2. To learn the classical theory of employment.
3. To know the importance of Keynes' theory of income and employment.

3.1 Introduction

The economic history has shown many countries facing economic problems. Out of these problems, unemployment is the most vexing. Both classical economists and Keynes have explained the relationship between employment and income. The classical economists had great faith in the law of markets articulated by J.B. Say, the French economist. J. M. Keynes is one of the greatest and most influential economists of the mid 20th century.

3.2 Meaning of Full Employment

Full employment refers to a situation in which every able bodied person who is willing to work at the prevailing wage rate, is employed. In other words full employment means that persons who are willing to work and able to work must have employment or a job; Keynes defines full employment as the absence of involuntary unemployment.

Lerner defines full employment as "that level of employment at which any further increase in spending would result

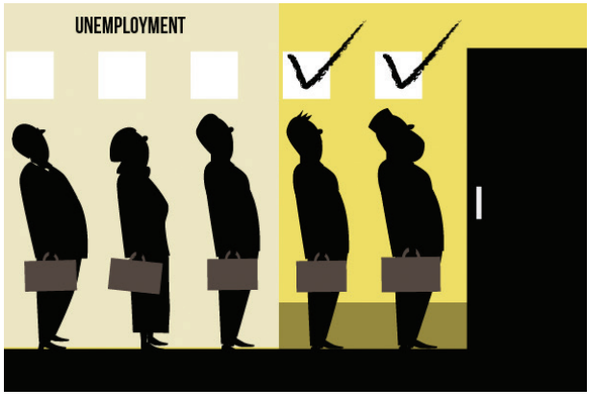
in an inflationary spiral of wages and prices".

Every economy in the world aims at attaining the level of full employment equilibrium where all its available resources are fully and efficiently employed to achieve maximum level of output. But in reality, the concept of full employment generally refers to full employment of labour force of a country.

3.3 Unemployment and its types

Unemployment is problem faced when there are people, who are willing to work and able to work but cannot find suitable jobs.

While formulating policies to solve the problem of unemployment in India for instance, we need to distinguish between the nature of unemployment in rural

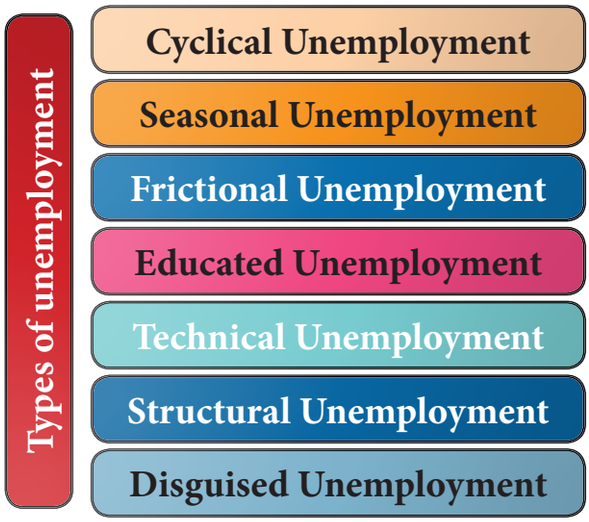


areas and in urban areas in India. India's rural economy has both unemployment and underemployment. The major feature of rural unemployment is the existence of unemployment in the form of disguised unemployment and seasonal unemployment. In India, frictional, structural and open unemployment exist in urban areas. Due to urbanization, a large number of people move from rural areas to urban areas. This migration from rural to urban areas increases the size of labour force in urban areas and adds to the already unemployed labour force.

Types of unemployment :

In developing countries like India, the nature of unemployment is different from that of developed countries. In developed countries, the unemployment is purely temporary or cyclical or frictional. But in the developing countries, it is largely structural unemployment which is due to slow rate of capital formation.

The following are the types of unemployment.



1. Cyclical Unemployment

This unemployment exists during the downturn phase of trade cycle in the economy. In a business cycle during the period of recession and depression, income and output fall leading to widespread unemployment. It is caused by

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deficiency of effective demand. Cyclical unemployment can be cured by public investment or expansionary monetary policy.

2. Seasonal Unemployment

This type of unemployment occurs during certain seasons of the year. In agriculture and agro based industries like sugar industries, production activities are carried out only in some seasons. These industries offer employment only during that season in a year. Therefore people may remain unemployed during the off season. Seasonal unemployment happens from demand side also; for example ice cream industry, holiday resorts etc.

3. Frictional Unemployment (Temporary Unemployment)

Frictional unemployment arises due to imbalance between supply of labour and demand for labour. This is because of immobility of labour, lack of necessary skills, break down of machinery, shortage of raw materials etc. When persons lose jobs and are in search of new jobs they have to wait for sometime.This period of joblessness is called frictional unemployment.

4. Educated Unemployment

Sometimes educated people are underemployed or unemployed when qualification does not match the job. Faulty education system, lack of employable skills, mass educated student turnout and preference for white collar jobs are highly responsible for educated unemployment in India.

5. Technical Unemployment

Modern technology being capital intensive requires less labourers and contributes to technological unemployment. Now a days, invention and innovations lead to the adoption of new techniques thereby the existing workers are retrenched. Labour saving devices are responsible for technological unemployment.

6. Structural Unemployment

Structural unemployment is due to drastic change in the structure of the society. Lack of demand for the product or shift in demand to other products cause this type of unemployment. For example rise in demand for mobile phones has adversely affected the demand for cameras, tape recorders etc. So this kind of unemployment results from massive and deep rooted changes in economic structure.

7. Disguised Unemployment



Disguised unemployment occurs when more people are there than what is actually required. Even if some workers are withdrawn, production does not suffer. This type of unemployment is found in agriculture. A person is said to be disguisedly unemployed if his contribution to output is less than what he can produce by working for normal

hours per day. In this situation, marginal productivity of labour is zero or less or negative.

3.4 Classical Theory of Employment

There was no single theory which could be labeled as classical theory of employment. The classical theory of employment is composed of different views of classical economists on the issue of income and employment in the economy. Adam smith wrote the book "An Enquiry into the Nature and Causes of the Wealth of Nations' in 1776. Since the publication of this book, classical theory was developed by David Ricardo, J.S.Mill, J.B.Say and A.C.Pigou.

Classical economists assumed that the economy operates at the level of full employment without inflation in the long period. They also assumed that wages and prices of goods were flexible and the competitive market existed in the economy (laissez-faire economy).

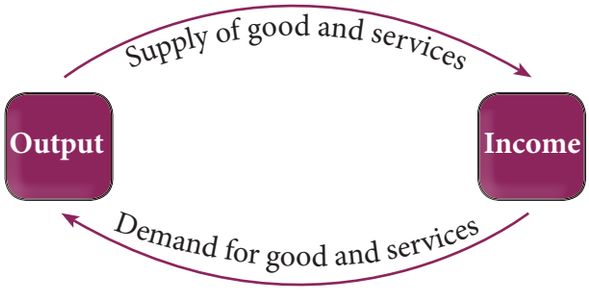
3.4.1 Say's Law of Market


J.B.Say

Say's law of markets is the core of the classical theory of employment. J.B.Say (1776 – 1832) was a French Economist and industrialist. He was influenced by the writings of Adam Smith and David Ricardo. J.B. Say enunciated the proposition that "Supply creates its own demand". Hence there cannot be general over production or the problem of unemployment in the economy.

According to Say, "When goods are produced by firms in the economy, they pay reward to the factors of production. The households after receiving rewards of the factors of production spend the amount on the purchase of goods and services produced by them. Therefore, each product produced in the economy creates demand equal to its value in the market.





In short, this classical theory explains that "A person receives his income from production which is spent on the purchase of goods and services produced by others.

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For the economy as a whole, therefore, total production equals total income".

Ex ante and Expost in Says' Law

The statement that supply creates own demand or equivalently that the aggregate investment equals the aggregate saving always holds good in the ex post sense since it is simply an accounting identity. Say's law of markets, however, states that these two are equal in ex ante sense, i.e., the total quantity which people produce i.e., aggregate supply must be equal to the toal quantity which they plan to buy i.e., aggregate demand.

Assumptions of the Say's law of market

The Say's Law of market is based on the following assumptions:

1. No single buyer or seller of commodity or an input can affect price.
2. Full employment.
3. People are motivated by self interest and self – interest determines economic decisions.
4. The laissez faire policy is essential for an automatic and self adjusting process of full employment equilibrium. Market forces determine everything right.
5. There will be a perfect competition in labour and product market.
6. There is wage-price flexibility.
7. Money acts only as a medium of exchange.
8. Long - run analysis.
9. There is no possibility for over production or unemployment.
10. Unutilized resources used until they reach full employment.
11. No Government intervention; automatic Price adjustment mechanism operated.
12. Interest rate flexibility leads to saving – Investment equality

Implications of Say's Law

1. There is no possibility for over production or unemployment.
2. If there exist unutilized resources in the economy, it is profitable to employ them up to the point of full employment. This is true under the condition that factors are willing to accept rewards on a par with their productivity.
3. As automatic price mechanism operates in the economy, there is no need for government intervention. (However, J.M. Keynes emphasized the role of the State)
4. Interest flexibility brings about equality between saving and investment.
5. Money performs only the medium of exchange function in the economy, as people will not hold idle money.

Criticisms of Say's Law

The following are the criticisms against Say's law:

1. According to Keynes, supply does not create its demand. It is not applicable where demand does not increase as much as production increases.
2. Automatic adjustment process will not remove unemployment. Unemployment can be removed by increase in the rate of investment.
3. Money is not neutral. Individuals hold money for unforeseen contingencies while businessmen keep cash reserve for future activities.

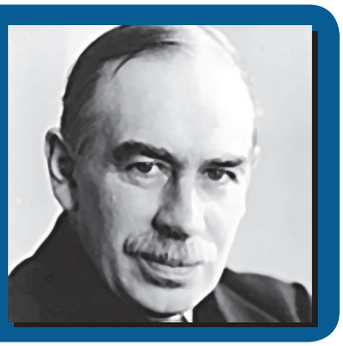
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4. Say's law is based on the proposition that supply creates its own demand and there is no over production. Keynes said that over production is possible.

5. Keynes regards full employment as a special case because there is under - employment in capitalist economies.

6. The need for state intervention arises in the case of general over production and mass unemployment.

3.5 Keynes' Theory of Employment and Income



John Maynard Keynes

Keynes's book, "The General Theory of Employment, Interest and Money" published in 1936 is a highly significant work that marked a turning point in the development of modern economic theory.

The theory of Keynes was against the belief of classical economists that the market forces in capitalist economy adjust themselves to attain equilibrium. Keynes not only criticized classical economists but also advocated his own theory of employment.

Keynes's theory was a general theory as it tried to explain all types of situations, i.e. not only equilibrium level of employment but also the concept of full employment as well as the possibility of underemployment.

Keynes's theory of employment was based on the view of the short run. According to him, the factors of production such as capital goods, supply of labour, technology and efficiency of labour remain unchanged while determining the level of employment.

John Maynard Keynes was one of the most influential economists of the 20th century. He was born in Cambridge in1883. In addition to his work as an economist he held positions such as civil servant, director of the Bank of England, and leader of British delegation of negotiators at the Bretton Woods conference at points in his career. Economic theory based on his idea is known as Keynesian economics, and it remains highly influential today, particularly in the field of macroeconomics.

3.6 Effective Demand

The starting point of Keynes's theory of employment and income is the principle of effective demand. Effective demand denotes money actually spent by the people on products of industry. The money which entrepreneurs receive is paid in the form of rent, wages, interest and profit. Therefore effective demand equals national income.



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An increase in the aggregate effective demand would increase the level of employment. A decline in total effective demand would lead to unemployment. Therefore, total employment of a country can be determined with the help of total demand of a country.

According to the Keynes's theory of employment, "Effective demand signifies the money spent on consumption of goods and services and on investment. The total expenditure is equal to the national income, which is equivalent to the national output". The relationship between employment and output of an economy depends upon the level of effective demand which is determined by the forces of aggregate supply and aggregate demand.

ED = Y = C + I = Output = Employment

Effective demand determines the level of employment in the economy. When effective demand increases, employment will increase. When effective demand decreases, the level employment will decline. The effective demand will be determined by two determinants namely consumption and investment expenditure. The consumption function depends upon income of the people and marginal propensity to consume. According to Keynes, if income increases, consumption will also increase but by less than the increase in income.

The rate of interest and marginal efficiency of capital determine the investment levels. Rate of interest depends on money supply and liquidity preference. Keynes has given importance to the concept of liquidity preference. Liquidity preference is based on three motives namely transaction motive, precautionary motive and speculative motive. MEC depends on two factors namely Prospective yield of capital asset and supply price of capital, i.e rate of interest.

(For more details see Chapter 4)

3.6.1 Aggregate Demand Function (ADF)

In the Keynesian model, output is determined mainly by aggregate demand. The aggregate demand is the amount of money which entrepreneurs expect to get by selling the output produced by the number of labourers employed. Therefore, it is the expected income or revenue from the sale of output at different levels of employment.

Aggregate demand has the following four components:

1. Consumption demand
2. Investment demand
3. Government expenditure and
4. Net Export (export – import)

The desired or planned demand (spending) is the amount that households, firms, the governments and the foreign purchasers would like to spend on domestic output. In other words, desired demand in the economy is the sum total of desired private consumption expenditure, desired investment expenditure, desired government spending and desired net exports (difference between exports and imports). Thus, the desired spending is called aggregate spending (demand), and can be expressed as:

$$AD = C + I + G + (X - M)$$

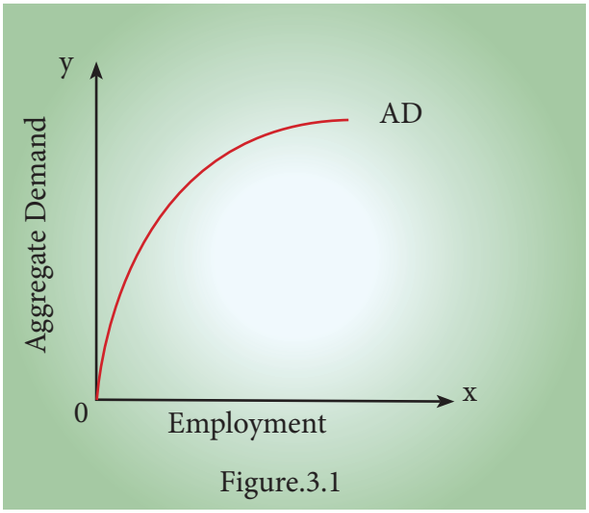


Figure.3.1

Figure 3.1. explains that aggregate demand price increases or decreases with an increase or decrease in the volume of employment. Aggregate demand curve increases at an increasing rate in the beginning and then increases at a decreasing rate. This shows that as income increases owing to increase in employment, expenditure of the economy increases at a decreasing rate.

3.6.2 Aggregate Supply Function (ASF)

Aggregate supply function is an increasing function of the level of employment. Aggregate supply refers to the value of total output of goods and services produced in an economy in a year. In other words, aggregate supply is equal to the value of national product, i.e., national income.

In other words, the aggregate supply refers to the required amount of labourers and materials to produce the necessary output. Employers hire labourers, purchase various inputs and raw materials to produce goods. Thus, production involves cost. If revenue from the sale of output produced exceeds the cost of production at a given level of employment and output, the entrepreneur would be encouraged to employ more labour and other inputs to produce more.

Aggregate supply price is the total amount of money that all entrepreneurs in an economy expect to receive from the sale of output produced by given number of labourers employed. The term 'price' refers to the amount of money received from the sale of output (sales proceeds). Hence, there are different aggregate prices for different levels of employment.

The components of aggregate supply are :

1. Aggregate (desired) consumption expenditure (C)
2. Aggregate (desired) private savings (S)
3. Net tax payments (T) (Total tax payment to be received by the government minus transfer payments, subsidy and interest payments to be incurred by the government) and
4. Personal (desired) transfer payments to the foreigners (Rf)(eg. Donations to international relief efforts)

Aggregate Supply = C + S + T + Rf = Aggregate income generated in the economy

The following figure 3.2 shows the shape of the two aggregate supply curves drawn for the assumption of fixed money wages and variable wages.

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AGGREGATE SUPPLY CURVE

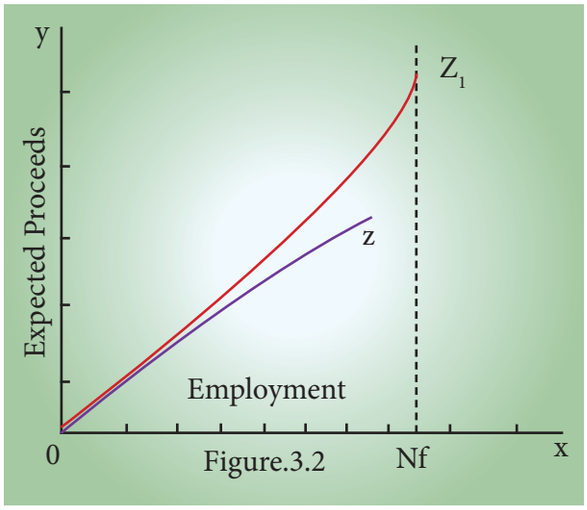


Figure.3.2

Z curve is linear where money wages remains fixed; Z_1 curve is non - linear since wage rate increases with employment. When full employment level of Nf is reached it is impossible to increase output by employing more men. So aggregate supply curve becomes inelastic (Vertical straight line).

The slope of the aggregate supply curve depends on the relation between the employment and productivity. The capital stock is often fixed and hence the law of diminishing marginal returns takes place as more workers are employed. Based upon this relation, the aggregate supply curve can be expected to slope upwards. In reality the aggregate supply curve will be like Z1 in figure 3.2. Therefore, the aggregate supply depends on the relationship between price and wages. If prices are high and wages low, the producers will try to employ labourers. If prices are low and wages high, investment will be curtailed, output will fall and there will be a reduction in the productive capacity. Thus aggregate supply is an important factor in determining the level of economic activity.

3.6.3 Equilibrium between ADF and ASF

Under the Keynes' theory of employment, a simple two sector economy consisting of the household sector and the business sector is taken to understand the equilibrium between ADF and ASF. All the decisions concerning consumption expenditure are taken by the individual households, while the business firms take decisions concerning investment. It is also assumed that consumption function is linear and planned investment is autonomous.

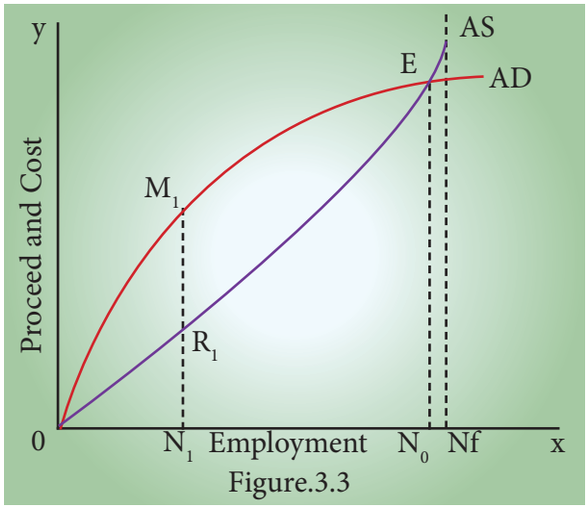


Figure.3.3

There are two approaches to determination of the equilibrium level of income in Keynesian theory. These are :

1. Aggregate demand – Aggregate supply approach
2. Saving – Investment approach

In this chapter, out of these two, aggregate demand and aggregate supply approach is alone explained to understand the determination of equilibrium level of income and employment.

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The concept of effective demand is more clearly shown in the figure 3.3

In the figure, the aggregate demand and aggregate supply reach equilibrium at point E. The employment level is N_o at that point.

At ON_1 employment, the aggregate supply is N_1 R_1. But they are able to produce M_1 N_1. The expected level of profit is M_1 R_1. To attain this level of profit, entrepreneurs will employ more labourers. The tendency to employ more labour will stop once they reach point E. At all levels of employment beyond, ON_o, the aggregate demand curve is below the aggregate supply curve indicating loss to the producers. Hence they will never employ more than ON_o labour. Thus effective demand concept becomes a crucial point in determining the equilibrium level of output in the capitalist economy or a free market economy in the Keynesian system.

It is important to note that the equilibrium level of employment need not be the full employment level (N_1) from the Figure 3.3, it is understood that the difference between $N_o - N_f$ is the level of unemployment. Thus the concept of effective demand becomes significant in explaining the under employment equilibrium.

3.7 Comparison of Classicism and Keynesianism

Sl.No	Keynesianism	Classicism
1.	Short-run equilibrium	Long-run equilibrium
2.	Saving is a vice	Saving is a social virtue.
3.	The function of money is a medium of exchange on the one side and a store of value on the other side.	The function of money is to act as a medium of exchange
4.	Macro approach to national problems	Micro foundation to macro problems
5.	State intervention is advocated.	Champions of Laissez-fair policy
6.	Applicable to all situations – full employment and less than full employment.	Applicable only to the full employment situation.
7.	Capitalism has inherent contradictions	Capitalism is well and good.
8.	Budgeting should be adjusted to the requirements of economy.	Balanced budget

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9.	The equality between saving and investment is advanced through changes in income.	The equality between saving and investment is achieved through changes of rate of interest.
10.	Rate of interest is determined by the demand for and supply of money.	Rate of interest is determined by saving and investment.
11.	Rate of interest is a flow.	Rate of interest is a stock.
12.	Demand creates its own supply.	Supply creates its own demand.
13.	Rate of interest is a reward for parting with liquidity.	Rate of interest is a reward for saving.

After learning so much about the theories of employment and income, it is pertinent to look at what is employment multiplier.

Summary

Keynes challenged the classical economic theory regarding the merits of state intervention in markets and led to widespread shift in both economic theory and government policies worldwide in the post World War II period.

Glossary

- **Full employment** : Persons who are willing to work and able to work must have employment or a job
- **Unemployment** : when there are people, who are willing to work and able to work but cannot find suitable jobs.
- **Disguised unemployment** : It is found in which when more people than actually required are doing work.
- **Under employment** : Resources (eg. Labour) are not fully utilized in production
- **Effective demand** : The amount of money which entrepreneurs expect to get by the output product.
- **Aggregate demand** : The amount that households, firms, the governments and the foreign purchasers would like to spend on domestic output.
- **Aggregate supply** : The value of total output of goods and services produced in an economy in a year.
- **Marginal Propensity to Consume** : The additional consumption due to an additional unit of income.
- **Marginal Efficiency of Capital** : The expected rate of return over costs of a new capital good.
- **Money supply** : The total stock of money circulating in an economy.

MODEL QUESTIONS

PART A

I. Multiple choice questions

1. If every able bodied person who is willing to work at the prevailing wage rate is employed called …….
   (a) Full employment
   (b) Under employment
   (c) Unemployment
   (d) Employment opportunity

2. Structural unemployment is a feature in a ……..
   (a) Static society
   (b) Socialist society
   (c) Dynamic society
   (d) Mixed economy

3. In disguised unemployment, the marginal productivity of labour is …..
   (a) Zero
   (b) One
   (c) Two
   (d) Positive

4. The main concern of the Classical Economic Theory is ……..
   (a) Under employment
   (b) Economy is always in the state of equilibrium
   (c) Demand creates its supply
   (d) Imperfect competition

5. J.B. Say is a ……
   (a) Neo Classical Economist
   (b) Classical Economist
   (c) Modern Economist
   (d) New Economist

6. According to Keynes, which type of unemployment prevails in capitalist economy ?
   (a) Full employment
   (b) Voluntary unemployment
   (c) Involuntary unemployment
   (d) Under employment

7. The core of the classical theory of employment is ……
   (a) Law of Diminishing Return
   (b) Law of Demand
   (c) Law of Markets
   (d) Law of Consumption

8. Keynes attributes unemployment to ……..
   (a) A lack of effective supply
   (b) A lock of effective demand
   (c) A lack of both
   (d) None of the above

9. ……. Flexibility brings equality between saving and investment.
   (a) Demand
   (b) Supply
   (c) Capital
   d) Rate of interest

10. ……. theory is a turning point in the development of modern economic theory.
    (a) Keynes'
    (b) Say's
    (c) Classical
    (d) Employment

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11. The basic concept used in Keynes Theory of Employment and Income is…….

(a) Aggregate demand

(b)Aggregate supply

(c) Effective demand

(d) Marginal Propensity Consume

12. The component of aggregate demand is ……

(a) Personal demand

(b) Government expenditure

(c) Only export

(d) Only import

13. Aggregate supply is equal to ……

(a) C + I + G

(b) C + S + G + (x-m)

(c) C + S + T + (x-m)

(d) C + S + T + Rf

14. Keynes theory pursues to replace laissez faire by ……

(a) No government intervention

(b) Maximum intervention

(c) State intervention in certain situation

(d) Private sector intervention

15. In Keynes theory of employment and income, …….. is the basic cause of economic depression.

(a) Less production

(b) More demand

(c) Inelastic supply

(d) Less aggregate demand in relation to productive capacity.

16. Classical theory advocates ……

(a) Balanced budget

(b) Unbalanced budget

(c) Surplus budget

(d) Deficit budget

17. Keynes theory emphasized on …… equilibrium.

(a) Very short run

(b) Short run

(c) Very long run

(d) Long run

18. According to classical theory, rate of interest is a reward for ……

(a) Investment

(b) Demand

(c) Capital

(d) Saving

19. In Keynes theory , the demand for and supply of money are determined by ….

(a) Rate of interest

(b) Effective demand

(c) Aggregate demand

(d) Aggregate supply

20. Say's law stressed the operation of ……. in the economy.

(a) Induced price mechanism

(b) Automatic price mechanism

(c) Induced demand

(d) Induced investment

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Answers

1	2	3	4	5	6	7	8	9	10
a	c	a	b	b	d	c	b	d	a
11	12	13	14	15	16	17	18	19	20
c	b	d	c	d	a	b	d	a	b

Part - B

Answer the following questions in one or two sentences.

21. Define full employment.
22. What is the main feature of rural unemployment ?
23. Give short note on frictional unemployment.
24. Give reasons for labour retrenchment at present situation.
25. List out the assumptions of Say's law.
26. What is effective demand ?
27. What are the components of aggregate supply ?

PART – C

Answer the following questions in a paragraph.

28. Give short answer to the following
    (i) Seasonal unemployment
    (ii) Frictional unemployment
    (iii) Educated unemployment
29. Write short note on the implications of Say's law.
30. Explain Keynes' theory.
31. What do you mean by aggregate demand ? Mention its components.
32. Explain about aggregate supply with the help of diagram.
33. Write any five differences between classicism and Keynesianism.

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PART - D

Answer the following questions in about a page.

34. Describe the types of unemployment.
35. Critically explain Say's law of market.
36. Narrate the equilibrium between ADF and ASF with diagram.
37. Explain the differences between classical theory and Keynes' theory.

ACTIVITY

List out the persons in your village or ward who are fully unemployed, partially unemployed and underemployed.

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CHAPTER

4

Consumption and Investment Functions

The theory of multiplier and the theory of accelerator are the two sides of the theory of fluctuations just as the theory of demand and the theory of supply are the two sides of the theory of value. The full theory must be that which shows both sides in operation.

– J.R.Hicks.

Learning Objectives

1 To study the basic concepts in consumption and investment functions.

2 To impart knowledge on the working of Multiplier, Accelerator and Super Multiplier.

4.1 Introduction

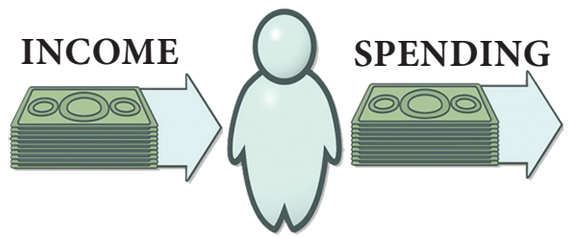
In the second chapter we have seen the concept of national income, its measurement, importance and difficulties. The present chapter deals with consumption function and the investment function which play a vital role in influencing national income.

The primary macroeconomic objective is acceleration of growth of national income. We have already seen that national income comprises of consumption goods (C) and investment (I) goods. There is close correlation between investment and national income. The multiplier refers to the change in national income resulting from change in investment. The value of multiplier itself depends on consumption function or marginal propensity to consume. The consumption function is the relationship between consumption expenditure and the national income. The unspent portion of national income is called saving which becomes investment and thereby capital. The relationship between consumption expenditure and the capital expenditure is explained by the principle of accelerator. All these variables are closely interconnected.

In this chapter one can learn the consumption function, psychological law of consumption, investment function, multiplier, accelerator and super multiplier.

4.2 Consumption Function

4.2.1 Meaning of Consumption Function



CONSUMPTION FUNCTION

The consumption function or propensity to consume refers to income consumption relationship. It is a "functional relationship between two aggregates viz., total consumption and gross national income."

Symbolically, the relationship is represented as

$$C = f(Y)$$

Where,

C = Consumption

Y = Income

f = Function

Thus the consumption function indicates a functional relationship between C and Y, where C is the dependent variable and Y is the independent variable, i.e., C is determined by Y. This relationship is based on the ceteris paribus (other things being same) assumption, as only income consumption relationship is considered and all possible influences on consumption are held constant.

In fact, consumption function is a schedule of the various amounts of consumption expenditure corresponding to different levels of income. A hypothetical consumption schedule is given in Table 1.

Table : 1 Income - Consumption Schedule (₹Crores)

Income Y	Consumption C	Savings S
0	20	-20
60	70	-10
120	120	0
180	170	10
240	220	20
300	270	30
360	320	40

If we take C = 100 + 0.8y, then MPC = 0.8

Here, if Y = 0, C = 100; if Y = 100, C = 180;

if Y = 200, C = 260;

if Y = 300, C = 340

Here, $\Delta c = 340 - 260 = 80$

$\Delta y = 300 - 200 = 100$

$$MPC = \frac{\Delta c}{\Delta y} = \frac{80}{100} = 0.8$$

In mathematical terms

$C = a + b\,Y$ or $C = 20 + 0.8Y$

Where $a>0$ and $b<1$

C= Consumption

a= constant or intercept = 20

Y= income

b= MPC (Marginal prosperity to consume) = 0.8 = $\frac{\Delta c}{\Delta y}$

The given table shows that consumption is an increasing function of income because consumption expenditure increases with increase in income. Here it is shown that when income is zero, people spend on consumption out of their past savings because they must eat in order to live (Autonomous Consumption).

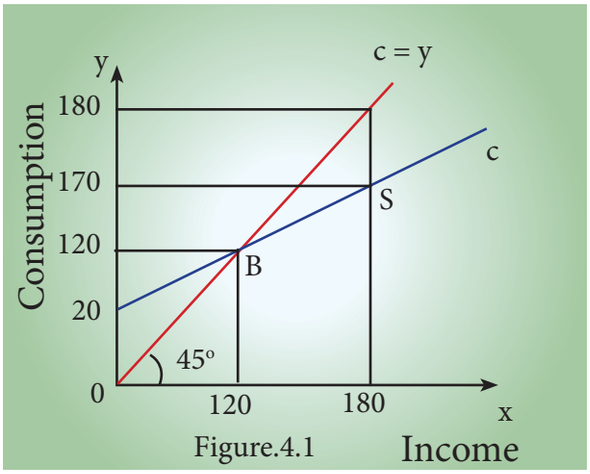


Figure.4.1

Here, when y = 120, C = 120 (Point B in the diagram)

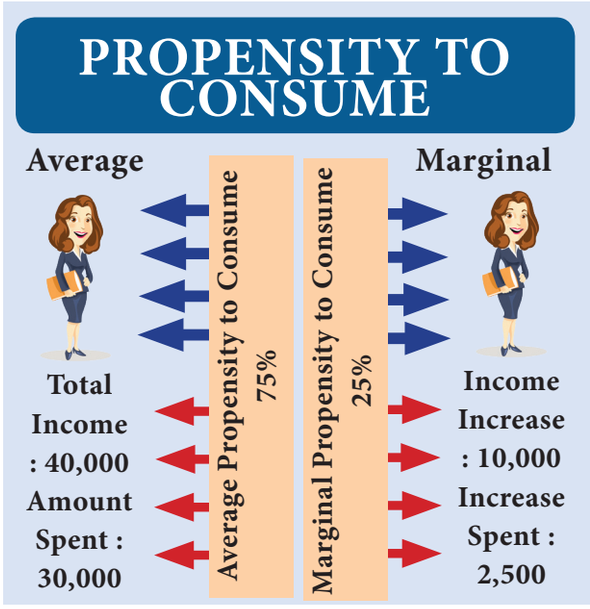
When y = 180, C = 170, S = 10 (Point S in the diagram)

If Y increases to 360, C = 320, S = 40

In the diagram, income is measured horizontally on the x axis and consumption is measured vertically on the y axis. In 45 line at all levels, income and consumption are equal. It is a linear consumption function based on the assumption that consumption changes by the same amount as does income.

Thus the consumption function measures not only the amount spent on consumption but also the amount saved. This is because the propensity to save is merely the propensity not to consume. The 45° line may therefore be regarded as a zero-saving line, and the shape and position of the C curve indicate the division of income between consumption and saving.

4.2.2 Technical Attributes of the Consumption Function



(i) The Average Propensity to Consume= $\frac{c}{y}$

(ii) The Marginal Propensity to Consume = $\frac{\Delta c}{\Delta y}$

(iii) The Average Propensity to Save= $\frac{s}{y}$

(iv) The Marginal Propensity to Save = $\frac{\Delta s}{\Delta y}$

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(1) The Average Propensity to Consume:

The average propensity to consume is the ratio of consumption expenditure to any particular level of income." Algebraically it may be expressed as under:

$$APC = \frac{C}{Y}$$

Where,

C= Consumption

Y = Income

(2) The Marginal Propensity to Consume:

The marginal propensity to consume may be defined as the ratio of the change in the consumption to the change in income. Algebraically it may be expressed as under:

$$MPC = \frac{\Delta C}{\Delta Y}$$

Where,

ΔC= Change in Consumption

ΔY = Change in Income

MPC is positive but less than unity

$$0 < \frac{\Delta C}{\Delta Y} < 1$$

(3) The Average Propensity to Save (APS) :

The average propensity to save is the ratio of saving to income.

APS is the quotient obtained by dividing the total saving by the total income. In other words, it is the ratio of total savings to total income. It can be expressed algebraically in the form of equation as under

$$APS = \frac{S}{Y}$$

Where,

S= Saving

Y=Income

(4) The Marginal Propensity to Save (MPS) :

Marginal Propensity to Save is the ratio of change in saving to a change in income.

MPS is obtained by dividing change in savings by change in income. It can be expressed algebraically as

$$MPS = \frac{\Delta S}{\Delta Y}$$

ΔS = Change in Saving

ΔY= Change in Income

Since MPC+MPS=1

MPS=1-MPC and MPC = 1 - MPS

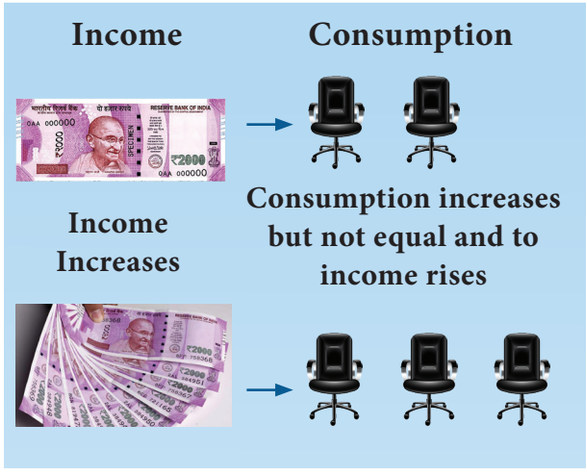
Generally the average ie APC is expressed in percentage and the MPC in fraction.

Table: 2 Calculation of APC, MPC, APS and MPS

Income Y	Consumption C	APC % C/Y	APS % S/Y	MPC ΔC/ΔY	MPS ΔS/ΔY
120	120	(120/120)100 = 100	(0/120)0=0	-	-
180	170	(170/180)100 = 94	(10/180)100=5.55	50/60 = 0.83	0.17

4.2.3 Keynes' Psychological Law of Consumption:

Keynes propounded the fundamental Psychological Law of Consumption which forms the basis of the consumption function. He stated that "The fundamental psychological law upon which we are entitled to depend with great confidence both prior from our knowledge of human nature and from the detailed facts of experience, is that men are disposed as a rule and on the average to increase their consumption as their income increases but not by as much as the increase in their income." The law implies that there is a tendency on the part of the people to spend on consumption less than the full increment of income.



Assumptions:

Keynes' Law is based on the following assumptions:

1. Ceteris paribus (constant extraneous variables):

The other variables such as income distribution, tastes, habits, social customs, price movements, population growth, etc. do not change and consumption depends on income alone.

2. Existence of Normal Conditions:

The law holds good under normal conditions. If, however, the economy is faced with abnormal and extraordinary circumstances like war, revolution or hyperinflation, the law will not operate. People may spend the whole of increased income on consumption.

3. Existence of a Laissez-faire Capitalist Economy:

The law operates in a rich capitalist economy where there is no government intervention. People should be free to spend the increased income. In the case of regulation of private enterprise and consumption expenditure by the State, the law breaks down.

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Propositions of the Law:

This law has three propositions:

(1) **When income increases, consumption expenditure also increases but by a smaller amount.** The reason is that as income increases, our wants are satisfied side by side, so that the need to spend more on consumer goods diminishes. So, the consumption expenditure increases with increase in income but less than proportionately.

(2) **The increased income will be divided in some proportion between consumption expenditure and saving.** This follows from the first proposition because when the whole of increased income is not spent on consumption, the remaining is saved. In this way, consumption and saving move together.

(3) **Increase in income always leads to an increase in both consumption and saving.** This means that increased income is unlikely to lead to fall in either consumption or saving. Thus with increased income both consumption and saving increase.

Table 3. The three propositions of the law

Income Y	Consumption C	Savings S = Y - C
120	120	0
180	170	10
240	220	20

Proposition (1):

Income increases by ₹ 60 crores and the increase in consumption is by ₹ 50 crores.

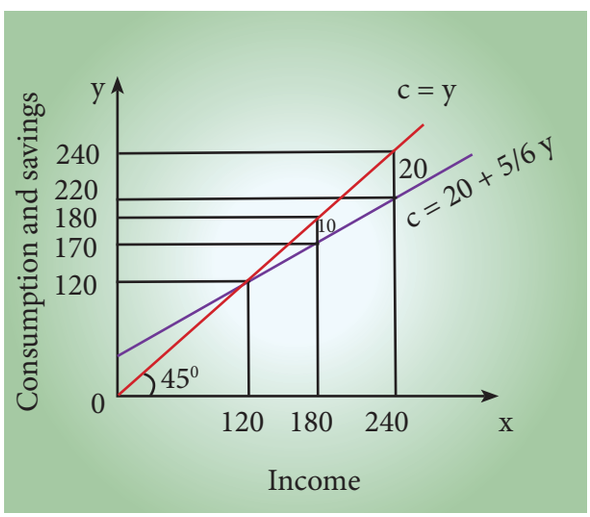
Proposition (2):

The increased income of ₹ 60 crores in each case is divided in some proportion between consumption and saving respectively. (i.e., ₹ 50crores in consumption and ₹ 10 crores in savings).

Proposition (3):

As income increases consumption as well as saving increase. Neither consumption nor saving has fallen.

Diagrammatically, the three propositions are explained in Figure 4.2. Here, income is measured horizontally and consumption and saving are measured on the vertical axis. C is the consumption function curve and 45° line represents income consumption equality.



Proposition (1):

When income increases from 120 to 180 consumption also increases from 120 to 170 but the increase in consumption is less than the increase in income, 10 is saved.

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Proposition (2):

When income increases to 180 and 240, it is divided in some proportion between consumption by 170 and 220 and saving by 10 and 20 respectively.

Proposition (3):

Increases in income from 180 to 240 lead to increase in consumption from 170 to 220 and increase in saving from10 to 20. It is clear from the widening area between 45° line and C curve.

4.2.4 Determinants of Consumption function: Subjective and Objective Factors

J.M Keynes has divided factors influencing the consumption function into two namely: Subjective factors and Objective factors

A) Subjective Factors

Subjective factors are the internal factors related to psychological feelings. Major subjective factors influencing consumption function are given below.

Keynes lists eight motives which lead *individuals* to refrain from spending, they are:

1. **The motive of precaution:** To build up a reserve against unforeseen contingencies. Eg. Accidents, sickness
2. **The motive of foresight:** The desire to provide for anticipated future needs. Eg. Old age
3. **The motive of calculation:** The desire to enjoy interest and appreciation.
4. **The motive of improvement:** The desire to enjoy for improving standard of living.
5. **The motive of financial independence**.
6. **The motive of enterprise** : desire to do forward trading.
7. **The motive of pride** : desire to bequeath a fortune
8. **The motive of avarice** : purely miserly instinct

Keynes sums up the motives as Precaution, Foresight, Calculation, Improvement, Independence, Enterprise, Pride and Avarice.

The *Government, institutions* and *business corporations* and *firms* may also consume mainly because of the following four motives:

1. **The motive of enterprise:** The desire to obtain resources to carry out further capital investment without incurring debt.
2. **The motive of liquidity:** The desire to secure liquid resources to meet emergencies, and difficulties.
3. **The motive of improvement:** The desire to secure a rising income and to demonstrate successful management.
4. **The motive of financial prudence:** The desire to ensure adequate financial

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provision against depreciation and obsolescence and to discharge debt.

According to Keynes, the subjective factors do not change in the short run and hence consumption function remains stable in the short period.

B) Objective Factors

Objective factors are the external factors which are real and measurable. These factors can be easily changed in the long run. Major objective factors influencing consumption function are:

1) Income Distribution

If there is large disparity between the rich and the poor, the consumption is low because the rich people have low propensity to consume and high propensity to save. The community with more equal distribution of income tends to have high propensity to consume. This view has been corroborated by V.K.R.V. Rao.

2) Price level

Price level plays an important role in determining the consumption function. When the price falls, real income goes up; people will consume more and propensity to save of the society increases.

3) Wage level

Wage level plays an important role in determining the consumption function and there is positive relationship between wage and consumption. Consumption expenditure increases with the rise in wages. Similar is the effect with regard to windfall gains.

4) Interest rate

Rate of interest plays an important role in determining the consumption function. Higher rate of interest will encourage people to save more money and to reduce consumption.

5) Fiscal Policy

When government reduces the tax the disposable income rises and the propensity to consume of community increases. The progressive tax system increases the propensity to consume of the people by altering the income distribution in favour of poor.

6) Consumer credit

The availability of consumer credit at easy installments will encourage households to buy consumer durables like automobiles, fridge, computer etc. This pushes up consumption.

7) Demographic factors

Ceteris paribus, the larger the size of the family, the grater is the consumption. Besides size of family, stage in family life cycle, place of residence and occupation affect the consumption function. Families with children of college education stage spend more than those with children of primary education and urban families spend more than rural families.

8) Duesenberry hypothesis

Duesenberry has made two observations regarding the factors affecting consumption.

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a) The consumption expenditure depends not only on his current income but also past income and standard of living. As the individuals are accustomed to a particular standard of living, they continue to spend the same amount on consumption even though the current income is reduced.


Duesenberry

b) Consumption is influenced by demonstration effect. The consumption standards of low income groups are influenced by the consumption standards of high income groups. In other words, the poor people want to imitate the consumption pattern of the rich. This results in spending beyond their income level.

9) Windfall Gains or losses

Unexpected changes in the stock market leading to gains or losses tend to shift the consumption function upward or downward.

4.3 Investment Function

The investment function refers to investment -interest rate relationship. There is a functional and inverse relationship between rate of interest and investment. The investment function slopes downward.

$I = f(r)$

I= Investment (Dependent variable)

r = Rate of interest (Independent variable)

4.3.1. Meaning of investment

The term investment means purchase of stocks and shares, debentures, government bonds and equities. According to Keynes, it is only financial investment and not real investment. This type of investment does result in an addition to the stock of real capital of the nation.

In the views of **Keynes**, Investment includes expenditure on capital investment.

4.3.2. Types of investment

Autonomous Investment and Induced Investment

Autonomous Investment

- Investment that is not dependent on the national income
- Mainly done with the welfare motive and not for making profits
- Examples : Construction of roads, bridges, Schools, Charitable houses, etc
- Not affected by rise in raw materials or wages of workers
- Essential to development of nation and out of depression

i) Autonomous investment: Autonomous investment is the expenditure on capital formation, which is independent of the change in income, rate of interest or rate of profit.

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This investment is independent of economic activity. Autonomous investment is income-inelastic, the volume of autonomous investment is the same at all levels.

The autonomous investment curve is horizontal, parallel to X axis.

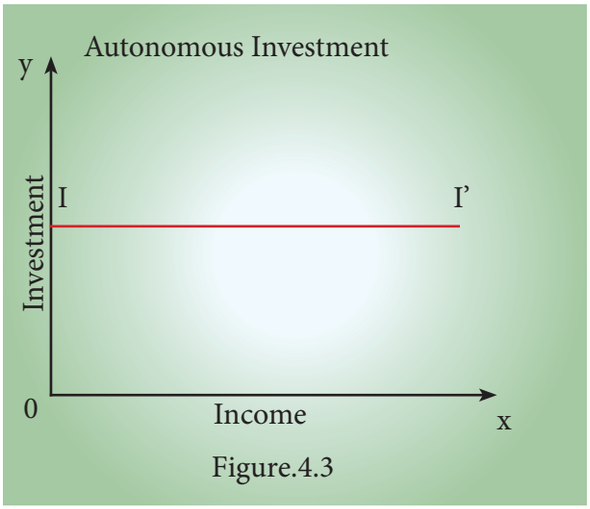


Figure.4.3

In the times of economic depression, the governments try to boost the autonomous investment. Thus, autonomous investment is one of the key concepts in welfare economics.

Generally, Government makes autonomous investment because of the welfare consideration.

ii) Induced investment: Induced investment is the expenditure on fixed assets and stocks which are required when level of income and demand in an economy goes up.

Induced investment is profit motivated. It is related to the changes of national income. The relationship between the national income and induced investment is positive; decreases in national income leads to decrease in induced investment and vice versa. Induced investment is income elastic. It is positively sloped as shown here.

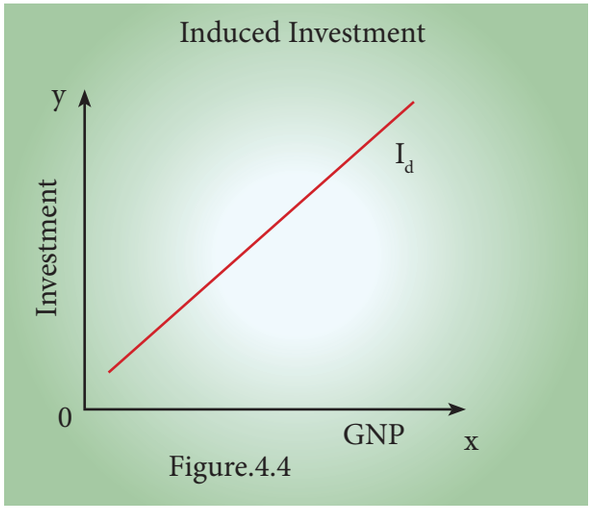


Figure.4.4

Sl. No	Autonomous Investment	Induced Investment
1	Independent	Planned
2	Income inelastic	Income elastic
3	Welfare motive	Profit Motive

4.3.3 Determinants of Investment Function

The classical economists believed that investment depended exclusively on rate of interest. In reality investment decision depends on a number of factors. They are as follows:

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1. Rate of interest
2. Level of uncertainty
3. Political environment
4. Rate of growth of population
5. Stock of capital goods
6. Necessity of new products
7. Level of income of investors
8. Inventions and innovations
9. Consumer demand
10. Policy of the state
11. Availability of capital
12. Liquid assets of the investors

However, **Keynes** contended that business expectations and profits are more important in deciding investment. He also pointed out that investment depends on MEC (Marginal Efficiency of Capital) and rate of interest.

i. Private investment is an increase in the capital stock such as buying a factory or machine.

ii. The marginal efficiency of capital (MEC) states the rate of return on an investment project. Specifically, it refers to the annual percentage yield (output) earned by the last additional unit of capital.

iii. If the marginal efficiency of capital is 5% and interest rates is 4%, then it is worth borrowing at 4% to get an expected increase in output of 5%.

4.3.4. Relationship between rate of interest and Investment:

SVAP0

An explanation of how the rate of interest influences the level of investment in the economy. Typically, higher interest rates reduce investment, because higher rates increase the cost of borrowing and require investment to have a higher rate of return to be profitable.

Interest rates and investment

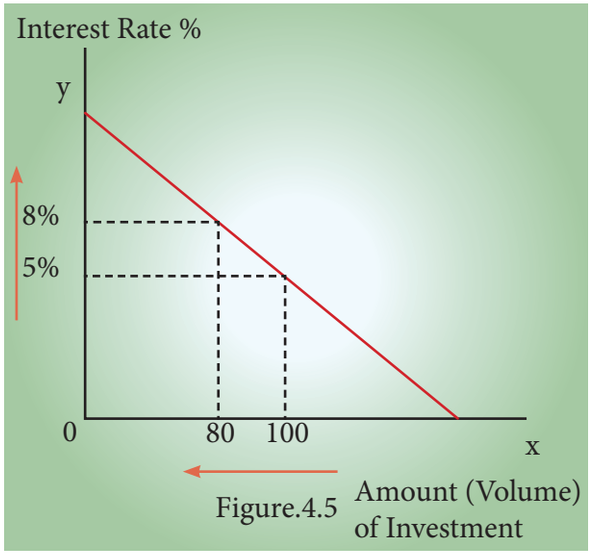


Figure.4.5

As the real cost of borrowing rises, fewer investment projects are profitable.

If interest rates rise from 5% to 8 %, then we get a fall in the amount of investment from ₹ 100 cr to ₹ 80 cr.

If interest rates are increased then it will tend to discourage investment because investment has a higher opportunity cost.

1. With higher rates, it is more expensive to borrow money from a bank.
2. Saving money in a bank gives a higher rate of return. Therefore, using savings to finance investment has an opportunity cost of lower interest payments.

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If interest rates rise, firms will need to gain a better rate of return to justify the cost of borrowing using savings.

4.3.5. Marginal Efficiency of Capital.

MEC was first introduced by J.M Keynes in 1936 as an important determinant of autonomous investment. The MEC is the expected profitability of an additional capital asset. It may be defined as the highest rate of return over cost expected from the additional unit of capital asset.

Meaning of Marginal Efficiency of Capital (MEC) is the rate of discount which makes the discounted present value of expected income stream equal to the cost of capital.

MEC depends on two factors:

1. The prospective yield from a capital asset.
2. The supply price of a capital asset.

Factors Affecting MEC:

Three factors that are taken into consideration while making any investment decision

- The cost of the capital asset
- The expected rate of return from during its lifetime
- The market rate of interest

MEC

The marginal efficiency of capital is influenced by short - run as well as long-run factors. These factors are discussed in brief:

a) Short - Run Factors

(i) Demand for the product: If the market for a particular good is expected to grow and its costs are likely to fall, the rate of return from investment will be high. If entrepreneurs expect a fall in demand for goods and a rise in cost, the investment will decline.

(ii) Liquid assets: If the entrepreneurs are holding large volume of working capital, they can take advantage of the investment opportunities that come in their way. The MEC will be high.

(iii) Sudden changes in income: The MEC is also influenced by sudden changes in income of the entrepreneurs. If the business community gets windfall profits, or tax concession the MEC will be high and hence investment in the country will go up. On the other hand, MEC falls with the decrease in income.

(iv) Current rate of investment: Another factor which influences MEC is the current rate of investment in a particular industry. If in a particular industry, much investment has already taken place and the rate of investment currently going on in that industry is also very large, then the marginal efficiency of capital will be low.

(v) Waves of optimism and pessimism: The marginal efficiency of capital is also affected by waves of optimism and pessimism in the business cycle. If businessmen are optimistic about future, the MEC will be likely to be high. During periods of pessimism the MEC is under estimated and so will be low.

b)Long - Run Factors

The long run factors which influence the marginal efficiency of capital are as follows:

(i) Rate of growth of population: Marginal efficiency of capital is also influenced by the rate of growth of population. If population is growing at a rapid speed, it is usually believed that the demand of various types of goods will increase. So a rapid rise in the growth of population will increase the marginal efficiency of capital and a slowing down in the rate of growth of population will discourage investment and thus reduce marginal efficiency of capital.

(ii) Technological progress: If investment and technological development take place in the industry, the prospects of increase in the net yield brightens up. For example, the development of automobiles in the 20th century has greatly stimulated the rubber industry, the steel and oil industry etc. So we can say that inventions and technological improvements encourage investment in various projects and increase marginal efficiency of capital.

(iii) Monetary and Fiscal policies: Cheap money policy and liberal tax policy pave the way for greater profit margin and so MEC is likely to be high.

(iv) Political environment: Political stability, smooth administration, maintenance of law and order help to improve MEC.

(v) Resource availability: Cheap and abundant supply of natural resources, efficient labour and stock of capital enhance the MEC.

4.3.6. Marginal Efficiency of Investment

MEI is the expected rate of return on investment as additional units of investment are made under specified conditions and over a period of time. When cost of borrowing is high, businesses are less motivated to borrow money and make investment on different projects because high cost of borrowing reduces profit margin of the business firms;

Marginal Efficiency of Capital(MEC)	Marginal Efficiency of Investment(MEI)
1) It is based on a given supply price for capital.	1) It is based on the induced change in the price due to change in the demand for capital.
2) It represents the rate of return on all successive units of capital without regard to existing capital.	2) It shows the rate of return on just those units of capital over and above the existing capital stock.
3) The capital stock is taken on the X axis of diagram.	3) The amount of investment is taken on the X - axis of diagram.
4) It is a "stock" concept.	4) It is a "flow" concept.
5) It determines the optimum capital stock in an economy at each level of interest rate.	5) It determines the net investment of the economy at each interest rate given the capital stock.

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4.4 Multiplier

The concept of multiplier was first developed by R.F. Khan in terms of employment. J.M Keynes redefined it as investment multiplier.

The multiplier is defined as the ratio of the change in national income to change in investment. If ΔI stands for increase in investment and ΔY stands for resultant increase in income, the multiplier K =ΔY/ΔI. Since ΔY results from ΔI, the multiplier is called investment multiplier.

4.4.1 Assumptions of Multiplier:

Keynes's theory of the multiplier works under certain assumptions which limit the operation of the multiplier. They are as follows:

1. There is change in autonomous investment.
2. There is no induced investment
3. The marginal propensity to consume is constant.
4. Consumption is a function of current income.
5. There are no time lags in the multiplier process.
6. Consumer goods are available in response to effective demand for them.
7. There is a closed economy unaffected by foreign influences.
8. There are no changes in prices.
9. There is less than full employment level in the economy.

4.4.2. Marginal propensity to consume and multiplier.

OJRYK

The propensity to consume refers to the portion of income spent on consumption. The MPC refers to the relation between change in consumption (C) and change in income(Y).

Symbolically $MPC = \Delta C/\Delta Y$

The value of multiplier depends on MPC

Multiplier $(K) = 1/1\text{-}MPC$

The multiplier is the reciprocal of one minus marginal propensity to consume. Since marginal propensity to save is 1 - MPC. (MPC+MPS =1). Multiplier is 1/ MPS. The multiplier is therefore defined as reciprocal of MPS. Multiplier is inversely related to MPS and directly with MPC.

Numerically if MPC is 0.75, MPS is 0.25 and k is 4.

Using formula k = 1/1- MPC

1/1-0.75 =1/0.25 =4

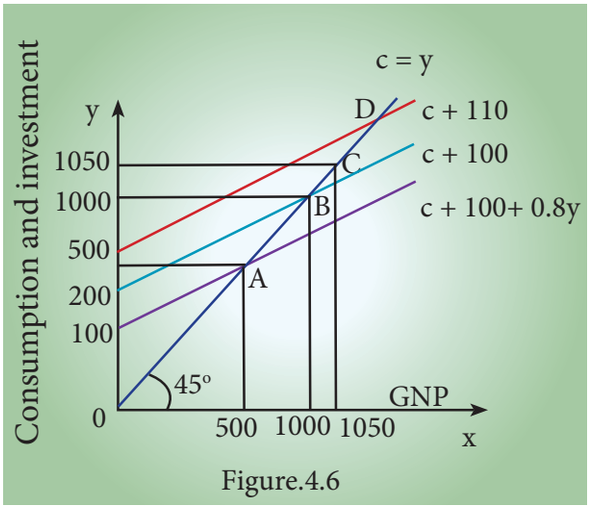


Figure.4.6

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Table 4.

Taking the following values, we can explain the functioning of multiplier

MPC	MPS	K
0.00	1.00	1
0.10	0.90	1.11
0.50	0.50	2.00
0.75	0.25	4.00
0.90	0.10	10.00
1.00	0.00	α

C = 100 + 0.8 y; I = 100

I = 10

$$Y = C + I$$

Y = 100 + 0.8y + 100

1y − 0.8y = 100 + 100

0.2y = 200

Y = 1000

Here, C = 100 + 0.8y = 100 + (1000) = 900;

S = 100 = I

After I is raised by 10, now I = 110,

Y = 100 + 0.8y + 110

0.2y = 210

$$Y = \frac{210}{0.2} = 1050$$

Here C = 100=0.8(1050) = 940; S = 110 = I

Diagrammatic Explanation.

At 45° line y = C+ S

It implies the variables in X axis and Y axis are equal.

The MPC is assumed to be at 0.8 (C = 100 + 0.8y)

The aggregate demand (C+I) curve intersects 45° line at point E.

The original national income is 500.
(C = 100 + 0.8y = 100 + 0.8(500) = 500)

When I is 100, y = 1000, C = 900;
S = 100 = I

The new aggregate demand curve is C+I' = 100 + 0.8y + 100 +10

$$Y = \frac{210}{0.2} = 1050$$

C = 940; S = 110 = I

4.4.3. Working of Multiplier

Suppose the Government undertakes investment expenditure equal to ₹100 crore on some public works, by way of wages, price of materials etc. Thus income of labourers and suppliers of materials increases by ₹100 crore. Suppose the MPC is 0.8 that is 80 %. A sum of ₹80 crores is spent on consumption (A sum of ₹20 Crores is saved). As a result, suppliers of goods get an income of ₹80 crores. They inturn spend ₹64 crores (80% of ₹80 cr). In this manner consumption expenditure and increase in income act in a chain like manner.

Positive Multiplier and Negative Multiplier Effects

Positive Multiplier

When an initial increase in an injection of investment (or a decrease in a leakage) leads to a greater final increase in real GDP.

Negative Multiplier

When an initial increase in an injection of investment (or an increase in a leakage) leads to a greater final decrease in real GDP.

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The final result is $\Delta Y = 100+100\times4/5+100\times[4/5]^2+100\times[4/5]^3$ or,

$\Delta Y = 100 + 100 \text{ x } 0.8 + 100 \text{ x } (0.8)^2 + 100 \text{ x } (0.8)^3$

$= 100 + 80 + 64 + 51.2...$

$= 500$

that is $100\times1/1-4/5$

$100\times1/1/5$

$100\times5 = ₹500$ crores

For instance if $C = 100 + 0.8Y$, $I = 100$,

Then $Y = 100 + 0.8Y + 100$

$1y - 0.8y = 100 + 100$

$0.2Y = 200$

$Y = 200/0.2 = 1000 \rightarrow$ Point B

If I is increased to 110, then

$0.2Y = 210$

$Y = 210/0.2 = 1050 \rightarrow$ Point D

For ₹10 increase in I, Y has increased by ₹50.

This is due to multiplier effect.

At point A, $Y = C = 500$

i.e Autonomous consumption 100 + MPC 400

$C = 100 + 0.8\ (500) = 100 + 400 = 500$; $S = 0$

At point B, $Y = 1000$

$C = 100 + 0.8\ (1000) = 900$; $S = 100 = I$

At point D, $Y = 1050$

$C = 100 + 0.8\ (1050) = 940$; $S = 110 = I$

When I is increased by 10, Y increases by 50.

This is multiplier effect ($K = 5$)

$K = \frac{1}{0.2} = 5$

4.4.4 Classification of Multiplier:

1. Static and dynamic multiplier

i. **Static multiplier** is otherwise known as simultaneous multiplier, timeless multiplier, and logical multiplier. Under static multiplier the change in investment and the resulting change in income are simultaneous.There is no time lag. There is also no change in MPC as the economy moves from one equilibrium position to another.

ii. **Dynamic multiplier** is also known as 'sequence multiplier'. In real life, income level does not increase instantly with investment. In fact, there is a time lag between increase in income and consumption expenditure.

4.4.5. Leakages of multiplier

The multiplier assumes that those who earn income are likely to spend a proportion of their additional income on consumption. But in practice, people tend to spend their additional income on other items. Such expenses are known as leakages.

Payment towards past debts.

If a portion of the additional income is used for repayment of old loan, the MPC is reduced and as a result the value of multiplier is cut.

Purchase of existing wealth

If income is used in purchase of existing wealth such as land, building and shares money is circulated among people and never enters into the consumption stream. As a result the value of multiplier is affected.

Import of goods and services

Income spent on imports of goods or services flows out of the country and has little chance to return to income stream in the country. Thus imports reduce the value of multiplier.

Non availability of consumer goods

The multiplier theory assumes instantaneous supply of consumer goods following demand. But there is often a time lag. During this gap (D>S) inflation is likely to rise. This reduces the consumption expenditure and thereby multiplier value.

Full employment situation

Under conditions of full employment, resources are almost fully employed. So, additional investment will lead to inflation only, rather than generation of additional real income.

4.4.6. Uses of multiplier

1. Multiplier highlights the importance of investment in income and employment theory.

2. The process throws light on the different stages of trade cycle.

3. It also helps in bringing the equality between **S** and **I**.

4. It helps in formulating Government policies.

5. It helps to reduce unemployment and achieve full employment.

KINDS OF MULTIPLIER

1. Tax multiplier
2. Employment multiplier
3. Foreign Trade multiplier
4. Investment Multiplier

4.5 The Accelerator Principle

The origin of accelerator principle can be traced back in the writings of Aftalion (1909), Hawtrey (1913) and Bickerdike(1914). However, the systematic development of the simple accelerator model was made by J.M.Clark, in 1917. It was further developed by Hicks, Samuelson and Harrod in relation to the business cycles.

4.5.1. Meaning

A given increase in the demand for consumption goods in the economy generally leads to an accelerated demand for machineries (investment goods). Accelerator is the numerical value of the relation between an increase in consumption and the resulting increase in investment.

Accelerator Effects

Increase in consumer demand → Firms get close to fill capacity → Firms invest to meet rising demand

$$\text{Accelerator } (\beta) = \frac{\Delta I}{\Delta C}$$

ΔI = Change in investment outlays (Say 100)

ΔC = Change in consumption demand (Say 50)

The accelerator expresses the ratio of the net change in investment to change in consumption.

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4.5.2. Definition

"The accelerator coefficient is the ratio between induced investment and an initial change in consumption."

Assuming the expenditure of ₹50crores on consumption goods, if industries lead to an investment of ₹ 100 crores in investment goods industries, we can say that the accelerator is 2.

$$\text{Accelerator} = \frac{100}{50} = 2$$

4.5.3. Assumptions

1. Absence of excess capacity in consumer goods industries.
2. Constant capital - output ratio
3. Increase in demand is assumed to be permanent
4. Supply of funds and other inputs is quite elastic
5. Capital goods are perfectly divisible in any required size.

4.5.4. Operation of the Acceleration Principle

Let us consider a simple example. The operation of the accelerator may be illustrated as follows.

Let us suppose that in order to produce 1000 consumer goods, 100 machines are required. Also suppose that working life of a machine is 10 years. This means that every year 10 machines have to be replaced in order to maintain the constant flow of 1000 consumer goods. This might be called replacement demand.

Suppose that demand for consumer goods rises by 10 percent (ie from 1000 to 1100). This results in increase in demand for 10 more machines. So that total demand for machines is 20. (10 for replacement and 10 for meeting increased demand). It may be noted here a 10 percent increase in demand for consumer goods causes a 100 percent increase in demand for machines (from 10 to 20). So we can conclude even a mild change in demand for consumer goods will lead to wide change in investment.

Diagrammatic illustration:

Operation of Accelerator.

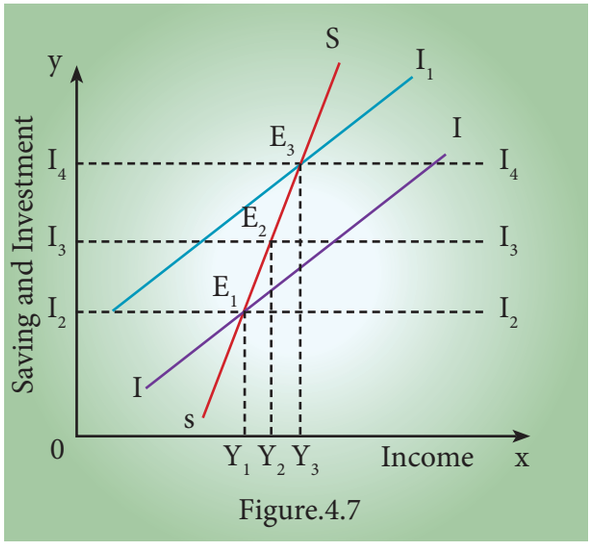


Figure.4.7

SS is the saving curve. II is the investment curve. At point E_1, the economy is in equilibrium with OY_1 income. Saving and investment are equal at OI_2. Now, investment is increased from OI_2 to OI_4. This increases income from OY_1 to OY_3, the equilibrium point being E_3. If the increase in investment by I_2 I_4 is purely exogenous, then the increase in

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income by Y_1 Y_3 would have been due to the multiplier effect. But in this diagram it is assumed that exogenous investment is only by I_2 I_3 and induced investment is by I_3 I_4. Therefore, increase in income by Y_1 Y_2 is due to the multiplier effect and the increase in income by Y_2 Y_3 is due to the accelerator effect.

4.5.5. Limitations

1. The assumption of constant capital-output ratio is unrealistic.
2. Resources are available only before full employment.
3. Excess capacity in capital goods industries is assumed.
4. Accelerator will work only if the increased demand is permanent.
5. Accelerator will work only when credit is available easily.
6. If there is unused or excess capacity in the consumer goods industry, the accelerator principle would not work.

4.6 Super Multiplier: (k and β interaction)

The super multiplier is greater than simple multiplier which includes only autonomous investment and no induced investment, while super multiplier includes induced investment.

In order to measure the total effect of initial investment on income, Hicks has combined the k and β mathematically and given it the name of the Super Multiplier. The super multiplier is worked out by combining both induced consumption and induced investment.

4.6.1. Leverage Effect

The combined effect of the multiplier and the accelerator is also called the leverage effect which may lead the economy to very high or low level of income propagation.

Symbolically

$$Y = C + I_A + I_P$$

Y = Aggregate income.

C = Consumption expenditure

I_A = autonomous investment

I_P = induced private investment

Summary

The chapter consumption function and investment function can be summarised under three heads.

The consumption function deals with relationship between national income and consumption expenditure Viz APC, MPC and APS, MPS. The subjective and objective factors determine consumption function.

The investment function includes autonomous investment and the induced investment, the functional relationship between interest rate and the investment, the role of MEC and rate of interest in determining the investment.

The multiplier is directly related to MPC and inversely related to MPS. The accelerator principle explains the effect of changing consumption expenditure upon volume of investment. The interaction of multiplier and accelerator is called super multiplier.

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Glossary

- **Consumption function :** the relationship between consumption and income
- **Autonomous Consumption :** Autonomous consumption is the minimum level of consumption or spending that must take place even if a consumer has no disposable income, such as spending for basic necessities.
- **Autonomous Investment :** Additional investment that is independent of income
- **Average Propensity to Consume (APC):** Ratio of the consumption expenditure to income. C/Y
- **Marginal Propensity to Consume (MPC) :** Ratio of change in consumption to change in income. $\Delta C/\Delta Y$
- **Average Propensity to Save (APS):** Ratio of the saving to income. S/Y
- **Marginal Propensity to Save (MPS):** Ratio of change in saving to change in income. $\Delta S/\Delta Y$
- **Subjective Factors :** Internal factors related to Psychological feeling
- **Objective Factors :** External factors which are real and measurable.
- **Demonstration effect :** the tendency to imitate superior consumption pattern.
- **Induced investment :** Additional investment demand that results from an increase in domestic product (GDP)
- **Multiplier :** ratio of change in income to change in investment. $\Delta Y/\Delta I$
- **Accelerator :** ratio of change in induced investment to change in consumption. (or) Technical relationship between change in capital stock and change in level of output.
- **Super Multiplier :** The combined effect of interaction of multiplier and accelerator.

MODEL QUESTIONS

Part-A

Multiple Choice Questions

1. The average propensity to consume is measured by

   a) C/Y
   b) CxY
   c) Y/C
   d) C+Y



2. An increase in the marginal propensity to consume will:

   a) Lead to consumption function becoming steeper
   b) Shift the consumption function upwards
   c) Shift the consumption function downwards
   d) Shift savings function upwards

3. If the Keynesian consumption function is C=10+0.8 Y then, if disposable income is Rs 1000, what is amount of total consumption?

   a) ₹ 0.8
   b) ₹ 800
   c) ₹ 810
   d) ₹ 0.81

4. If the Keynesian consumption function is C=10+0.8Y then, when disposable income is Rs 100, what is the marginal propensity to consume?

   a) ₹ 0.8
   b) ₹ 800
   c) ₹ 810
   d) ₹ 0.81

5. If the Keynesian consumption function is C=10+0.8 Y then, and disposable income is ₹100, what is the average propensity to consume?

   a) ₹ 0.8
   b) ₹ 800
   c) ₹ 810
   d) ₹0.9

6. As national income increases

   a) The APC falls and gets nearer in value to the MPC.
   b) The APC increases and diverges in value from the MPC.
   c) The APC stays constant
   d) The APC always approaches infinity.

7. As increase in consumption at any given level of income is likely to lead

   a) Higher aggregate demand
   b) An increase in exports
   c)A fall in taxation revenue
   d) A decrease in import spending

8. Lower interest rates are likely to :

   a) Decrease in consumption
   b) increase cost of borrowing
   c) Encourage saving
   d) increase borrowing and spending

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9. The MPC is equal to :

a) Total spending / total consumption

b) Total consumption/total income

c) Change in consumption /change in income

d) none of the above.

10. The relationship between total spending on consumption and the total income is the _____

a) Consumption function

b) Savings function

c) Investment function

d) aggregate demand function

11. The sum of the MPC and MPS is _____

a)1

b) 2

c) 0.1

d) 1.1

12. As income increases, consumption will _____

a)fall

b) not change

c) fluctuate

d) increase

13. When investment is assumed autonomous the slope of the AD schedule is determined by the _____

a) marginal propensity to invest

b) disposable income

c) marginal propensity to consume

d) average propensity to consume

14. The multiplier tells us how much _____ changes after a shift in _____

a) Consumption , income

b) investment, output

c) savings, investment

d) output, aggregate demand

15. The multiplier is calculated as

a) 1/(1-MPC)

b) 1/MPS

c) 1/MPC

d) a and b

16. It the MPC is 0.5, the multiplier is _____

a) 2

b)1/2

c) 0.2

d) 20

17. In an open economy import _____ the value of the multiplier

a) Reduces

b) increase

c) does not change

d) changes

18. According to Keynes, investment is a function of the MEC and _____

a) Demand

b) Supply

c) Income

d) Rate of interest

19. The term super multiplier was first used by

a) J.R.Hicks

b) R.G.D. Allen

c) Kahn

d) Keynes

20. The term MEC was introduced by

a) Adam Smith

b) J.M. Keynes

c) Ricardo

d) Malthus

Answers

1	2	3	4	5	6	7	8	9	10
a	a	c	a	d	a	a	d	c	a
11	12	13	14	15	16	17	18	19	20
a	d	c	d	d	a	a	d	a	b

Part-B

Answer the following questions in one or two sentences.

21. What is consumption function?

22. What do you mean by propensity to consume?

23. Define average propensity to consume (APC).

24. Define marginal propensity to consume (MPC).

25. What do you mean by propensity to save?

26. Define average propensity to save (APS).

27. Define Marginal Propensity to Save (MPS).

28. Define Multiplier.

29. Define Accelerator.

Part C

Answer the following questions in one paragraph

30. State the propositions of Keynes's Psychological Law of Consumption

31. Differentiate autonomous and induced investment.

32. Explain any three subjective and objective factors influencing the consumption function.

33. Mention the differences between accelerator and multiplier effect

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34. State the concept of super multiplier.

35. Specify the limitations of the multiplier.

Part D

Answer the following questions in a page

36. Explain Keynes psychological law of consumption function with diagram.

37. Briefly explain the subjective and objective factors of consumption function?

38. Illustrate the working of Multiplier.

39. Explain the operation of the Accelerator.

40. What are the differences between MEC and MEI

ACTIVITY

How do you calculate MPC from consumption function?

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CHAPTER

5

Monetary Economics

Inflation is taxation without legislation.

-Milton Friedman

Learning Objectives

1. To understand the evolution of money, types, functions, meaning of inflation, types, causes, effects of inflation and measures to control.
2. To know the various phases of trade cycle.

5.1 Introduction

Monetary Economics is a branch of economics that provides a framework for analyzing money and its functions as a medium of exchange, store of value and unit of account. It examines the effects of monetary systems including regulation of money and associated financial institutions.

5.2 Money

5.2.1 Meaning

Money is anything that is generally accepted as payment for goods and services and repayment of debts and that serves as a medium of exchange. A medium of exchange is anything that is widely accepted as a means of payments. In recent years, the importance of credit has increased in all the countries of the world. Credit instruments are used on an extensive scale. The use of cheques, bills of exchange, etc. has gone up. It should however, be remembered that money is the basis of credit.



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5.2.2 Definitions

Many economists developed definition for money. Among these, definitions of Walker and Crowther are given below:

" Money is, what money does"

- Walker.

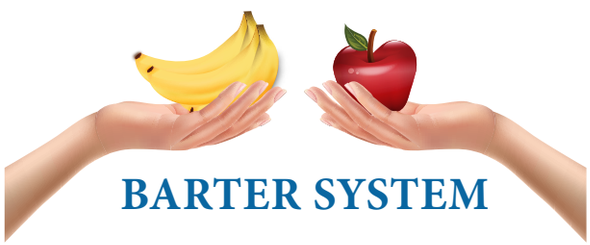
"Money can be anything that is generally acceptable as a means of exchange and at the same time acts as a measure and a store of value".

–Crowther

5.2.3 Evolution of Money

Barter System

The introduction of money as a medium of exchange was one of the greatest inventions of mankind. Before money was invented, exchange took place by Barter, that is, commodities and services were directly exchanged for other commodities and services. Under the barter system, buyers and sellers of commodities had to face a number of difficulties. Surplus goods were exchanged for money which in turn was exchanged for other needed goods. Goods like furs, skins, salt, rice, wheat, utensils, weapons, etc. were commonly used as money. Such exchange of goods for goods was known as "Barter Exchange" or "Barter System".



The history of Barter system starts way back in 6000 BC

- Barter system was introduced by Mesopotamia tribes.
- Phoenicians adopted bartering of goods with various other cities across oceans.
- Babyloninan's also developed an improved barter system, where goods were exchanged for goods.

Metallic Standard



After the barter system and commodity money system, the modern money systems evolved. Among these, metallic standard is the premier one. Under metallic standard, some kind of metal- either gold or silver is used to determine the standard value of the money and currency. Standard coins made out of the metal are the principal coins used under the metallic standard. These standard coins are full bodied or full weighted legal tender. Their face value is equal to their intrinsic metal value.

Gold Standard



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Gold Standard is a system in which the value of the monetary unit or the standard currency is directly linked with gold. The monetary unit is defined in terms of a certain weight of gold. The purchasing power of a unit of money is maintained equal to the value of a fixed weight of gold.

Silver Standard



The silver standard is a monetary system in which the standard economic unit of account is a fixed weight of silver. The silver standard is a monetary arrangement in which a country's Government allows conversion of its currency into fixed amount of silver.

Paper Currency Standard



The paper currency standard refers to the monetary system in which the paper currency notes issued by the Treasury or the Central Bank or both circulate as unlimited legal tender. Paper currency is not convertible into any metal. Its value is determined independent of the value of gold or any other commodity. The paper standard is also known as managed currency standard. The quantity of money in circulation is controlled by the monetary authority to maintain price stability.

Plastic Money



The latest type of money is plastic money. Plastic money is one of the most evolved forms of financial products. Plastic money is an alternative to the cash or the standard "money". Plastic money is a term that is used predominantly in reference to the hard plastic cards used every day in place of actual bank notes. Plastic money can come in many different forms such as Cash cards, Credit cards, Debit cards, Pre-paid Cash cards, Store cards, Forex cards and Smart cards. They aim at removing the need for carrying cash to make transactions.

Crypto Currency



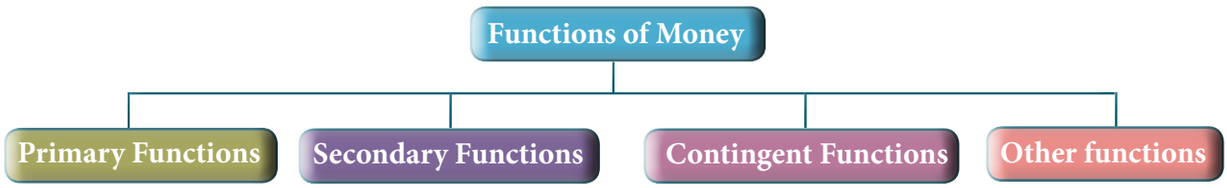
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A digital currency in which encryption techniques are used to regulate the generation of units of currency and verify the transfer of funds, operating independently of a Central Bank.

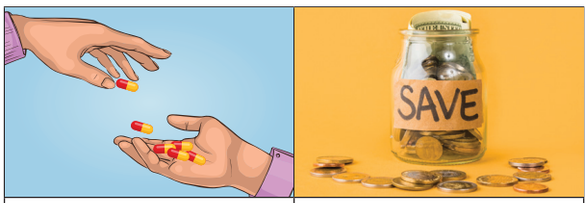
Decentralised crypto currencies such as Bitcoin now provide an outlet for Personal Wealth that is beyond restriction and confiscation.

5.2.4 Functions of Money

The main functions of money can be classified into four categories:



1.Primary Functions:



Medium of exchange

Store of Value



Measure of value



Standard of deferred payments

i) Money as a medium of exchange: This is considered as the basic function of money. Money has the quality of general acceptability, and all exchanges take place in terms of money. On account of the use of money, the transaction has now come to be divided into two parts. First, money is obtained through sale of goods or services. This is known as sale. Later, money is obtained to buy goods and services. This is known as purchase. Thus, in the modern exchange system money acts as the intermediary in sales and purchases.

ii) Money as a measure of value: The second important function of money is that it measures the value of goods and services. In other words, the prices of all goods and services are expressed in terms of money. Money is thus looked upon as a collective measure of value. Since all the values are expressed in terms of money, it is easier to determine the rate of exchange between various types of goods in the community.

2.Secondary Functions

i) **Money as a Store of value:** Savings done in terms of commodities were not permanent. But, with the invention of money, this difficulty has now disappeared and savings are now done in terms of money. Money also serves as an excellent store of wealth, as it can be easily converted into other marketable assets, such as, land, machinery, plant etc.

ii) **Money as a Standard of Deferred Payments:** Borrowing and lending were difficult problems under the barter system. In the absence of money, the

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borrowed amount could be returned only in terms of goods and services. But the modern money-economy has greatly facilitated the borrowing and lending processes in terms of money. In other words, money now acts as the standard of deferred payments.

iii) **Money as a Means of Transferring Purchasing Power:** The field of exchange also went on extending with growing economic development. The exchange of goods is now extended to distant lands. It is therefore, felt necessary to transfer purchasing power from one place to another.

3.Contingent Functions

i) **Basis of the Credit System:** Money is the basis of the Credit System. Business transactions are either in cash or on credit. For example, a depositor can make use of cheques only when there are sufficient funds in his account. The commercial banks create credit on the basis of adequate cash reserves. But, money is at the back of all credit.

ii) **Money facilitates distribution of National Income:** The task of distribution of national income was exceedingly complex under the barter system. But the invention of money has now facilitated the distribution of income as rent, wage, interest and profit.

iii) **Money helps to Equalize Marginal Utilities and Marginal Productivities:** Consumer can obtain maximum utility only if he incurs expenditure on various commodities in such a manner as to equalize marginal utilities accruing from them. Now in equalizing these marginal utilities, money plays an important role, because the prices of all commodities are expressed in money. Money also helps to equalize marginal productivities of various factors of production.

iv) **Money Increases Productivity of Capital:** Money is the most liquid form of capital. In other words, capital in the form of money can be put to any use. It is on account of this liquidity of money that capital can be transferred from the less productive to the more productive uses.

4.Other Functions

i) **Money helps to maintain Repayment Capacity:** Money possesses the quality of general acceptability. To maintain its repayment capacity, every firm has to keep assets in the form of liquid cash. The firm ensures its repayment capacity with money. Likewise, banks, insurance companies and even governments have to keep some liquid money (i.e., cash)to maintain their repayment capacity.

ii) **Money represents Generalized Purchasing Power:** Purchasing power kept in terms of money can be put to any use. It is not necessary that money should be used only for the purpose for which it has been served.

iii) **Money gives liquidity to Capital:** Money is the most liquid form of capital. It can be put to any use.

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5.3 Supply of Money

Money supply means the total amount of money in an economy. It refers to the amount of money which is in circulation in an economy at any given time. Money supply plays a crucial role in the determination of price level and interest rates. Money supply viewed at a given point of time is a stock and over a period of time it is a flow.

Meaning of Money Supply



In India, currency notes are issued by the Reserve Bank of India (RBI) and coins are issued by the Ministry of Finance, Government of India (GOI). Besides these, the balance is savings, or current account deposits, held by the public in commercial banks is also considered money. The currency notes are also called fiat money and legal tenders.

Money supply is a stock variable. RBI publishes information for four alternative measures of Money supply, namely M_1,M_2,M_3 and M_4.

M_1 = Currency, coins and demand deposits

M_2 = M_1 + Savings deposits with post office savings banks

M_3 = M_2 + Time deposits of all commercial and cooperative banks

M_4 = M_3 + Total deposits with Post offices.

M_1 and M_2 are known as narrow money

M_3 and M_4 are known as broad money

The gradations are in decreasing order of liquidity.

Currency Symbol ₹

The new symbol designed by D.Udaya Kumar, a post graduate of IIT Bombay was finally selected by the Union cabinet on 15th July, 2010. The new symbol, is an amalgamation of Devanagri 'Ra' and the Roman 'R' without the stem. The symbol of India rupee came into use on 15thJuly,2010. After America, Britain, Japan, Europe Union. India is the 5th country to accept a unique currency symbol.

Determinants of Money Supply

1. Currency Deposit Ratio (CDR); It is the ratio of money held by the public in currency to that they hold in bank deposits.

2. Reserve deposit Ratio (RDR); Reserve Money consists of two things (a) vault cash in banks and (b) deposits of commercial banks with RBI.

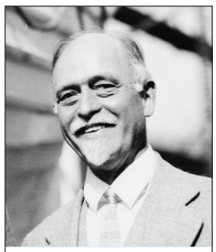
3. Cash Reserve Ratio (CRR); It is the fraction of the deposits the banks must keep with RBI.

4. Statutory Liquidity Ratio (SLR); It is the fraction of the total demand and time deposits of the commercial banks in the form of specified liquid assests.

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5.4 Quantity Theories of Money

Quantity theories of money explain the relationship between quantity of money and value of money. Here, we are given two approaches of Quantity Theory of Money, viz. Fisher's Transaction Approach and Cambridge Cash Balance Approach.



Irving Fisher

(a) Fisher's Quantity Theory of Money: The quantity theory of money is a very old theory. It was first propounded in 1588 by an Italian economist, Davanzatti. But, the credit for popularizing this theory in recent years rightly belongs to the well-known American economist, Irving Fisher who published his book, 'The Purchasing Power of Money" in 1911.He gave it a quantitative form in terms of his famous "Equation of Exchange".

The general form of equation given by Fisher is

$$MV = PT$$

Where M = Money Supply/quantity of Money

V = Velocity of Money

P = Price level

T = Volume of Transaction.

Fisher points out that in a country during any given period of time, the total quantity of money (MV) will be equal to the total value of all goods and services bought and sold (PT).

MV = PT

Supply of Money = Demand for Money

This equation is referred to as "Cash Transaction Equation".

It is expressed as P = MV / T which implies that the quantity of money determines the price level and the price level in its turn varies directly with the quantity of money, provided 'V' and 'T' remain constant.

The above equation considers only currency money. But, in a modern economy, bank's demand deposits or credit money and its velocity play a vital part in business. Therefore, Fisher extended his original equation of exchange to include bank deposits M1 and its velocity V1. The revised equation was:

$$PT = MV + M^1V^1$$

$$P = \frac{MV + M^1V^1}{T}$$

From the revised equation, it is evident, that the price level is determined by (a) the quantity of money in circulation 'M' (b) the velocity of circulation of money 'V' (c) the volume of bank credit money M_1 (d) the velocity of circulation of credit money V_1 and the volume of trade (T)

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Diagrammatic Illustration

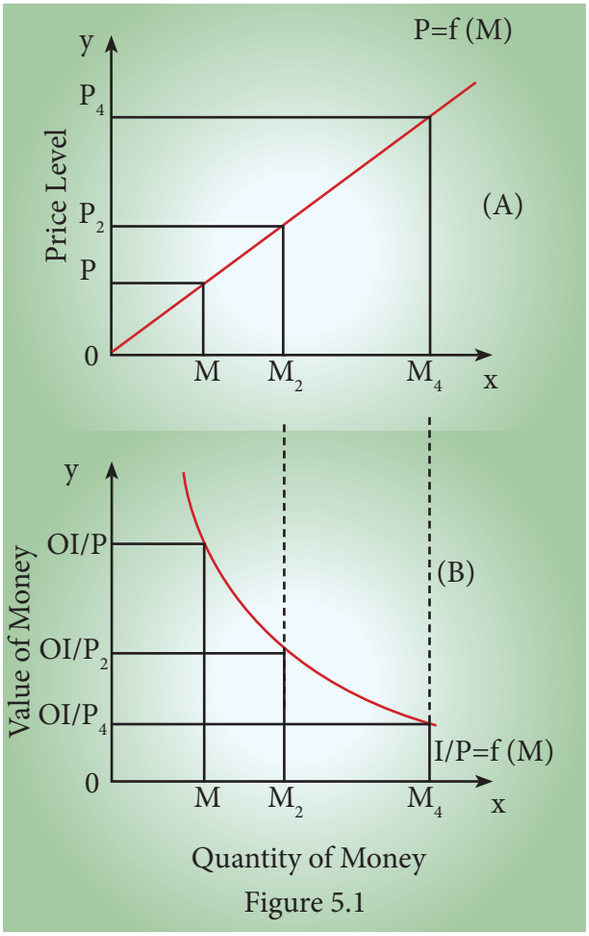


Figure 5.1

Figure (A) shows the effect of changes in the quantity of money on the price level. When the quantity of money is OM, the price level is OP. When the quantity of money is doubled to OM_2, the price level is also doubled to OP_2. Further, when the quantity of money is increased four-fold to OM_4, the price level also increases by four times to OP_4. This relationship is expressed by the curve OP = f (M) from the origin at 45^0.

Figure (B), shows the inverse relation between the quantity of money and the value of money, where the value of money is taken on the vertical axis. When the quantity of money is OM, the value of money is OI / P. But with the doubling of the quantity of money to OM_2, the value of money becomes one-half of what it was before, (OI / P_2). But, with the quantity of money increasing by four-fold to OM_4, the value of money is reduced by OI / P_4. This inverse relationship between the quantity of money and the value of money is shown by downward sloping curve IO / P = f(M).

b) Cambridge Approach (Cash Balances Approach)

i) Marshall's Equation

The Marshall's equation is expressed as:

M = KPY

Where

M is the quantity of money

Y is the aggregate real income of the community

P is Purchasing Power of money

K represents the fraction of the real income which the public desires to hold in the form of money.

Thus, the price level P = M/KY or the value of money (The reciprocal of price level) is 1/P = KY/M

The value of money in terms of this equation can be found out by dividing the total quantity of goods which the public desires to holdout of the total income by the total supply of money.

According to Marshall's equation, the value of money is influenced not only by changes in M, but also by changes in K.

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ii) Keynes's Equation

Keynes's equation is expressed as:

$$n = pk \quad (or) \quad p = n / k$$

Where

n is the total supply of money

p is the general price level of consumption goods

k is the total quantity of consumption units the people decide to keep in the form of cash,

Keynes indicates that **K** is a real balance, because it is measured in terms of consumer goods.

According to Keynes, peoples' desire to hold money is unaltered by monetary authority. So, price level and value of money can be stabilized through regulating quantity of money (n) by the monetary authority.

Later, Keynes extended his equation in the following form:

$$n = p\,(k + rk') \text{ or } p = n/(k + rk')$$

Where,

n = total money supply

p = price level of consumer goods

k = peoples' desire to hold money in hand (in terms of consumer goods) in the total income of them

r = cash reserve ratio

k' = community's total money deposit in banks, in terms of consumers goods.

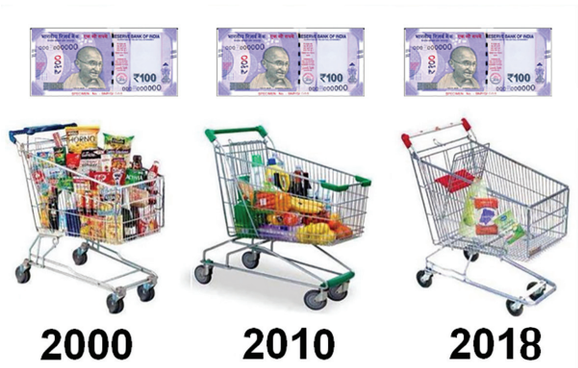
In this extended equation also, Keynes assumes that, **k**, **k'** and **r** are constant. In this situation, price level (P) is changed directly and proportionately changing in money volume (n).

5.5 Inflation

Both inflation and deflations are evils of economy. So, understanding of these is essential.

5.5.1 Meaning of Inflation

Inflation is a consistent and appreciable rise in the general price level. In other words, inflation is the rate at which the general level of prices for goods and services is rising and consequently the purchasing power of currency is falling.



Definitions

" Too much of Money chasing too few goods"

- Coulbourn

"A state of abnormal decrease in the quantity of purchasing power"

- Gregorye

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5.5.2 Types of Inflation

On the basis of speed

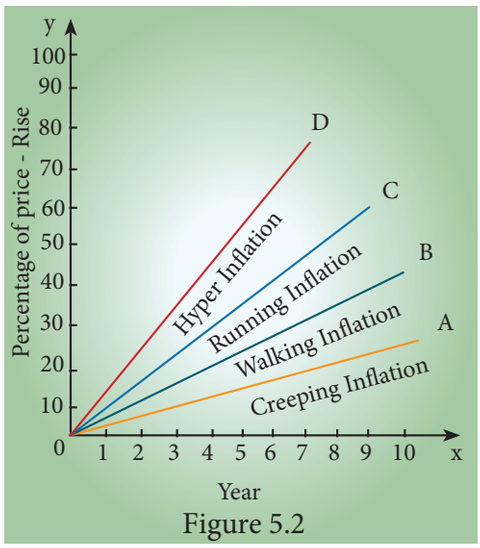


Figure 5.2

(i) Creeping inflation (ii) Walking inflation (iii) Running inflation and (iv) Galloping inflation or Hyper inflation.

The four types of inflation are indicated in Figure-5.2.

i) Creeping Inflation: Creeping inflation is slow-moving and very mild. The rise in prices will not be perceptible but spread over a long period. This type of inflation is in no way dangerous to the economy. This is also known as mild inflation or moderate inflation.

ii) Walking Inflation: When prices rise moderately and the annual inflation rate is a single digit (3% - 9%), it is called walking or trolling inflation.

iii) Running Inflation: When prices rise rapidly like the running of a horse at a rate of speed of 10% - 20% per annum, it is called running inflation.

iv) Galloping inflation: Galloping inflation or hyper inflation points out to unmanageably high inflation rates that run into two or three digits. By high inflation the percentage of the same is almost 20% to 100% from an overall perspective.

The first hyper inflation of the 21st century Zimbabwe's annual inflation rate surged to an unprecendented 3714 percent at the end of April 2007.

Demand-Pull Vs Cost-Push inflation

i) Demand-Pull Inflation: Demand and supply play a crucial role in deciding the inflation levels in the society at all points of time. For instance, if the demand is high for a product and supply is low, the price of the products increases.

Demand Pull Inflation

Too much of money chasing too few goods



ii) Cost-Push Inflation: When the cost of raw materials and other inputs rises inflation results. Increase in wages paid to labour also leads to inflation.

Wage-Price Spiral

Wage-price spiral is used to explain the cause and effect relationship between rising wages and rising prices or inflation.

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Other types of inflation (on the basis of inducement)

i) **Currency inflation:** The excess supply of money in circulation causes rise in price level.

ii) **Credit inflation:** When banks are liberal in lending credit, the money supply increases and thereby rising prices.

iii) **Deficit induced inflation:** The deficit budget is generally financed through printing of currency by the Central Bank. As a result, prices rise.

iv) **Profit induced inflation:** When the firms aim at higher profit, they fix the price with higher margin. So prices go up.

v) **Scarcity induced inflation:** Scarcity of goods occurs either due to fall in production (eg. farm goods) or due to hoarding and black marketing. This also pushes up the price. (This has happened in Venezula in the year 2018)

vi) **Tax induced inflation:** Increase in indirect taxes like excise duty, custom duty and sales tax may lead to rise in price (eg. petrol and diesel). This is also called taxflation.

5.5.3 Causes of Inflation

The main causes of inflation in India are as follows:

i) **Increase in Money Supply:** Inflation is caused by an increase in the supply of money which leads to increase in aggregate demand. The higher the growth rate of the nominal money supply, The higher is the rate of inflation.

ii) **Increase in Disposable Income:** When the disposable income of the people increases, it raises their demand for goods and services. Disposable income may increase with the rise in national income or reduction in taxes or reduction in the saving of the people.

iii) **Increase in Public Expenditure:** Government activities have been expanding due to developmental and social welfare programmes. This is also a cause for price rise.

iv) **Increase in Consumer Spending:** The demand for goods and services increases when the people are given credit to buy goods on hire-purchase and installment basis.

v) **Cheap Money Policy:** Cheap money policy or the policy of credit expansion also leads to increase in the money supply which raises the demand for goods and services in the economy.

vi) **Deficit Financing:** In order to meet its mounting expenses, the government resorts to deficit financing by borrowing from the public and even by printing more currency notes. This raises aggregate demand in relation to aggregate supply, thereby leading to inflationary rise in prices.

vii) **Black Assests, Activities and Money:** The existence of black money and black assests due to corruption, tax evasion etc., increases the aggregate

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demand. People spend such money, lavishly. Black marketing and hoarding reduces the supply of goods. These trends tend to raise the price level further.

viii) **Repayment of Public Debt:** Whenever the government repays its past internal debt to the public, it leads to increase in the money supply with the public. This tends to raise the aggregate demand for goods and services.

ix) **Increase in Exports:** When exports are encouraged, domestic supply of goods decline. So prices rise.

5.5.4 Effects of Inflation

The effects of inflation can be classified into two heads:

(1) Effects on Production and

(2) Effects on Distribution.

1. Effects on Production:

When the inflation is very moderate, it acts as an incentive to traders and producers. This is particularly prior to full employment when resources are not fully utilized. The profit due to rising prices encourages and induces business class to increase their investments in production, leading to generation of employment and income.

i) However, hyper-inflation results in a serious depreciation of the value of money and it discourages savings on the part of the public.

ii) When the value of money undergoes considerable depreciation, this may even drain out the foreign capital already invested in the country.

iii) With reduced capital accumulation, the investment will suffer a serious set-back which may have an adverse effect on the volume of production in the country. This may discourage entrepreneurs and business men from taking business risk.

iv) Inflation also leads to hoarding of essential goods both by the traders as well as the consumers and thus leading to still higher inflation rate.

v) Inflation encourages investment in speculative activities rather than productive purposes.

2. Effects on Distribution

i) **Debtors and Creditors:** During inflation, debtors are the gainers while the creditors are losers. The reason is that the debtors had borrowed when the purchasing power of money was high and now repay the loans when the purchasing power of money is low due to rising prices.

ii) **Fixed-income Groups:** The fixed income groups are the worst hit during inflation because their incomes being fixed do not bear any relationship with the rising cost of living. Examples are wage, salary, pension, interest, rent etc.

iii) **Entrepreneurs:** Inflation is the boon to the entrepreneurs whether they are manufacturers, traders, merchants

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or businessmen, because it serves as a tonic for business enterprise. They experience windfall gains as the prices of their inventories (stocks) suddenly go up.

iv. **Investors:** The investors, who generally invest in fixed interest yielding bonds and securities have much to lose during inflation. On the contrary those who invest in shares stand to gain by rich dividends and appreciation in value of shares.

5.5.5 Measures to Control Inflation

Keynes and Milton Friedman together suggested three measures to prevent and control of inflation.

(1) Monetary measures,
(2) Fiscal measures (J.M. Keynes) and
(3) Other measures.

1. **Monetary Measures:** These measures are adopted by the Central Bank of the country. They are (i) Increase in Bankrate (ii) Sale of Government Securities in the Open Market (iii) Higher Cash Reserve Ratio (CRR) and Statutory Liquidity Ratio (SLR) (iv) Consumer Credit Control and (v) Higher margin requirements (vi) Higher Repo Rate and Reverse Repo Rate.

2. **Fiscal Measures:** Fiscal policy is now recognized as an important instrument to tackle an inflationary situation. The major anti-inflationary fiscal measures are the following: Reduction of Government Expenditure, Public Borrowing and Enhancing taxation.

3. **Other Measures:** These measures can be divided broadly into short-term and long-term measures.

i) **Short-term measures** can be in regard to public distribution of scarce essential commodities through fair price shops (Rationing). In India whenever shortage of basic goods has been felt, the government has resorted to import so that inflation may not get triggered.

ii) **Long-term measures** will require accelerating economic growth especially of the wage goods which have a direct bearing on the general prices and the cost of living. Some restrictions on present consumption may help in improving saving and investment which may be necessary for accelerating the rate of economic growth in the long run.

5.6 Meaning of Deflation, Disinflation and Stagflation

Deflation: The essential feature of deflation is falling prices, reduced money supply and unemployment. Though falling prices are desirable at the time of inflation, such a fall should not lead to the fall in the level of production and employment. But if prices fall from the level of full employment both income and employment will be adversely affected.

Disinflation: Disinflation is the slowing down the rate of inflation by controlling the amount of credit (bank loan, hire purchase) available to consumers without causing more unemployment. Disinflation may be defined as the process of reversing

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inflation without creating unemployment or reducing output in the economy.

Stagflation: Stagflation is a combination of stagnant economic growth, high unemployment and high inflation.

5.7 Trade Cycle

The economic activity in a capitalist economy will have its periodic ups and downs. The study of these ups and downs is called the study of Business cycle or Trade cycle or Industrial Fluctuation.

5.7.1 Meaning of Trade Cycle

A Trade cycle refers to oscillations in aggregate economic activity particularly in employment, output, income, etc. It is due to the inherent contraction and expansion of the elements which energize the economic activities of the nation. The fluctuations are periodical, differing in intensity and changing in its coverage.

Definition

"A trade cycle is composed of periods of good trade characterised by rising prices and low unemployment percentages altering with periods of bad trade characterised by falling prices and high unemployment percentages".

- J.M. Keynes

5.7.2 Phases of Trade Cycle

The four different phases of trade cycle is referred to as (i) Boom (ii) Recession (iii) Depression and (iv) Recovery. These are illustrated in the Figure 5.3.

Phases of Trade Cycle

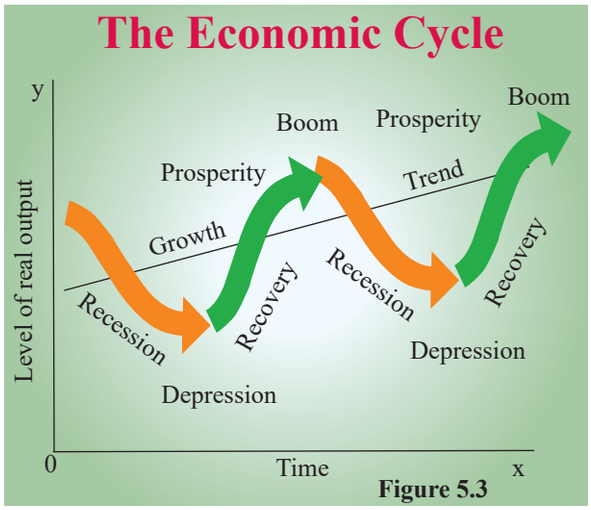


Figure 5.3

i) **Boom or Prosperity Phase:** The full employment and the movement of the economy beyond full employment is characterized as boom period. During this period, there is hectic activity in economy. Money wages rise, profits increase and interest rates go up. The demand for bank credit increases and there is all-round optimism.

ii) **Recession:** The turning point from boom condition is called recession. This happens at higher rate, than what was earlier. Generally, the failure of a company or bank bursts the boom and brings a phase of recession. Investments are drastically reduced, production comes down and income and profits decline. There is panic in the stock market and business activities show signs of dullness. Liquidity preference of the people rises and money market becomes tight.

iii) **Depression:** During depression the level of economic activity becomes extremely low. Firms incur losses and closure of business becomes a common

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feature and the ultimate result is unemployment. Interest prices, profits and wages are low. The agricultural class and wage earners would be worst hit. Banking institutions will be reluctant to advance loans to businessmen. Depression is the worst phase of the business cycle. Extreme point of depression is called as "trough", because it is a deep point in business cycle. Any person fell down in deeps could not come out from that without other's help. Similarly, an economy fell down in trough could not come out from this without external help. Keynes advocated that autonomous investment of the government alone can help the economy to come out from the depression.

iv. **Recovery:** After a period of depression, recovery sets in. This is the turning point from depression to revival towards upswing. It begins with the revival of demand for capital goods. Autonomous investments boost the activity. The demand slowly picks up and in due course the activity is directed towards the upswing with more production, profit, income, wages and employment. Recovery may be initiated by innovation or investment or by government expenditure (autonomous investment).

Summary

Currency is created by the RBI and Union Government. Bank deposits are created by Commercial Banks and Co-operative Banks. The demand for money is determined by a number of factors such as income, price level, interest rate etc.

Glossary

- **Barter :** The exchange of one good for another without the use of money.
- **Money :** An asset that is generally acceptable as a medium of exchange
- **Supply of Money :** It refers to the amount of money which is in circulation in an economy at any given time
- **Inflation :** An increase in average level of prices
- **Deflation :** A fall in average level of prices, the opposite of inflation
- **Disinflation :** Process of reversing inflation without generating adverse effects.
- **Stagflation :** The co-existence of a high rate of unemployment and inflation. (derived from stag(nation) and (in) flation).
- **Trade Cycle :** The more or less regular upward and downward movement of economic activity over a period of years.
- **Recovery :** An increase in business activities after the lowest point, (i.e. depression.)
- **Narrow money :** M_1 and M_2 are narrow money as they include currency with the public plus demand deposits in banks and other deposits.

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MODEL QUESTIONS

YMO67

Part-A

Multiple Choice Questions

1. The RBI Headquarters is located at

(a) Delhi
(b) Chennai
(c) Mumbai
(d) Bengaluru

2. Money is

(a) acceptable only when it has intrinsic value
(b) constant in purchasing power
(c) the most liquid of all assets
(d) needed for allocation of resources

3. Paper currency system is managed by the

(a) Central Monetary authority
(b) State Government
(c) Central Government
(d) Banks

4. The basic distinction between M_1 and M_2 is with regard to .

(a) post office total deposits
(b) saving deposits with post office savings bank
(c) Terms deposits of banks
(d) currency

5. Irving Fisher's Quantity Theory of Money was popularized in

(a) 1908
(b) 1910
(c) 1911
(d) 1914.

6. MV stands for

(a) demand for money
(b) supply of legal tender money
(c) Supply of bank money
(d) Total supply of money

7. Inflation means

(a) Prices are rising
(b) Prices are falling
(c) Value of money is increasing
(d) Prices are remaining the same

8. _____ inflation results in a serious depreciation of the value of money.

(a) Creeping
(b) Walking
(c) running
(d) Hyper

9. _____ inflation occurs when general prices of commodities increases due to increase in production costs such as wages and raw materials.

(a) Cost-push
(b) demand pull
(c) running
(d) galloping

10. During inflation, who are the gainers?

(a) Debtors
(b) Creditors
(c) Wage and salary earners
(d) Government

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11. _____ is a decrease in the rate of inflation.

(a) Disinflation
(b) Deflation
(c) Stagflation
(d) Depression

12. Stagflation combines the rate of inflation with

(a) Stagnation
(b) employment
(c) output
(d) price

13. The study of alternating fluctuations in business activity is referred to in Economics as

(a) Boom
(b) Recession
(c) Recovery
(d) Trade cycle

14. During depression the level of economic activity becomes extremely

(a) high
(b) bad
(c) low
(d) good

15. "Money can be anything that is generally acceptable as a means of exchange and that thesame time acts as a measure and a store of value", This definition was given by

(a) Crowther
(b) A.C.Pigou
(c) F.A.Walker
(d) Francis Bacon

16. Debit card is an example of

(a) currency
(b) paper currency
(c) plastic money
(d) money

17. Fisher's Quantity Theory of money is based on the essential function of money as

(a) measure of value
(b5) store of value
(c) medium of exchange
(d) standard of deferred payment

18. V in MV = PT equation stands for

(a) Volume of trade
(b) Velocity of circulation of money
(c) Volume of transaction
(d) Volume of bank and credit money

19. When prices rise slowly, we call it

(a) galloping inflation
(b) mild inflation
(c) hyper inflation
(d) deflation

20. _____ inflation is in no way dangerous to the economy.

(a) walking
(b) running
(c) creeping
(d) galloping

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Answers

1	2	3	4	5	6	7	8	9	10
c	c	a	b	c	b	a	d	a	a
11	12	13	14	15	16	17	18	19	20
a	a	d	c	a	c	c	b	b	c

Part – B

Answer the following questions in one or two sentences.

21. Define Money.
22. What is barter?
23. What is commodity money?
24. What is gold standard?
25. What is plastic money? Give example.
26. Define inflation.
27. What is Stagflation?

Part – C

Answer the following questions in one paragraph.

28. Write a note on metallic money.
29. What is money supply?
30. What are the determinants of money supply?
31. Write the types of inflation.
32. Explain Demand-pull and Cost push inflation.
33. State Cambridge equations of value of money.
34. Explain disinflation.

Part – D

Answer the following questions in about a page

35. Illustrate Fisher's Quantity theory of money.
36. Explain the functions of money.
37. What are the causes and effects of inflation on the economy?
38. Describe the phases of Trade cycle.

ACTIVITY

1. Ask the students to visit anyone of the public sector or private sector nationalized banks to know the types of savings such as current account deposits, savings deposits, fixed deposits, interest rate and facilities.
2. Make the students to collect ancient period coins, currency notes and also Indian and foreign countries coins and currency notes.

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CHAPTER

6

Banking

"Commercial Banks are the institutions that make short term loans to business and in the process create Money".

- Culbertson

Learning Objectives

1. To know about the functions of central bank and commercial banks.
2. To understand the Non-Banking Financial Institutions and their functions.

6.1 Introduction

Finance is the life blood of all economic activities such as trade, commerce, agriculture and industry. A bank is generally understood as an institution which provides fundamental financial services such as accepting deposits and lending loans. Banking sector acts as the backbone of modern business world. The banking system significantly contributes for the development of any country. Due to the importance in the financial stability of a country, banks are highly regulated in most countries.

6.2 Historical Development

The world's first finance - lending bank was The Bank of Venice in 1157. The Ricks Banks of Sweden, which had sprung from a private bank established in 1656 is the oldest central bank in the world. It acquired the sole right of note issue in 1897. The Bank of England was founded in 1694. But the fundamentals of the art of banking have been developed by the Bank of England (1864) as the first bank of issues.

A large number of central banks were established between 1921 and 1954 in compliance with the resolution passed by the International Finance Conference held at Brussels in 1920. The South African

Reserve Bank (1921), the Central Bank of China (1928), The Reserve Bank of New Zealand (1934), The Reserve Bank of India (1935), the Central Bank of Ceylon (1950) and the Bank of Israel (1954) were established.

History Of Indian BANKS

- The first bank of India was Bank of Hindustan (1770) {Under British Rule}
- The Banking system in India was controlled and dominated by the Presidency Banks.

There were three Presidency Banks:

1. Bank of Bengal (1806)
2. Bank of Bombay (1840)
3. Bank of Madras (1843)

They were called Presidential Banks

All Merged (1921) → IMPERIAL BANK OF INDIA → **Change into (1955)** → SBI

6.3 Commercial banks

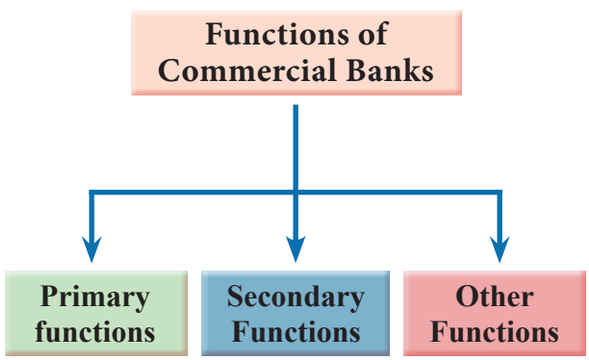
Commercial bank refers to a bank, or a division of a large bank, which more specifically deals with deposit and loan services provided to corporations or large/ middle-sized business - as opposed to individual members of the public/small business. They do not provide, long-term credit, as liquidity of assets is to be maintained.



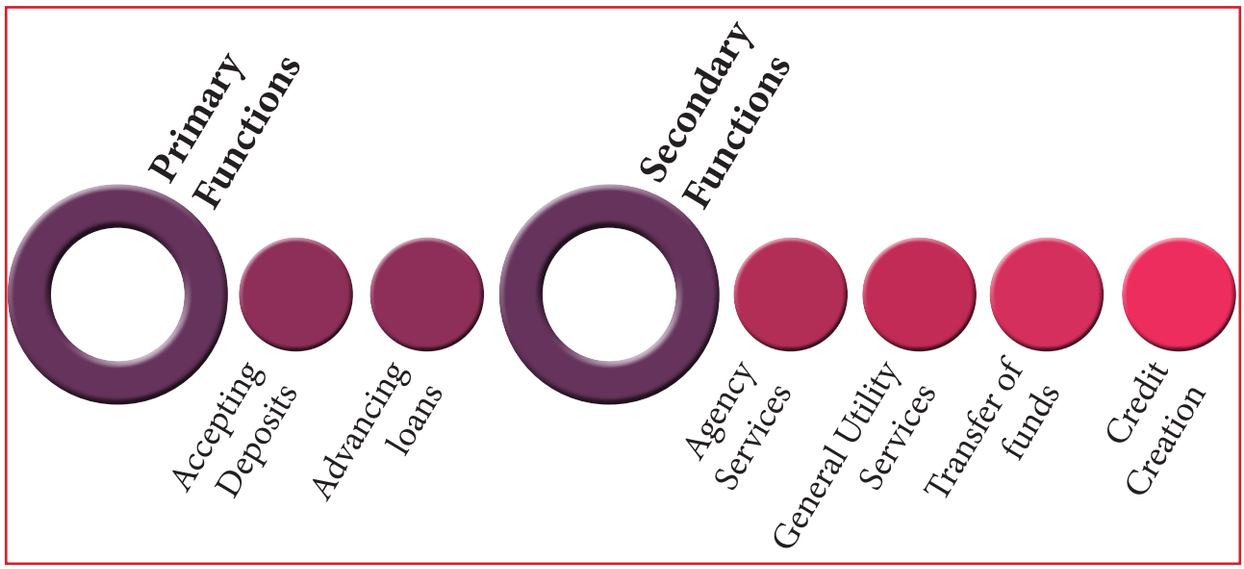
6.3.1 Functions of Commercial Banks:

Commercial banks are institutions that conduct business with profit motive by accepting public deposits and lending loans for various investment purposes.

The functions of commercial banks are broadly classified into primary functions and secondary functions, which are shown in the picture



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Functions of Commercial Banks

(a) Primary Functions:

1. Accepting Deposits

It implies that commercial banks are mainly dependent on public deposits.

There are two types of deposits, which are discussed as follows

(i) Demand Deposits

It refers to deposits that can be withdrawn by individuals without any prior notice to the bank. In other words, the owners of these deposits are allowed to withdraw money anytime by writing a withdrawal slip or a cheque at the bank counter or from ATM centres using debit card.

(ii) Time Deposits

It refers to deposits that are made for certain committed period of time. Banks pay higher rate of interest on time deposits. These deposits can be withdrawn only after a specific time period by providing a written notice to the bank.

2. Advancing Loans

It refers to granting loans to individuals and businesses. Commercial banks grant loans in the form of overdraft, cash credit, and discounting bills of exchange.

(b) Secondary Functions

The secondary functions can be classified under three heads, namely, agency functions, general utility functions, and other functions.

1. **Agency Functions:** It implies that commercial banks act as agents of customers by performing various functions.

(i) Collecting Cheques

Banks collect cheques and bills of exchange on behalf of their customers through clearing house facilities provided by the central bank.

(ii) Collecting Income

Commercial banks collect dividends, pension, salaries, rents, and interests on

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investments on behalf of their customers. A credit voucher is sent to customers for information when any income is collected by the bank.

(iii) Paying Expenses

Commercial banks make payments for various obligations of customers, such as telephone bills, insurance premium, school fees, rents etc. Similar to credit voucher, a debit voucher is sent to customers for information when expenses are paid by the bank.

(2) General Utility Functions: It implies that commercial banks provide some utility services to customers by performing various functions.

(i) Providing Locker Facilities

Commercial banks provide locker facilities to its customers for safe custody of jewellery, shares, debentures, and other valuable items. This minimizes the risk of loss due to theft at homes. Banks are not responsible for the items in the lockers.

(ii) Issuing Traveler's Cheques

Banks issue traveler's cheques to individuals for traveling outside the country. Traveler's cheques are the safe and easy way to protect money while traveling.

(iii) Dealing in Foreign Exchange

Commercial banks help in providing foreign exchange to businessmen dealing in exports and imports. However, commercial banks need to take the permission of the Central Bank for dealing in foreign exchange.

3. Transferring Funds

It refers to transferring of funds from one bank to another. Funds are transferred by means of draft, telephonic transfer, and electronic transfer.

4. Letter of Credit

Commercial banks issue letters of credit to their customers to certify their creditworthiness.

(i) Underwriting Securities

Commercial banks also undertake the task of underwriting securities. As public has full faith in the creditworthiness of banks, public do not hesitate in buying the securities underwritten by banks.

(ii) Electronic Banking

It includes services, such as debit cards, credit cards, and Internet banking.

(C) Other Functions:

(i) Money Supply

It refers to one of the important functions of commercial banks that help in increasing money supply. For instance, a bank lends ₹5 lakh to an individual and opens a demand deposit in the name of that individual. Bank makes a credit entry of ₹5 lakh in that account. This leads to creation of demand deposits in that account. The point to be noted here is that there is no payment in cash. Thus, without printing additional money, the supply of money is increased.

(ii) Credit Creation

Credit Creation means the multiplication of loans and advances.

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Commercial banks receive deposits from the public and use these deposits to give loans. However, loans offered are many times more than the deposits received by banks. This function of banks is known as 'Credit Creation'.

(iii) Collection of Statistics:

Banks collect and publish statistics relating to trade, commerce and industry. Hence, they advice customers and the public authorities on financial matters.

6.3.2. Mechanism / Technique of Credit Creation by Commercial Banks

Bank credit refers to bank loans and advances. Money is said to be created when the banks, through their lending activities, make a net addition to the total supply of money in the economy. Likewise, money is said to be destroyed when the loans are repaid by the borrowers to the banks and consequently the credit already created by the banks is wiped out in the process.

Banks have the power to expand or contract demand deposits and they exercise this power through granting more or less loans and advances and acquiring other assets. This power of commercial bank to create deposits through expanding their loans and advances is known as credit creation.

Primary / Passive Deposit and Derived / Active Deposit

The modern banks create deposits in two ways. They are **primary deposits** and **derived deposits**. When a customer gives cash to the bank and the bank creates a book debt in his name called a deposit, it is known as a "primary deposit'. But when such a deposit is created, without there being any prior payment of equivalent cash to the bank, it is called a 'derived deposit'.

Primary Deposits

- It is out of these primary deposits that the bank makes loans and advances to its customers.
- The initiative is taken by the customers themselves. In this case, the role of the bank is passive.
- So these deposits are also called "Passive deposits".

Credit Creation literally means the multiplication of loans and advances. Every loan creates its own deposits. Central Bank insists the banks to maintain a ratio between the total deposits they create and the cash in their possession.

For the purpose of understanding, it is assumed that all banks are obliged to keep the ratio between cash and its deposits at a minimum of 20 percent.

1. The banks do not keep any excess reserves, in other words, it would exhaust possible avenues of income earning activities like giving loans etc. up to the maximum extent after attaining the minimum cash reserves.
2. There are no drains in the supply of money i,e., the public do not suddenly want to hold more ideal currency or withdraw from the time deposits.

Under the above assumptions, when a customer deposits a sum of ₹1000 in a

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bank, the bank creates a deposit of ₹ 1000 in his favor. Bank deposits (Bank Money) have increased by ₹1000. But, at this stage, there is no increase in the total supply of money with the public, because the above extra bank money of ₹1000 is offset by the cash of ₹1000 deposited in the bank.

The bank has now additional cash of ₹1000 in its custody. Since it is required to keep only a cash reserve of 20 per cent, this means that ₹ 800 is excess cash reserve with it. According to the above assumption, the bank should lend out this ₹ 800 to the public. Suppose, it does so, and the debtor deposits the money in his own account with another bank B, Bank is creating a deposit of ₹ 800. Bank B then has also excess cash reserve of ₹ 640(800-160). It could, in its turn, lend out ₹ 640. This ₹ 640 will, in its turn find its way with, say Bank C; it will create a deposit of ₹ 640and so on.

The total deposits will now grow into ₹ 1000+800+640+.....till ultimately the excess cash reserve peters out. It can be shown that when that stage is reached the total of the above will be ₹ 5000.

Money Multiplier = 1/20%
=1/20/100=1/20x100=5

Credit creation is 1000x5 = ₹ 5000.

6.3.3. Role of Commercial Banks in Economic Development of a Country

1. Capital Formation

Banks play an important role in capital formation, which is essential for the economic development of a country. They mobilize the small savings of the people scattered over a wide area through their network of branches all over the country and make it available for productive purposes.



Now-a-days, banks offer very attractive schemes to induce the people to save their money with them and bring the savings mobilized to the organized money market. If the banks do not perform this function, savings either remains idle or used in creating other assets,(eg.gold) which are low in scale of plan priorities.

2. Creation of Credit

Banks create credit for the purpose of providing more funds for development projects. Credit creation leads to increased production, employment, sales and prices and thereby they bring about faster economic development.

3. Channelizing the Funds towards Productive Investment

Banks invest the savings mobilized by them for productive purposes. Capital formation is not the only function of commercial banks. Pooled savings should be allocated to various sectors of the economy with a view to increase the productivity. Then only it can be said to have performed an important role in the economic development.

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4. Encouraging Right Type of Industries

Many banks help in the development of the right type of industries by extending loan to right type of persons. In this way, they help not only for industrialization of the country but also for the economic development of the country. They grant loans and advances to manufacturers whose products are in great demand. The manufacturers in turn increase their products by introducing new methods of production and assist in raising the national income of the country. Sometimes, sub-prime lending is also clone. That is how there was an economic crisis in the year 2007-08 in the US.

5. Banks Monetize Debt

Commercial banks transform the loan to be repaid after a certain period into cash, which can be immediately used for business activities. Manufacturers and wholesale traders cannot increase their sales without selling goods on credit basis. But credit sales may lead to locking up of capital. As a result, production may also be reduced. As banks are lending money by discounting bills of exchange, business concerns are able to carryout the economic activities without any interruption.

6. Finance to Government

Government is acting as the promoter of industries in underdeveloped countries for which finance is needed for it. Banks provide long-term credit to Government by investing their funds in Government securities and short-term finance by purchasing Treasury Bills. RBI has given ₹ 68,000 crores to the government of India in the year 2018-19, this is 99% the RBI's surplus.

7. Employment Generation

After the nationalization of big banks, banking industry has grown to a great extent. Bank's branches are opened frequently, which leads to the creation of new employment opportunities.

8. Banks Promote Entrepreneurship

In recent days, banks have assumed the role of developing entrepreneurship particularly in developing countries like India by inducing new entrepreneurs to take up the well-formulated projects and provision of counseling services like technical and managerial guidance.

Banks provide 100% credit for worthwhile projects, which is also technically feasible and economically viable. Thus commercial banks help for the development of entrepreneurship in the country.

6.4 Non-Banking Financial Institution (NBFI)

A non-banking financial institution (NBFI) or non-bank financial company (NBFC) is a financial institution that does not have a full banking license or is not supervised by the central bank.

The NBFIs do not carry on pure banking business, but they will carry on other financial transactions. They receive deposits and give loans. They mobilize people's savings and use the funds to

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finance expenditure on investment activities. In short, they are institutions which undertake borrowing and lending. They operate in both the money and the capital markets.



NBFIs can be broadly classified into two categories. Viz.., (1) Stock Exchange; and (2) Other Financial institutions. Under the latter category comes Finance Companies, Finance Corporations, ChitFunds, Building Societies, Issue Houses, Investment Trusts and Unit Trusts and Insurance Companies.

6.5 Central Bank

A central bank, reserve bank, or monetary authority is an institution that manages a state's currency, money supply, and interest rates. Central banks also usually oversee the commercial banking system of their respective countries.

6.5.1 Functions of Central Bank (Reserve Bank of India)

The Reserve Bank of India (RBI) is India's central banking institution, which controls the monetary policy of the Indian rupee. It commenced its operations on 1 April 1935 in accordance with the Reserve Bank of India Act, 1934. The original share capital was divided into shares of ₹100 each fully paid, which were initially owned entirely by private shareholders. Following India's independence on 15 August 1947, the RBI was nationalised on 1 January 1949.



1. **Monetary Authority:** It controls the supply of money in the economy to stabilize exchange rate, maintain healthy balance of payment, attain financial stability, control inflation, strengthen banking system.

2. **The issuer of currency:** The objective is to maintain the currency and credit system of the country. It is the sole authority to issue currency. It also takes action to control the circulation of fake currency.

3. **The issuer of Banking License:** As per Sec 22 of Banking Regulation Act, every bank has to obtain a banking license from RBI to conduct banking business in India.

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RESERVE BANK OF INDIA

History:

- Formed on April 1, 1935 in accordance with the RBI Act, 1934
- Nationalized on January 1, 1949 (Fully owned by GOI)
- Headquarter moved from Calcutta to Mumbai in 1937
- Osborne Smith was the first Governor of RBI

Administration:

- It is the Central Bank/ Regulator for all banks in India
- Also called "Lender of Last Resort"
- Governors and 4 Deputy Governors along with a central board of directors appointed by the GOI.

Functions:

- Issues currency
- Banker to the government

{It collects receipts of funds and makes payments on behalf of the government}

- Regulator of Indian Banking system
- Custodian of Forex
- Controller of credit

The process of issuing paper currency was started in the 18th century. Private Banks such as the bank of Bengal the bank of Bombay and the Bank of Madras – first printed paper money.

The first rupee was introduced by Sher Shah Suri based on a ratio of 40 copper pieces (paisa) per rupee. The name was derived from the Sanskrit word Raupya, meaning silver. Each banknote has its amount written in 17languages (English and Hindi on the front and 15 others on the back) illustrating the diversity of the country.

4. **Banker to the Government:** It acts as banker both to the central and the state governments. It provides short-term credit. It manages all new issues of government loans, servicing the government debt outstanding and nurturing the market for government securities. It advises the government on banking and financial subjects.

5. **Banker's Bank:** RBI is the bank of all banks in India as it provides loan to banks, accept the deposit of banks, and rediscount the bills of banks.

6. **Lender of last resort:** The banks can borrow from the RBI by keeping eligible securities as collateral at the time of need or crisis, when there is no other source.

7. **Act as clearing house:** For settlement of banking transactions, RBI manages 14 clearing houses. It facilitates the exchange of instruments and processing of payment instructions.

8. **Custodian of foreign exchange reserves:** It acts as a custodian of FOREX. It administers and enforces the provision of Foreign Exchange Management Act (FEMA), 1999. RBI buys and sells foreign currency to maintain the exchange rate of Indian rupee v/s foreign currencies.

9. **Regulator of Economy:** It controls the money supply in the system, monitors different key indicators like GDP, Inflation, etc.

10. **Managing Government securities:** RBI administers investments in institutions when they invest specified minimum proportions of their total assets/liabilities in government securities.
11. **Regulator and Supervisor of Payment and Settlement Systems:** The Payment and Settlement Systems Act of 2007 (PSS Act) gives RBI oversight authority for the payment and settlement systems in the country. RBI focuses on the development and functioning of safe, secure and efficient payment and settlement mechanisms.
12. **Developmental Role:** This role includes the development of the quality banking system in India and ensuring that credit is available to the productive sectors of the economy. It provides a wide range of promotional functions to support national objectives. It also includes establishing institutions designed to build the country's financial infrastructure. It also helps in expanding access to affordable financial services and promoting financial education and literacy.
13. **Publisher of monetary data and other data:** RBI maintains and provides all essential banking and other economic data, formulating and critically evaluating the economic policies in India. RBI collects, collates and publishes data regularly.
14. **Exchange manager and controller:** RBI represents India as a member of the International Monetary Fund [IMF]. Most of the commercial banks are authorized dealers of RBI.
15. **Banking Ombudsman Scheme:** RBI introduced the Banking Ombudsman Scheme in 1995. Under this scheme, the complainants can file their complaints in any form, including online and can also appeal to the Ombudsman against the awards and the other decisions of the Banks.
16. **Banking Codes and Standards Board of India:** To measure the performance of banks against Codes and standards based on established global practices, the RBI has set up the Banking Codes and Standards Board of India (BCSBI).

6.5.2. Credit Control Measures



Credit control is the primary mechanism available to the Central banks to realize the objectives of monetary management. The RBI is much better placed than many of credit control. The statutory basis for the control of the credit system by the Reserve Bank is embodied in the Reserve Bank of India Act, 1934 and the Banking Regulation Act, 1949.

Credit Control Measures

General (Quantitative)	Selective (Qualitative)
1. Bank Rate	1. Rationing of Credit
2. Open Market Operations	2. Direct Action
3. Variable Cash Reserve Ratio	3. Moral suasion
	4. Publicity
	5. Regulation of Consumer' Credit
	6. Marginal Requirements

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6.5.3. Methods of Credit Control

I. Quantitative or General Methods:

1. Bank Rate Policy:

The bank rate is the rate at which the Central Bank of a country is prepared to re-discount the first class securities. It means the bank is prepared to advance loans on approved securities to its member banks. As the Central Bank is only the lender of the last resort the bank rate is normally higher than the market rate. For example: If the Central Bank wants to control credit, it will raise the bank rate. As a result, the deposit rate and other lending rates in the money-market will go up. Borrowing will be discouraged, and will lead to contraction of credit and vice versa.

2. Open Market Operations:

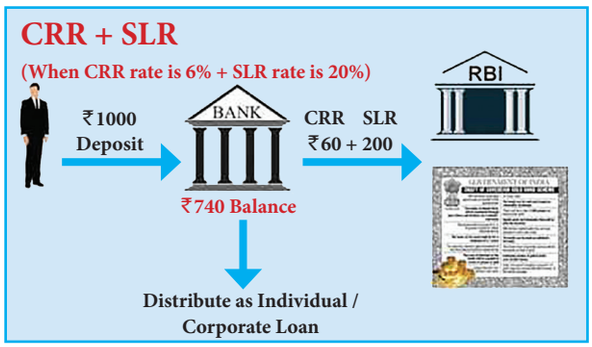
In narrow sense, the Central Bank starts the purchase and sale of Government securities in the money market.

In Broad Sense, the Central Bank purchases and sells not only Government securities but also other proper eligible securities like bills and securities of private concerns. When the banks and the private individuals purchase these securities they have to make payments for these securities to the Central Bank.

3. Variable Reserve Ratio:

a) Cash Reserves Ratio:

Under this system the Central Bank controls credit by changing the Cash Reserves Ratio. For example, if the Commercial Banks have excessive cash reserves on the basis of which they are creating too much of credit,this will be harmful for the larger interest of the economy. So it will raise the cash reserve ratio which the Commercial Banks are required to maintain with the Central Bank.



Similarly, when the Central Bank desires that the Commercial Banks should increase the volume of credit in order to bring about an economic revival in the economy, the central Bank will lower down the Cash Reserve Ratio with a view to expand the lending capacity of the Commercial Banks.

Variable Cash Reserve Ratio as an objective of monetary policy was first suggested by J.M. Keynes. It was first followed by Federal Reserve System in United States of America. The commercial banks as per the statute have to maintain reserves based on their demand deposit and fixed deposit with central bank is called as Cash Reserve Ratio.

If the CRR is high, the commercial bank's capacity to create credit will be less and if the CRR is low, the commercial bank's capacity to create credit will be high.

b) Statutory Liquidity Ratio:

Statutory Liquidity Ratio (SLR) is the amount which a bank has to maintain

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in the form of cash, gold or approved securities. The quantum is specified as some percentage of the total demand and time liabilities (i.e., the liabilities of the bank which are payable on demand anytime, and those liabilities which are accruing in one month's time due to maturity) of a bank.

II. Qualitative or Selective Method of Credit Control:

The qualitative or the selective methods are directed towards the diversion of credit into particular uses or channels in the economy. Their objective is mainly to control and regulate the flow of credit into particular industries or businesses. The following are the frequent methods of credit control under selective method:

1. Rationing of Credit
2. Direct Action
3. Moral Persuasion
4. Method of Publicity
5. Regulation of Consumer's Credit
6. Regulating the Marginal Requirements on Security Loans

1. Rationing of Credit

This is the oldest method of credit control. Rationing of credit as an instrument of credit control was first used by the Bank of England by the end of the 18th Century. It aims to control and regulate the purposes for which credit is granted by commercial banks. It is generally of two types.

a) **The variable portfolio ceiling:** It refers to the system by which the central bank fixes ceiling or maximum amount of loans and advances for every commercial bank.

b) **The variable capital asset ratio:** It refers to the system by which the central bank fixes the capital ratio which the commercial bank should have to the total assets of the bank.

2. Direct Action

Direct action against the erring banks can take the following forms.

a) The central bank may refuse to altogether grant discounting facilities to such banks.

b) The central bank may refuse to sanction further financial accommodation to a bank whose existing borrowing are found to be in excess of its capital and reserves.

c) The central bank may start charging penal rate of interest on money borrowed by a bank beyond the prescribed limit.

3. Moral Suasion

This method is frequently adopted by the Central Bank to exercise control over the Commercial Banks. Under this method Central Bank gives advice, then requests. and persuades the Commercial Banks to co-operate with the Central Bank in implementing its credit policies.

4. Publicity

Central Bank in order to make their policies successful, takes the course of the medium of publicity. A policy can

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be effectively successful only when an effective public opinion is created in its favour.

5. Regulation of Consumer's Credit:

The down payment is raised and the number of installments reduced for the credit sale.

6. Changes in the Marginal Requirements on Security Loans:

This system is mostly followed in U.S.A. Under this system, the Board of Governors of the Federal Reserve System has been given the power to prescribe margin requirements for the purpose of preventing an excessive use of credit for stock exchange speculation.

This system is specially intended to help the Central Bank in controlling the volume of credit used for speculation in securities under the Securities Exchange Act, 1934.

The Repo Rate and the Reverse Repo Rate are the frequently used tools with which the RBI can control the availability and the supply of money in the economy. RR is always greater than RRR in India

Repo Rate: (RR)	Reverse Repo Rate: (RRR)
The rate at which the RBI is willing to lend to commercial banks is called Repo Rate. Whenever banks have any shortage of funds they can borrow from the RBI, against securities. If the RBI increases the Repo Rate, it makes borrowing expensive for banks and vice versa. As a tool to control inflation, RBI increases the Repo Rate, making it more expensive for the banks to borrow from the RBI. Similarly, the RBI will do the exact opposite in a deflationary environment.	The rate at which the RBI is willing to borrow from the commercial banks is called reverse repo rate. If the RBI increases the reverse repo rate, it means that the RBI is willing to offer lucrative interest rate to banks to park their money with the RBI. This results in a decrease in the amount of money available for banks customers as banks prefer to park their money with the RBI as it involves higher safety. This naturally leads to a higher rate of interest which the banks will demand from their customers for lending money to them.

6.5.4 Reserve Bank of India and Rural Credit

In a developing economy like India, the Central bank of the country cannot confine itself to the monetary regulation only, and it is expected that it should take part in development function in all sectors especially in agriculture and industry.

6.5.5 Role of RBI in agricultural credit

RBI has been playing a very vital role in the provision of agricultural finance in the country. The Bank's responsibility in this field had been increased due to the predominance of agriculture in the Indian economy and the inadequacy of the formal agencies to cater to the huge requirements of the sector. In order to fulfill this

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important role effectively, the RBI set up a separate *Agriculture Credit Department.* However, the volume of informal loans has not declined sufficiently.

6.5.6 Functions of Agriculture Credit Department:

a) To maintain an expert staff to study all questions on agricultural credit;

b) To provide expert advice to Central and State Government, State Co-operative Banks and other banking activities.

c) To finance the rural sector through eligible institutions engaged in the business of agricultural credit and to co-ordinate their activities.

The duties of the RBI in agricultural credit were much restricted as it had to function only in an ex-officio capacity being the Central Bank of the country. It could not lend directly to the farmers, but the supply of rural credit was done through the mechanism of refinance with institutions specializing in rural credit. Primary societies may borrow from Central Co-operative Bank, and the latter may borrow from the apex or the State Co-operative Bank, which in its turn might get accommodation facilities from the RBI.

The RBI was providing medium-term loans also for a period exceeding 15 months to 5 years for reclamation of land, construction of irrigation works, purchase of machinery, etc.

The Reserve Bank of India was also providing long-term loans to finance permanent changes in land and also for the redemption of old debts.

With the establishment of *National Bank for Agriculture and Rural Development* (NABARD), all the functions of the RBIrelating to agricultural credit had been taken over and looked after by NABARD since 1982. Since then, all activities relating to rural credit are entirely looked after by NABARD.

6.6 The Agricultural Refinance Development Corporation (ARDC)

Farmers in India require mainly medium term and long term loans and they face a lot of difficulties in getting them. The only organization providing long term credit is Land Development Banks which have lagged behind and recorded only limited success. The credit requirements of the agricultural sector are increasing year after year. With the aim of bridging the gap in agricultural finance and to extend credit for projects involving agricultural development, an organization called the Agricultural Refinance Development Corporation (ARDC) was established by an Act of Parliament and it started functioning from July 1, 1963.

6.6.1 Objectives of the ARDC:

(i) To provide necessary funds by way of refinance to eligible institutions such as the Central Land Development Banks, State Co-operative Banks, and Scheduled banks.

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(ii) To subscribe to the debentures floated by the Central Land Development banks, State Co-operative Banks, and Scheduled banks, provided they were approved by the RBI.

6.7 Regional Rural Banks (RRBs)

One of the important points of the 20 points economic programme of Mrs. Indira Gandhi during the declaration of state of emergency was the liquidation of rural indebtedness by stages and provide institutional credit to farmers and artisans in rural areas. It was in pursuance of this aspect of the New Economic programme that the Government of India setup Regional Rural Banks (RRBs) on 1975. The share capital of RRB is subscribed by the Central Government (50%), the State Government concerned (15%), and the sponsoring commercial bank (35%).

The main objective of the RRBs is to provide credit and other facilities particularly to the small and marginal farmers, agricultural labourers, artisans and small entrepreneurs so as to develop agriculture, trade, commerce, industry and other productive activities in the rural areas.

6.7.1 Concessions to RRBs

From the beginning, the sponsor banks have continued to provide managerial and financial assistance to RRBs and also other concessions such as lower rate of interest (8.5 per cent) on the latter's borrowings from sponsor banks. Further, the cost of staff deputed to RRBs and training expenses of RRB staff are borne by the sponsor banks.

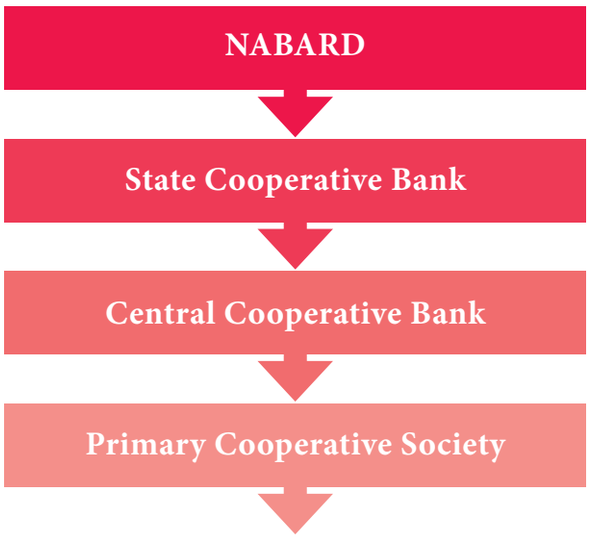
The RBI has been granting many concessions to RRBs:

(a) They are allowed to maintain cash reserve ratio at 3 per cent and statutory liquidity ratio at 25 per cent; and

(b) They also provide refinance facilities through NABARD.

6.8 NABARD and its role in Agricultural credit

Since its inception, RBI has shown keen interest in agricultural credit and maintained a separate department for this purpose. RBI extended short-term seasonal credit as well as medium-term and long-term credit to agriculture through State level co-operative banks and Land Development banks.



Three Tier Cooperative Credit Structure

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At the same time, RBI has also set up the Agricultural Refinance Development Corporation (ARDC) to provide refinance support to the banks to promote programmes of agricultural development, particularly those requiring term credit. With the widening of the role of bank credit from "agricultural development" to "rural development" the Government proposed to have a more broad-based organization at the apex level to extend support and give guidance to credit institutions in matters relating to the formulation and implementation of rural development programmes.



A National Bank for Agriculture and Rural Development (NABARD), was therefore, set up in July 1982 by an Act of Parliament to take over the functions of ARDC and the refinancing functions of RBI in relation to co-operative banks and RRBs. NABARD is linked organically with the RBI by the latter contributing half of its share capital the other half being contributed by the Government of India(GOI). GOI nominates three of its Central Board Directors on the board of NABARD.A Deputy Governor of RBI is appointed as Chairman of NABARD.

6.8.1 Functions of NABARD

NABARD has inherited its apex role from RBI i.e, it is performing all the functions performed by RBI with regard to agricultural credit.

(i) NABARD acts as a refinancing institution for all kinds of production and investment credit to agriculture, small-scale industries, cottage and village industries, handicrafts and rural crafts and real artisans and other allied economic activities with a view to promoting integrated rural development.

(ii) It provides short-term, medium-term and long-term credits to state co-operative Banks (SCBs), RRBs, LDBs and other financial institutions approved by RBI.

(iii) NABARD gives long-term loans (upto 20 Years) to State Government to enable them to subscribe to the share capital of co-operative credit societies.

(iv) NABARD gives long-term loans to any institution approved by the Central Government or contribute to the share capital or invests in securities of any institution concerned with agriculture and rural development.

(v) NABARD has the responsibility of co-ordinating the activities of Central and State Governments, the Planning Commission (now NITI Aayog) and other all India and State level institutions entrusted with the development of small scale industries, village and cottage industries, rural crafts, industries in the tiny and decentralized sectors, etc.

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(vi) It has the responsibility to inspect RRBs and co-operative banks, other than primary co-operative societies.

(vii) It maintains a Research and Development Fund to promote research in agriculture and rural development

6.9 Reserve bank of India and industrial finance

Though industries get finance from commercial banks, the quantum and the term will be very much limited generally. Commercial banks lend for short term only, as they get only short-term deposits from the public. Further lending to industries is only a fragment of the total lending by the banks.

Hence, there is a need and urgency of establishing long-term credit facilities to industries.The institutional set-up in India for financing and promoting industries are as follows

6.9.1 Institutional Set-up:

All-India Level Institutions

- Industrial Finance Corporation of India (IFCI)
- Industrial Credit and Investment Corporation of India (ICICI)
- Industrial Development Bank of India (IDBI)

State Level Institutions

- State Financial Corporations (SFCs)
- State Industrial Development Corporation (SIDCs)

6.9.2 All-India Level Institutions:

1. Industrial Finance Corporation of India (IFCI)

This was first in the chain of establishment of financial corporations to provide financial assistance for industrial development. This was established on July 1, 1948 under the Act of the Parliament. IFCI provides assistance to the industrial concerns in the following ways:

i) Long-term loans; both in rupees and foreign currencies.

ii) Underwriting of equity, preference and debenture issues.

iii) Subscribing to equity, preference and debenture issues.

iv) Guaranteeing the deferred payments in respect of machinery imported from abroad or purchased in India; and

v) Guaranteeing of loans raised in foreign currency from foreign financial institutions.

Financial assistance of IFCI can be availed by any Limited Company in the public, private or joint sector, or by a co-operative society incorporated in India, which is engaged or proposes to be engaged in the specified industrial activities. Such financial assistance will be available for the setting up of new industrial projects and also for the expansion, diversification, renovation or modernisation of existing ones. The IFCI also provides financial assistance on concessional terms for setting up industrial projects in

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industrially less developed districts in the States or Union Territories notified by the Central Government,

The IFCI raises its resources by way of (a) issue of bonds in the market; (b) borrowing from Industrial Development Bank of India and the Central Government; (c) foreign credit secured from foreign financial institutions and borrowings in the international capital markets.

3. Industrial Credit and Investment Corporation of India (ICICI)

ICICI [Industrial Credit and Investment Corporation of India]

Functions of ICICI

- Assistance to industries
- Provision of foreign currency loans
- Merchant banking
- Letter of credit
- Project promotion
- Housing loans
- Leasing operations

This was set up on 5th January 1955 as a joint-stock company on the advice given by a three-man mission sponsored by the World Bank and The Government of USA to the Government of India. The principal purpose of this institution is to channelize the World Bank funds to industry in India and also to help build up a capital market. Initially the capital of ICICI was held by private companies, institutions and individuals. But now, a very large part of its equity capital is held by public sector institutions, such as banks, LIC, GIC and its subsidiaries, as 'this private institution was nationalized.

The significant feature of the operations of ICICI is the foreign currency loans sanctioned by this institution to industries. Since its inception, nearly 50 per cent of its disbursement had been in foreign currencies. This is possible because of the facility it enjoys of raising funds in foreign currencies. The World Bank has been the single largest source of such funds. Since 1973, the ICICI has entered the international capital markets also for raising foreign currency loans.

The major portion of its rupee resources is raised by way of debentures in the capital market. The ICICI also borrows from the Industrial Development Bank of India and the Government. The major portion of its assistance has gone to the private sector.

3. Industrial Development Bank of India (IDBI)

INDUSTRIAL DEVELOPMENT BANK OF INDIA

The Industrial Development Bank of India has been conceived with the

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primary object of creating an apex institution to co-ordinate the activities of other financial institutions, including banks. The Development Bank was a wholly owned subsidiary of the Reserve Bank of India upto February 15, 1976. It was delinked from the RBI with effect from February 16, 1976 and made an autonomous corporation fully owned by the Government of India.

Functions of IDBI: The functions of IDBI fall into two groups (i) Assistance to other financial institutions; and (ii) Direct assistance to industrial concerns either on its own or in participation with other institutions. The IDBI can provide refinance in respect of term loans to industrial concerns given by the IFC, the SFCs, other financial institutions notified by the Government, scheduled banks and state cooperative banks.

A special feature of the IDBI is the provision for the creation of a special fund known as the Development Assistance Fund. The fund is intended to provide assistance to industries which require heavy investments with low anticipated rate of return. Such industries may not be able to get assistance in the normal course. The financing of exports was also undertaken by the IDBI till the establishment of EXIM BANK in March, 1982.

6.9.3 State Level Institutions

1. State Financial Corporation (SFCs)

The government of India passed in 1951 the State Financial Corporations Act and SFCs were set up in many states. The SFCs are mainly intended for the development of small and medium industrial units within their respective states. However, in some cases they extend to neighboring states as well.



The SFCs provide loans and underwriting assistance to industrial units having paid-up capital and reserves not exceeding ₹ 1 crore. The maximum amount that can be sanctioned to an industrial concern by SFC is ₹ 60 lakhs.

SFCs depend upon the IDBI for refinance in respect of the term loans granted by them. Apart from these, the SFCs can also make temporary borrowings from the RBI and borrowings from IDBI and by the sale of bonds.

2. State Industrial Development Corporations (SIDCOs)

The Industrial Development Corporations have been set up by the state governments and they are wholly owned by them. These institutions are not merely financing agencies; they are entrusted with the responsibility of accelerating the industrialization of their states.

SIDCO

Small Industrial Development Corporation

SIDCOs provide financial assistance to industrial concerns by way of loans guarantees and underwriting of or direct subscriptions to shares and debentures. In addition to these, they undertake various promotional activities, such as conducting techno-economic surveys, project identification, preparation of feasibility studies and selection and training of entrepreneurs. They also promote joint sector projects in association with private promoter in such type of projects. SIDCOs take 26 percent, private co-promoter takes 25 percent of the equity, and the rest is offered to the investing public. SIDCOs undertake the development of industrial areas by providing all infrastructural facilities and initiation of new growth centers. They also administer various State government incentive schemes. SIDCOs get refinance facilities form IDBI. They also borrow through bonds and accept deposits.

6.10 Monetary Policy

Monetary Policy is the macroeconomic policy being laid down by the Central Bank towards the management of money supply and interest rate. It is the demand side economic policy used by the government of a country to achieve macroeconomic objectives like inflation, consumption, growth and liquidity. The monetary policy gained its significance after the World War II, thanks to the initiation made by Milton Friedman, who is associated with the doctrine of "monetarism" and who received Nobel Prize in 1976. He boldly announced in his book "Monetary History of the UnitedStates, 1867 – 1960" that the Great Depression of the 1930's was largely the outcome of the bungling monetary policies of the Federal Reserve System.



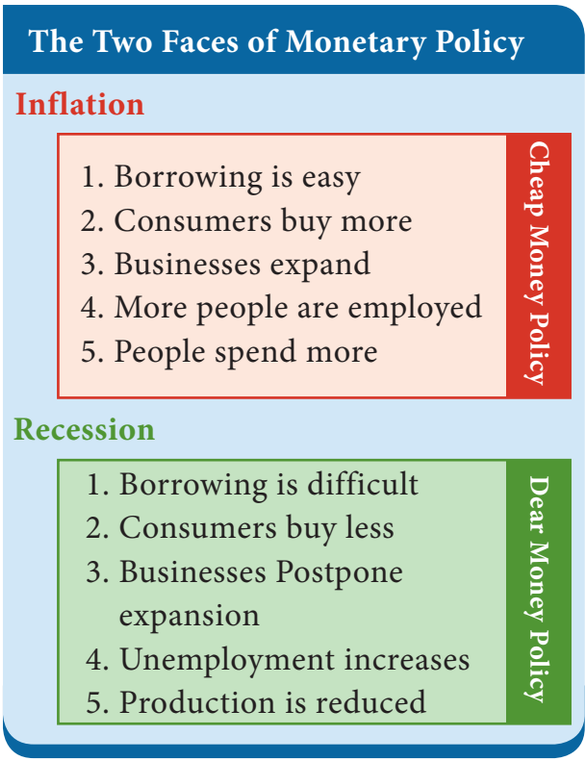
Milton Friedman

6.10.1 Monetary Policy: Expansionary Vs. Contractionary

Expansionary policy is cheap money policy when a monetary authority uses its tools to stimulate the economy. An expansionary policy maintains short-term interest rates at a lower than usual rate or increases the total supply of money in the economy more rapidly than usual. It is traditionally used to try to combat unemployment by lowering interest rates in the hope that less expensive credit will entice businesses into expanding. This increases aggregate demand (the overall demand for all goods and services in an economy), which boosts short-term growth as measured by gross domestic product (GDP) growth.

The Contractionary monetary policy is dear money policy, which maintains short-term interest rates higher than usual or which slows the rate of growth in the money supply or even shrinks it. This slows short-term economic growth and lessens inflation. Contractionary monetary policy can lead to increased unemployment and depressed borrowing and spending by consumers and businesses, which can eventually result in an economic recession if implemented too vigorously.

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6.10.2 Objectives of Monetary Policy

The monetary policy in developed economies has to serve the function of stabilization and maintaining proper equilibrium in the economic system. But in case of underdeveloped countries, the monetary policy has to be more dynamic so as to meet the requirements of an expanding economy by creating suitable conditions for economic progress. It is now widely recognized that monetary policy can be a powerful tool of economic transformation.

6.10.3 The specific objectives of monetary policy are



1. Neutrality of Money

Economists like Wicksteed, Hayek and Robertson are the chief exponents of neutral money. They hold the view that monetary authority should aim at neutrality of money in the economy. Monetary changes could be the root cause of all economic fluctuations. According to neutralists, the monetary change causes distortion and disturbances in the proper operation of the economic system of the country.

2. Exchange Rate Stability

Exchange rate stability was the traditional objective of monetary authority. This was the main objective under Gold Standard among different countries. When there was disequilibrium in the balance of payments of the country, it was automatically corrected by movements. It was popularly known as "Expand Currency and Credit when gold is coming in; contract currency and credit when gold is going out." This system will correct the disequilibrium in the balance of payments and exchange rate stability will be maintained.

It must be noted that if there is instability in the exchange rates, it would result in outflow or inflow of gold resulting in unfavorable balance of payments. Therefore, stable exchange rates are advocated.

3. Price Stability

Economists like Crustave Cassel and Keynes suggested price stabilization as a main objective of monetary policy. Price stability is considered the most genuine

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objective of monetary policy. Stable prices repose public confidence. It promotes business activity and ensures equitable distribution of income and wealth. As a consequence, there is general wave of prosperity and welfare in the community.

But it is admitted that price stability does not mean 'price rigidity' or price stagnation'. A mild increase in the price level provides a tonic for economic growth. It keeps all virtues of a stable price.

4. Full Employment

During world depression, the problem of unemployment had increased rapidly. It was regarded as socially dangerous, economically wasteful and morally deplorable. Thus, full employment was considered as the main goal of monetary policy. With the publication of Keynes' General Theory of Employment, Interest and Money in 1936, the objective of full employment gained full support as the chief objective of monetary policy.

5. Economic Growth

Economic growth is the process whereby the real per capita income of a country increases over a long period of time. It implies an increase in the total physical or real output, production of goods for the satisfaction of human wants.

Therefore, monetary policy should promote sustained and continuous economic growth by maintaining equilibrium between the total demand for money and total production capacity and further creating favourable conditions for saving and investment. For bringing equality between demand and supply, flexible monetary policy is the best course.

6. Equilibrium in the Balance of Payments

Equilibrium in the balance of payments is another objective of monetary policy which emerged significant in the post war years. This is simply due to the problem of international liquidity on account of the growth of world trade at a more faster speed than the world liquidity.

It was felt that increasing of deficit in the balance of payments reduces the ability of an economy to achieve other objectives. As a result, many less developed countries have to curtail their imports which adversely affects development activities. Therefore, monetary authority makes efforts to maintain equilibrium in the balance of payments.

6.11 Recent Advancements in Banking Sector

YC9GP

6.11.1 E- Banking



Online banking, also known as internet banking, is an electronic payment system that enables customers of a bank or other financial institution to conduct a range of financial transactions through the financial institution's website. The online banking system typically connects to or be part of the core banking system operated by a bank and is in contrast to branch banking which was the traditional way customers accessed banking services.

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Today, "virtual banks" (or "direct banks") have only an internet presence, which enables them to lower costs than traditional brick-and-mortar banks.

6.11.2 RTGS and NEFT

Inter Bank Transfer enables electronic transfer of funds from the account of the remitter in one Bank to the account of the beneficiary maintained with any other Bank branch. There are two systems of Inter Bank Transfer - RTGS and NEFT. Both these systems are maintained by RBI. NEFT operates in half hourly batches. Currently there are twenty three settlements from 8 am to 7 pm on all working days including working Saturdays. Therefore, the beneficiary can expect to get the credit for the transactions put through between 8 am to 5.30 pm on all working days including working Saturdays on the same day.

For transactions settled in the 6.30 and 7 pm batches on all working days including working Saturdays, the credit will be afforded either on the same day or on the next working day.

NEFT	RTGS
National electronic Fund Transfer	Real Time Gross Settlement
Transactions happens in batches hence slow	Transactions Happens in real time hence fast
Timings : 8:00 am to 6:30 pm (12: 30 pm on Saturday)	Timings : 9:00 am to 4:30 pm (1:30 pm on Saturday)
No minimum limit	Minimum amount for RTGS transfer is ₹ 2 lakhs

6.11.3 ATM (Automated Teller Machine)

ATMs transformed the bank tech system when they were first introduced in 1967. The next revolution in ATMs is likely to involve contactless payments. Much like Apple Pay or Google Wallet, soon we will be able to conduct contactless ATM transactions using a smartphone.

Some ATM innovations are already available overseas. For example, biometric authentication is already used in India, and its recognition is in place at Qatar National Bank ATMs. These technologies can help overall bank security by protecting against ATM hacks.



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6.11.4 Paytm

Payments Bank. In August 2015, Paytm received a license from RBI to launch a payments bank. The Paytm Payments Bank is a separate entity in which founder Vijay Shekhar Sharma will hold 51% share, One97 Communications holds 39% and 10% will be held by a subsidiary of One97 and Sharma.

6.11.5 Debit card and Credit Card



A Debit card is a card allowing the holder to transfer money electronically from their bank account when making a purchase.



A credit card is a payment card issued to users (cardholders) to enable the cardholder to pay a merchant for goods and services based on the cardholder's promise to the card issuer to pay them for the amounts so paid plus the other agreed charges. The card issuer (usually a bank) creates a revolving account and grants a line of credit to the cardholder, from which the cardholder can borrow money for payment to a merchant or as a cash advance. In other words, credit cards combine payment services with extensions of credit. Complex fee structures in the credit card industry may limit customers' ability to shopping.

6.11.6 Recent Issues

Once the borrower fails to make interest or principal payments for 90 days the loan is considered to be a non-performing asset (NPA). NPAs are problematic for financial institutions since they depend on interest payments for income. As on now the size of NPAs is estimated to be around 10 lakh crores. As a result, the banks do not have adequate capital. Hence the Government (of India) is forced to infuse capital to the banks by using poor tax – payers money. Already more than a sum of ₹ 2 lakh crores have been injected. During 2018 - 19, the GOI has infused ₹68,000 crores into the banking system. Thus the NPAs ultimately affect the common people.

6.11.7 Merger of Banks

Union Cabinet decided to merge all the remaining five associate banks of State Bank Group with State Bank of India in 2017. After the Parliament passed the merger Bill, the subsidiary banks have ceased to exist.

Five associates and the Bharatiya Mahila Bank have become the part of State Bank of India (SBI) beginning from April 1, 2017. This has placed State Bank of India among the top 50 banks in the world. The five associate banks that were merged are State Bank of Bikaner and Jaipur (SBBJ),

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State Bank of Hyderabad (SBH), State Bank of Mysore (SBM), State Bank of Patiala (SBP) and State Bank of Travancore (SBT). The other two Associate Banks namely State Bank of Indore and State Bank of Saurashtra had already been merged with State Bank of India. After the merger, the total customer base of SBI increased to 37 crore with a branch network of around 24,000 and around 60,000 ATMs across the country.

6.12 Money Market

Money market is the mechanism through which short term funds are loaned and borrowed. It designates financial instittutions which handle the purchase, sale and transfer of short term credit instruments. Commercial banks, acceptance houses, Non Banking Financial Institutions and the Central Bank are the institutions catering to the requirements of short term funds in the money Market.

6.13 Capital Market

Capital Market is a part of financial system which is concerned with raising capital by dealing in shares, bonds and other long term investments.

The market where investment instruments like bonds, equities and mortgages are traded is known as the capital market

6.14 Demonetisation



Demonitisation is the act of stripping a currency unit of its status as legal tender. It occurs whenever there is a change of national currency. The current form or forms of money is pulled from circulation, often to be replaced with new coins or notes. On 8 November 2016, the Indian Prime Minister Mr. Narendra Modi announced the demonetization of all ₹500 and ₹1000 bank notes of the Mahatma Gandhi Series. However, more than 99% of those currencies came back to the RBI.

6.14.1 Objectives of Demonetisation

1. Removing Black Money from the country.
2. Stopping of Corruption.
3. Stopping Terror Funds.
4. Curbing Fake Notes

Summary

It is well-recognized that the financial sector plays a critical role in the development process of a country. Financial institutions, instruments and markets that constitute the financial sector act as a conduit for the transfer of resources

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from net savers to net borrowers, that is, from those who spend less than they earn to those who spend more than they earn. The outcome of the various reform measures so far has been impressive and banks have responded to the deregulation and the increasingly competitive environment by restructuring their operation and upgrading performance standards. However, in the 2010s the volumes of NPAs have increased sharply.

Glossary

- **Commercial Banks:** These are the institutions that make short term loans to business and in the process create money.
- **Credit Creation:** It means the multiplication of loans and advances. Commercial banks receive deposits from the public and use these deposits to give loans.
- **Non-Bank Financial Institution (NBFI):** It is a financial institution that does not have a full banking license or is not supervised by the central bank.
- **Central Bank:** It is an apex institution that manages a state's currency, money supply, and interest rates. Central banks also usually oversee the commercial banking system.
- **Bank Rate:** It is the rate at which the Central Bank of a country is prepared to re-discount the first class securities.
- **Statutory Liquidity Ratio (SLR):** It is the amount which a bank has to maintain in the form of cash, gold or approved securities.
- **Cash Reserve Ratio (CRR):** Banks are required to hold a certain proportion of their deposits in the form of cash with RBI. This is known as CRR.
- **Monetary Policy:** It is the macro-economic policy laid down by the Central Bank towards the management of money supply and interest rate.
- **Capital Market:** It is a financial market in which long-term debt or equity backed securities are bought and sold.
- **Demonetisation:** It is the act of stripping a currency unit of its status as legal tender. It occurs whenever there is a change of national currency.

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MODEL QUESTIONS

XL8OQ

Part – A

Multiple choice questions

1. A Bank is a

    a) Financial institution
    b) Corporate
    c) An Industry
    d) Service institutions

2. A Commercial Bank is an institution that provides services

    a) Accepting deposits
    b) Providing loans
    c) Both a and b
    d) None of the above

3. The Functions of commercial banks are broadly classified into

    a) Primary Functions
    b) Secondary functions
    c) Other functions
    d) a, b, and c

4. Bank credit refers to

    a) Bank Loans
    b) Advances
    c) Bank loans and advances
    d) Borrowings

5. Credit creation means.

    a) Multiplication of loans and advances
    b) Revenue
    c) Expenditure
    d) Debt

6. NBFI does not have.

    a) Banking license
    b) government approval
    c) Money market approval
    d) Finance ministry approval

7. Central bank is ---------- authority of any country.

    a) Monetary
    b) Fiscal
    c) Wage
    d) National Income

8. Who will act as the banker to the Government of India?

    a) SBI
    b) NABARD
    c) ICICI
    d) RBI

9. Lender of the last resort is one of the functions of.

    a) Central Bank
    b) Commercial banks
    c) Land Development Banks
    d) Co-operative banks

10. Bank Rate means.

    a) Re-discounting the first class securities
    b) Interest rate
    c) Exchange rate
    d) Growth rate

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11. Repo Rate means the

a) Rate at which the Commercial Banks are willing to lend to RBI

b) Rate at which the RBI is willing to lend to commercial banks

c) Exchange rate of the foreign bank

d) Growth rate of the economy

12. Moral suasion refers.

a) Optimization
b) Maximization
c) Persuasion
d) Minimization

13. ARDC started functioning from

a) June 3, 1963
b) July 3, 1963
c) June 1, 1963
d) July 1, 1963

14. NABARD was set up in.

a) July 1962
b) July 1972
c) July 1982
d) July 1992

15. EXIM bank was established in.

a) June 1982
b) April 1982
c) May 1982
d) March 1982

16. The State Financial Corporation Act was passed by

a) Government of India
b) Government of Tamilnadu
c) Government of Union Territories
d) Local Government.

17. Monetary policy is formulated by.

a) Co-operative banks
b)Commercial banks
c) Central Bank
d) Foreign banks

18. Online Banking is also known as.

a) E-Banking
b) Internet Banking
c) RTGS
d) NEFT

19. Expansions of ATM.

a) Automated Teller Machine
b) Adjustment Teller Machine
c) Automatic Teller mechanism
d) Any Time Money

20. 2016 Demonetization of currency includes denominations of

a) ₹500 and ₹1000

b) ₹1000 and ₹2000

c) ₹200 and ₹500

d) All the above

Answers

1	2	3	4	5	6	7	8	9	10
a	c	d	c	a	a	a	d	a	a
11	12	13	14	15	16	17	18	19	20
b	c	d	c	d	a	c	b	a	a

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Part - B

Answer the following questions in one or two sentences

21. Define Commercial banks.
22. What is credit creation?
23. Define Central bank.
24. Distinguish between CRR and SLR.
25. Write the meaning of Open market operations
26. What is rationing of credit?
27. Mention the functions of agriculture credit department.

Part - C

Answer the following questions in about a paragraph

28. Write the mechanism of credit creation by commercial banks.
29. Give a brief note on NBFI.
30. Bring out the methods of credit control.
31. What are the functions of NABARD?
32. Specify the functions of IFCI.
33. Distinguish between money market and capital market.
34. Mention the objectives of demonetizations.

Part - D

Answer the following questions in one page

35. Explain the role of Commercial Banks in economic development.
36. Elucidate the functions of Commercial Banks.
37. Describe the functions of Reserve Bank of India.
38. What are the objectives of Monetary Policy? Explain.

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ACTIVITY

1. Students are to be asked to visit the nearby commercial bank to observe the functioning of the bank. They are also instructed to submit a brief report about their learning experiences.
2. Students are asked to do a brief survey about impact of 2016 Demonetisation of currency on the general public.

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CHAPTER

7

International Economics

"Economies are linked internationally through trade in goods and through financial markets".

- Dornbusch, Fischer and Startz

Learning Objectives

1. To explain the importance of international trade and different theories of international trade.
2. To provide an understanding about the exchange rate determination, variation in exchange rate and Balance of Payments.
3. To provide an insight into FDI and Trade.

7.1 Introduction

The subject 'International Economics' evolved from a simple theory of international trade was formulated to answer a few basic questions. The subject first originated in Western Europe on account of increasing importance of foreign trade in that part of the world. The contributions of classical economists like Adam Smith, David Ricardo, F.W. Taussig, Haberler, J.S.Mill and Bela Balassa shaped the subject matter of International Economics.



Haberler

International Economics studies the entire range of international economic transactions that consist of not only trade in goods and services but also capital flows, technology transfer, the rate of exchange, balance of payments, and issues relating to tariffs, protection, free trade, investment flows, role of fiscal and monetary policies pursued by individual countries.

7.2 Meaning of International Economics

International Economics is that branch of economics which is concerned with the exchange of goods and services between two or more countries. Hence the subject matter is mainly related to foreign trade.

In other words, International Economics is a specialized field of Economics which deals with the economic interdependence among countries and studies the effects of such interdependence and the factors that affect it.

7.3 Subject Matter of International Economics

The subject matter of International Economics includes large number of segments which are classified into the following parts.

1. Pure Theory of Trade

This component explains the causes for foreign trade, composition, direction and volume of trade, determination of the terms of trade and exchange rate, issues related to balance of trade and balance of payments.

2. Policy Issues

Under this part, policy issues such as free trade vs. protection, methods of regulating trade, capital and technology flows, use of taxation, subsidies and dumping, exchange control and convertibility, foreign aid, external borrowings and foreign direct investment, measures of correcting disequilibrium in the balance of payments etc are covered.

3. International Cartels and Trade Blocs

This part deals with the economic integration in the form of international cartels, customs unions, monetary unions, trade blocs, economic unions and the like. It also discusses the operation of Multi National Corporations (MNCs).

4. International Financial and Trade Regulatory Institutions

The financial institutions like International Monetary Fund IMF, IBRD, WTO etc which influence international economic transactions and relations shall also be the part of international economics.

7.4 Meaning of Trade

Trade is one of the powerful forces of economic integration. The term 'trade' means exchange of goods, wares or merchandise among people.

Trade is of two types. They are:

a) Internal Trade and
b) International Trade.



7.4.1 Internal Trade

It refers to the exchange of goods and services within the political and geographical boundaries of a nation. It is a trade within a country. This is also known as 'domestic trade' or 'home trade' or 'intra-regional trade'.

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7.4.2 International Trade

It refers to the trade or exchange of goods and services between two or more countries. In other words, it is a trade among different countries or trade across political boundaries. It is also called as 'external trade' or 'foreign trade' or 'inter-regional trade'.

7.4.3 Differences between 'Internal Trade' and 'International Trade'

Sl.No.	Internal Trade	International Trade
1.	Trade takes place between different individuals and firms within the same nation.	Trade takes place between different individuals and firms in different countries.
2.	Labour and capital move freely from one region to another.	Labour and capital do not move easily from one nation to another.
3.	There will be free flow of goods and services since there are no restrictions.	Goods and services do not easily move from one country to another since there are a number of restrictions like tariff and quota.
4.	There is only one common currency.	There are different currencies.
5.	The physical and geographical conditions of a country are more or less similar.	There are differences in physical and geographical conditions of the two countries.
6.	Trade and financial regulations are more or less the same.	Trade and financial regulations such as interest rate, trade laws differ between countries.
7.	There is no difference in political affiliations, customs and habits of the people and government policies.	Differences are pronounced in political affiliations, habits and customs of the people and government policies.

7.5 Theories of International Trade



7.5.1 The Classical Theory of International Trade

Introduction

Adam Smith (1776) developed the theory of absolute cost advantage. But it was David Ricardo who formulated as an explicit and precise theory, namely, the theory of comparative cost advantage, which was later improved and refined by the economists like J.S Mill, Cairnes, Bastable,Taussig and Haberler. We shall first discuss the Adam Smith's theory of absolute cost advantage.

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Classical Trade Theories

Mercantilism (pre - 16th century)

- Takes an us-versus - them view of trade
- Other country's gain is our country's loss

Free Trade theories

- Absolute Advantage (Adam Smith, 1776)
- Comparative Advantage (David Ricardo, 1817)
- Specialization of production and free flow of goods benefit all trading partner's economies

Free Trade refined

- Factor - proporations (Heckscher - Ohlin, 1919)
- International Product life cycle (Ray Vernon, 1966)

7.5.2. Adam Smith's Theory of Absolute Cost Advantage

Adam Smith argued that all nations can be benefitted when there is free trade and specialisation in terms of their absolute cost advantage.

The Theory

According to Adam Smith, the basis of international trade was absolute cost advantage. Trade between two countries would be mutually beneficial when one country produces a commodity at an absolute cost advantage over the other country which in turn produces another commodity at an absolute cost advantage over the first country.

Assumptions

1. There are two countries and two commodities (2 x 2 model).
2. Labour is the only factor of production.
3. Labour units are homogeneous.
4. The cost or price of a commodity is measured by the amount of labour required to produce it.
5. There is no transport cost.

Illustration

Absolute cost advantage theory can be illustrated with the help of the following example.

Absolute Cost Advantage

Country	India	China
	(Output per unit of labour)	
Wheat	20	8
Cloth	6	14

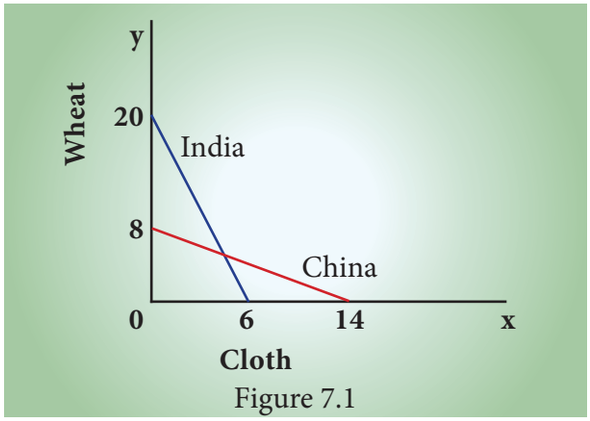


Figure 7.1

From the illustration, it is clear that India has an absolute advantage in the production of wheat over China and China has an absolute advantage in the production of cloth over India. Therefore, India should specialize in the production of wheat and import cloth from China. China should specialize in the production

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of cloth and import wheat from India. This kind of trade would be mutually beneficial to both India and China.

7.5.3. Ricardo's Theory of Comparative Cost Advantage

David Ricardo , the British economist in his 'Principles of Political Economy and Taxation' published in 1817, formulated a systematic theory called 'Comparative Cost Theory'. Later it was refined by J.S Mill, Marshall, Taussig and others.

Ricardo demonstrates that the basis of trade is the comparative cost difference. In other words, trade can take place even if the absolute cost difference is absent but there is comparative cost difference.

According to Ricardo, a country can gain from trade when it produces at relatively lower costs. Even when a country enjoys absolute advantage in both goods, the country would specialize in the production and export of those goods which are relatively more advantageous. Similarly, even when a country has absolute disadvantage in production of both goods, the country would specialize in production and export of the commodity in which it is relatively less disadvantageous.

Assumptions

1. There are only two nations and two commodities (2x2 model)
2. Labour is the only element of cost of production.
3. All labourers are of equal efficiency.
4. Labour is perfectly mobile within the country but perfectly immobile between countries.
5. Production is subject to the law of constant returns.
6. Foreign trade is free from all barriers.
7. No change in technology.
8. No transport cost.
9. Perfect competition.
10. Full employment.
11. No government intervention.

Illustration

Ricardo's theory of comparative cost can be explained with a hypothetical example of production costs of cloth and wheat in America and India.

Comparative Cost Advantage

(Units of labour required to produce one unit)

Country	Cloth	Wheat	Domestic Exchange Ratios
America	100	120	1 wheat =1.2 cloth
India	90	80	1 wheat=0.88 cloth

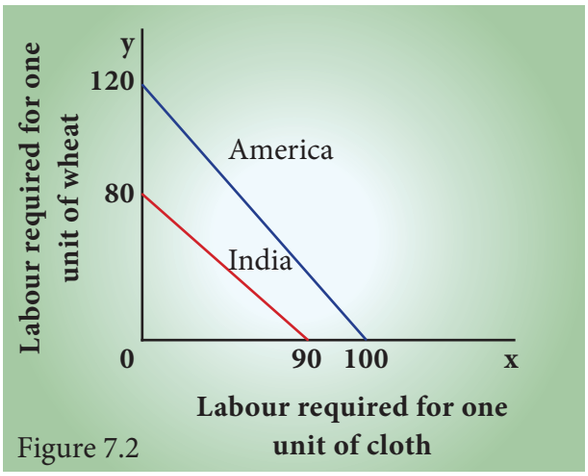


Figure 7.2

Note: Slopes are not equal

It is evident from the example that India has an absolute advantage in production of both cloth and wheat.

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However, India should concentrate on the production of wheat in which she enjoys a comparative cost advantage. (80/120 < 90/100). For America the comparative cost disadvantage is lesser in cloth production. Hence America will specialize in the production of cloth and export it to India in exchange for wheat. (Any exchange ratio between 0.88 units and 1.2 units of cloth against one unit of wheat represents gain for both the nations). With trade, India can get 1 unit of cloth and 1 unit of wheat by using its 160 labour units. In the absence of trade, for getting this benefit, India will have to use 170 units of labour. America also gains from this trade. With trade, America can get 1 unit of cloth and one unit of wheat by using its 200 units of labour. Otherwise, America will have to use 220 units of labour for getting 1 unit of cloth and 1 unit of wheat.

Criticisms

1. Labour cost is a small portion of the total cost. Hence, theory based on labour cost is unrealistic.
2. Labourers in different countries are not equal in efficiency.

7.5.4. Modern Theory of International Trade

Introduction

The modern theory of international trade was developed by Swedish economist Eli Heckscher and his student Bertil Ohlin in 1919. This model was based on the Ricardian theory of international trade. This theory says that the basis for international trade is the difference in factor endowments. It is otherwise called as '**Factor Endowment Theory'.**

Factor endowment model

- Developed by Heckscher and Ohlin
- Countries with a relative factor abundance can specialise and trade
  - Abundance of skilled labour → specialisation → export → exchange for goods are services produced by countries with abundance of unskilled labour
  - **Exports** embody the **abundant factor**
  - **Imports** embody the **scarce factor**
  - Assumes a high degree of **factor mobility**

The Theory

The classical theory argued that the basis for foreign trade was comparative cost difference and it considered only labour factor. But the modern theory of international trade explains the causes for such comparative cost difference. This theory attributes international differences in comparative costs to:

i) difference in the endowments of factors of production between countries, and

ii) differences in the factor proportions required in production.

Assumptions

1. There are two countries, two commodities and two factors. (2x2x2 model)

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2. Countries differ in factor endowments.
3. Commodities are categorized in terms of factor intensity.
4. Countries use same production technology.
5. Countries have identical demand conditions.
6. There is perfect competition in both product and factor markets in both the countries.

Heckscher - Ohlin (H-O) theorem

(H-O theorem)

"A capital abundant country will export the capital - intensive good, while the labor - abundant country will export the labor - intensive good."

Factor

Factor proportions model which links exports and imports to factor endowments.

Exports

A country exports those commodities produced with relatively large quantities of the country's relatively abundant factor.

Explanation

According to Heckscher - Ohlin, "a capital-abundant country will export the capital –intensive goods, while the labour-abundant country will export the labour-intensive goods". A factor is regarded abundant or scare in relation to the quantum of other factors. A country can be regarded as richly endowed with capital only if the ratio of capital to other factors is higher than other countries.

Illustration

Particulars	India	America
Supply of Labour	50	24
Supply of Capital	40	30
Capital-Labour Ratio	40/50 = 0.8	30/24 = 1.25

In the above example, even though India has more capital in absolute terms, America is more richly endowed with capital because the ratio of capital in India is 0.8 which is less than that in America where it is 1.25. The following diagram illustrates the pattern of word trade.



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Limitations

1. Factor endowment of a country may change over time.

2. The efficiency of the same factor (say labour) may differ in the two countries. For example, America may be labour scarce in terms of number of workers. But in terms of efficiency, the total labour may be larger.

7.5.5 Comparison of Classical Theory and Modern Theory

S.No	Classical Theory of International Trade	Modern Theory of International Trade
1.	The classical theory explains the phenomenon of international trade on the basis of labour theory of value.	The modern theory explains the phenomenon of international trade on the basis of general theory of value.
2.	It presents a one factor (labour) model	It presents a multi - factor (labour and capital) model.
3.	It attributes the differences in the comparative costs to differences in the productive efficiency of workers in the two countries.	It attributes the differences in comparative costs to the differences in factor endowments in the two countries.

7.6 Gains from International Trade

International trade helps a country to export its surplus goods to other countries and secure a better market for it. Similarly, international trade helps a country to import the goods which cannot be produced at all or can be produced at a higher cost. The gains from international trade may be categorized under four heads.

I. Efficient Production

International trade enables each participatory country to specialize in the production of goods in which it has absolute or comparative advantages. International specialization offers the following gains.

1. Better utilization of resources.
2. Concentration in the production of goods in which it has a comparative advantage.
3. Saving in time.
4. Perfection of skills in production.
5. Improvement in the techniques of production.
6. Increased production.
7. Higher standard of living in the trading countries.

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II. Equalization of Prices between Countries

International trade may help to equalize prices in all the trading countries.

1. Prices of goods are equalized between the countries (However, in reality it has not happened).
2. The difference is only with regard to the cost of transportation.
3. Prices of factors of production are also equalized (However, in reality it has not happened).

III. Equitable Distribution of Scarce Materials

International trade may help the trading countries to have equitable distribution of scarce resources.

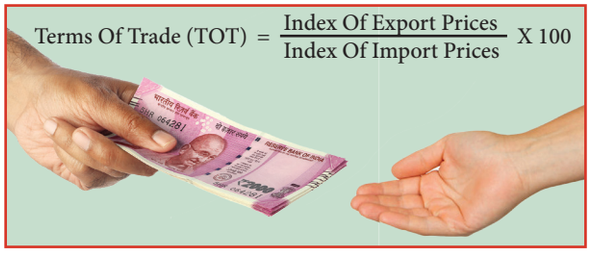
IV. General Advantages of International Trade

1. Availability of variety of goods for consumption.
2. Generation of more employment opportunities.
3. Industrialization of backward nations.
4. Improvement in relationship among countries (However, in reality it has not happened).
5. Division of labour and specialisation.

6.Expansion in transport facilities.

7.7 Terms of Trade

The gains from international trade depend upon the terms of trade which refers to the ratio of export prices to import prices.



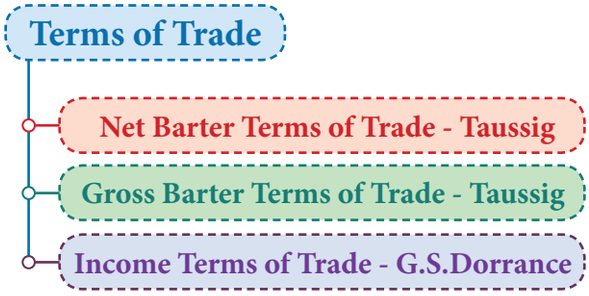
7.7.1 Meaning

It is the rate at which the goods of one country are exchanged for goods of another country. It is expressed as the relation between export prices and import prices. Terms of trade improves when average price of exports is higher than average price of imports.

7.7.2 Types of Terms of Trade

The different concepts of terms of trade were classified by Gerald M.Meier into the following three categories:

Terms of Trade related to the Ratio of Exchange between Commodities



1. Net Barter Terms of Trade

This type was developed by Taussig in 1927.The ratio between the prices of exports and of imports is called the "net barter terms of trade'. It is named by Viner as the 'commodity terms of trade'.

It is expressed as:

$$T_n = (P_x / P_m) \times 100$$

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Where,

T_n = Net Barter Terms of Trade
P_x = Index number of export prices
P_m = Index number of import prices

This is used to measure the gain from international trade. If 'Tn' is greater than 100, then it is a favourable terms of trade which will mean that for a rupee of export, more of imports can be received by a country.

2 Gross Barter Terms of Trade

This was developed by Taussig in 1927 as an improvement over the net terms of trade. It is an index of relationship between total physical quantity of imports and the total physical quantity of exports.

$$T_g = (Q_x/Q_m) \times 100$$

Where, Q_m = Index of import quantities
Q_x = Index of export quantities

If for a given quantity of export, more quantity of import can be consumed by a country, then one can say that terms of trade are favourable.

3 Income Terms of Trade

The income terms of trade was given by G.S.Dorrance in 1948. It is the index of the value of exports divided by the price index for imports multiplied by quantity index of exports. In other words, it is the net barter terms of trade of a country multiplied by its exports-volume index.

$$T_y = (P_x / P_m)Q_x$$

Where, P_x = Price index of exports
P_m = Price index of imports
Q_x = Quantity index of exports

7.7.3. Terms of Trade related to the Interchange between Productive Resources

1 The Single Factoral Terms of Trade

Viner has devised another concept called "the single factoral terms of trade" as an improvement upon the commodity terms of trade. It represents the ratio of export-price index to the import-price index adjusted for changes in the productivity of a country's factors in the production of exports. Symbolically, it can be stated as

$$T_f = (P_x / P_m) F_x$$

Where, T_f stands for single factoral terms of trade index. F_x stands for productivity in exports (which is measured as the index of cost in terms of quantity of factors of production used per unit of export).

2 Double Factoral Terms of Trade

Viner constructed another index called "Double factoral terms of Trade". It is expressed as

$$T_{ff} = (P_x / P_m) \ (F_x / F_m)$$

which takes into account the productivity in country's exports, as well as the productivity of foreign factors.

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Here, F_m represents import index (which is measured as the index of cost in terms of quantity of factors of production employed per unit of imports).

7.8 Balance of Trade Vs Balance of Payments

Balance of Trade and Balance of Payments are two different concepts in the subject of international trade.

7.8.1 Balance of Trade (BOT)

Balance of Trade (BOT) refers to the total value of a country's exports of commodities and total value of imports of commodities. Only export and import of commodities are included in the statement of Balance of Trade of a country. Movements of goods (export and imports of commodities) are also known as **'visible trade',** because the movement of commodities between countries can be seen by eyes and felt by hands and can be verified physically by customs authorities of a country.



Favourable BOT

When the total value of commodity exports of a country exceeds the total value of commodity imports of that country, it is said that the country has a **'favourable'** balance of trade.

Unfavourable BOT

If total value of commodity exports of a country is less than the total value of commodity imports of that country, that country is said to have an **'unfavourable'** balance of trade.

7.8.2 Balance of Payments (BOP)

BoP is a systematic record of a country's economic and financial transactions with the rest of the world over a period of time.



When a payment is received from a foreign country, it is a credit transaction while a payment to a foreign country is a debit transaction. The principal items shown on the **credit side** are exports of goods and services, transfer receipts in the form of gift etc., from foreigners, borrowing from abroad, foreign direct investment and official sale of reserve

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assets including gold to foreign countries and international agencies.

The principal items on the **debit side** include imports of goods and services, transfer payments to foreigners, lending to foreign countries, investments by residents in foreign countries and official purchase of reserve assets or gold from foreign countries and international agencies.

7.8.3. Components of BOPs

The credit and debit items are shown vertically in the BOP account of a country. Horizontally, they are divided into three categories, i.e.

a) The current account,

b) The capital account and

c) The official settlements account or official reserve assets account.

a) The Current Account: It includes all international trade transactions of goods and services, international service transactions (i.e. tourism, transportation and royalty fees) and international unilateral transfers (i.e. gifts and foreign aid).

b) The Capital Account: Financial transactions consisting of direct investment and purchases of interest-bearing financial instruments, non-interest bearing demand deposits and gold fall under the capital account.

c) The Official Reserve Assets Account: Official reserve transactions consist of movements of international reserves by governments and official agencies to accommodate imbalances arising from the current and capital accounts.

The official reserve assets of a country include its gold stock, holdings of its convertible foreign currencies and Special Drawing Rights (SDRs) and its net position in the International Monetary Fund (IMF).

Balance of Payment (BOP) Account Chart

Credit (Receipts) – Debit **(Payments)** = Balance [**Deficit (-) , Surplus (+)**]

Deficit if Debit > Credit

7.8.4. Balance of Payments Disequilibrium

The BoP is said to be balanced when the receipts (R) and payments (P) are just equal, i.e,

R / P =1.

B.O.P DISEQUILIBRIUM

Occurs when:

Demand ≠ Supply

Debit > Credit → Deficit



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Favourable BoP

When receipts exceed payments, the BoP is said to be favourable. That is,

R / P > 1.

Unfavourable BOP

When receipts are less than payments, the BoP is said to be unfavourable or adverse.That is

R / P < 1.

7.8.5. Types BOP Disequilibrium:

There are three main types of BOP Disequilibrium, which are discussed below.

(a) Cyclical Disequilibrium,
(b) Secular Disequilibrium,
(c) Structural Disequilibrium.

a) Cyclical Disequilibrium: Cyclical disequilibrium occurs because of two reasons. First, two countries may be passing through different phases of business cycle. Secondly, the elasticities of demand may differ between countries.

b) Secular Disequilibrium: The secular or long-run disequilibrium in BOP occurs because of long-run and deep seated changes in an economy as it advances from one stage of growth to another. In the initial stages of development, domestic investment exceeds domestic savings and imports exceed exports, as it happens in India since 1951.

c) Structural Disequilibrium: Structural changes in the economy may also cause balance of payments disequilibrium. Such structural changes include development of alternative sources of supply, development of better substitutes, exhaustion of productive resources or changes in transport routes and costs.

7.8.6. Causes for BoP Disequilibrium

The following are the major causes producing disequilibrium in the balance of payments of a country.

1. **Cyclical Fluctuation:** Cyclical disequilibrium in different countries is caused by their cyclical fluctuations, their phases and magnitude. World trade shrinks during depression while trade flourishes during prosperity

2. **Structural Changes:** Structural disequilibrium is caused by the structural changes brought by huge development and investment programmes in the developing economies. Such economies may have high propensity to import for want of capital for rapid industrialization, while export may not be boosted up to that extent.

3. **Development Expenditure:** Development disequilibrium is caused by rapid economic development which results in income and price effects. The less developed countries in the early stage of development are not self sufficient. Income, savings and investment are abysmally low. They depend upon developed countries for import of commodities, capital and technology. Export potential is low and import intensity is high. So the LDCs suffer from adverse BoP.

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4. **Consumerism:** Balance of payments position of a country is adversely affected by a huge increase in consumption. This increases the need for imports and decreases the capacity to export.

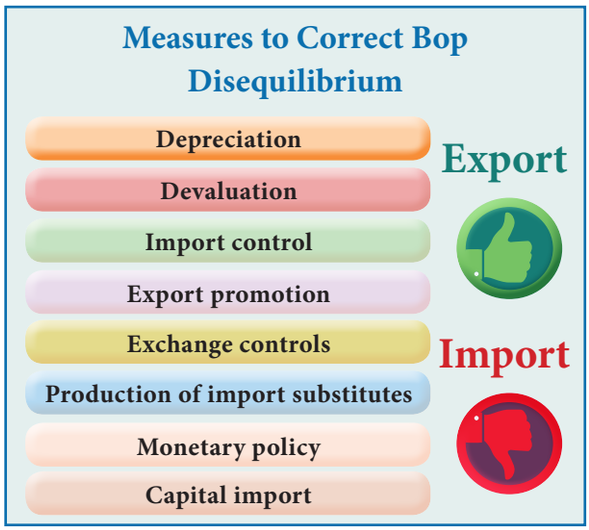
5. **Demonstration Effect:** Deficit in the balance of payments of developing countries is also caused by demonstration effect which influences the people in UDCs to imitate western styled goods. This will raise the propensity to import causing adverse balance of payments. This is good for the developed countries.

6. **Borrowing:** International borrowing and investment may cause a deficit in the balance of payments. When the international borrowing is heavy, a country's balance of payments will be adverse since it repays loans with interest. Servicing of debt is a huge burden. That is why the UDCs are forced to borrow more.

7. **Technological Backwardness:** Due to technological backwardness, the people (Indians) are unable to use the energy (Solar) available with them. As a result they import huge petroleum products from foreign countries, increasing the trade deficit.

8. **Global Politics:** The rich countries (Eg. USA) need to sell their weapons to promote their economy and generate employment. Hence, wars between countries (for example Iran and Iraq, Pakistan and India) are stimulated In order to win the wars, the poor countries are forced to buy the weapons from weapon – rich countries, using their export earnings and creating trade deficit. Thus UDCs are trapped forever.

7.8.7. Measures to Correct BOP Disequilibrium



There are a number of measures available for correcting the balance of payments disequilibrium. They are divided into two broad groups, namely, (i) automatic correction and (ii) deliberate measures.

I. Automatic Correction

If the market forces of demand and supply are allowed to play freely, equilibrium will be automatically restored in course of time. Under the free exchange rate system, the automatic adjustments of the balance of payments can take place through changes in the variables like price, interest, income and capital flows.

1. Price Adjustments

As a result of foreign exchange outflow from a deficit country to a surplus country, there will be a fall in the money supply in the deficit country and increase in the money supply in the surplus country. This will result in rise in the price in the

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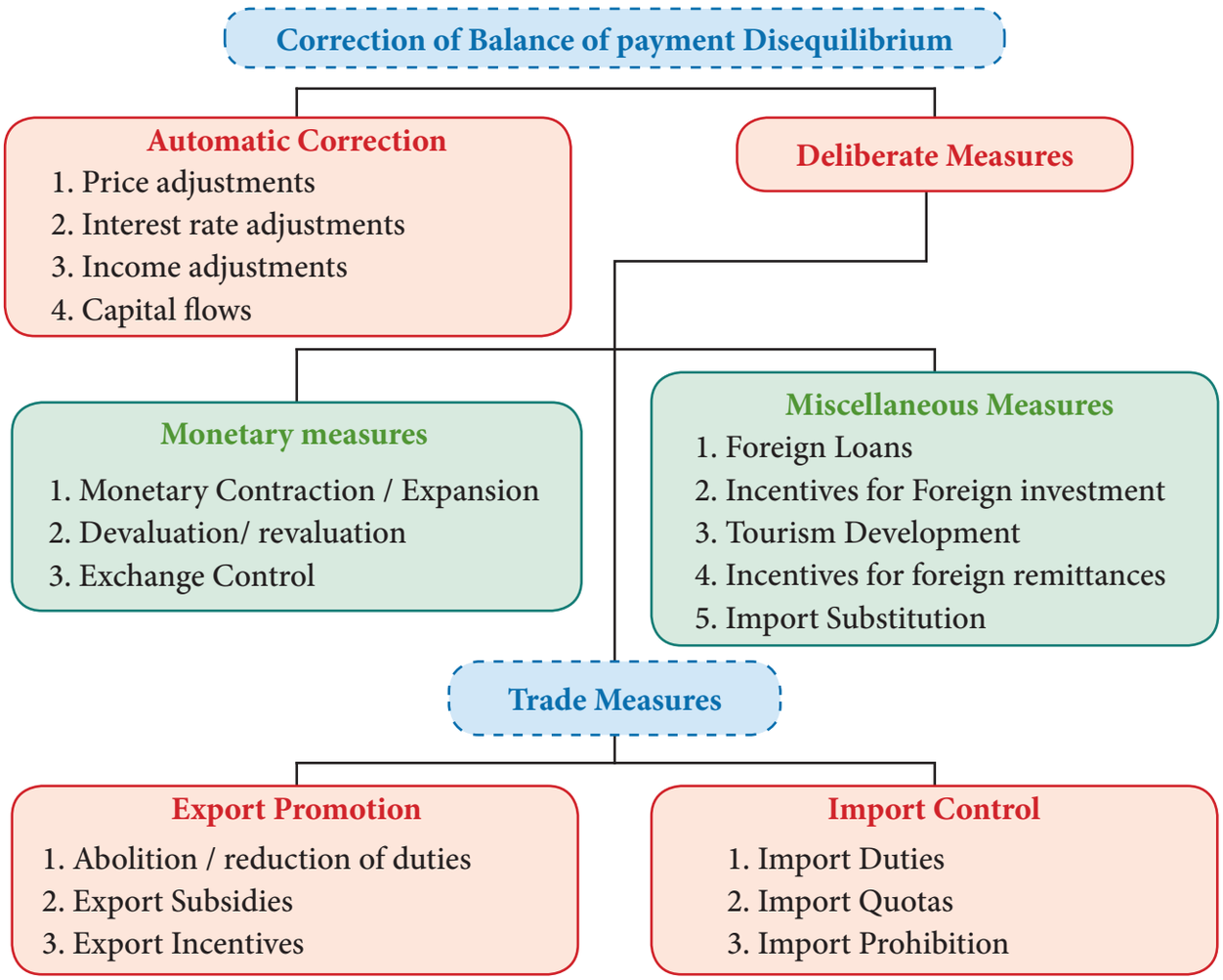
surplus country which will encourage imports and discourage exports. Fall in prices in the deficit country will encourage exports and discourage imports, leading to restoration of BoP equilibrium.

2. Interest Rate Adjustments

The contraction or expansion of money supply resulting from the BoP deficit or surplus leads to a rise or fall in the interest rates. A rise in interest rate in the deficit country will encourage investors to withdraw their funds from abroad and invest in their home country. The opposite happens in the surplus country.

3. Income Adjustments

A nation with payments surplus will experience rising income which will increase imports and thereafter equilibrium is restored in Balance of Payments.



4. Capital Flows

Changes in the interest rate consequent to the BoP disequilibrium will encourage capital flows from the surplus nations to deficit nations helping restoration of the BoP equilibrium.

II. Deliberate Measures

The deliberate measures may be broadly grouped into (a) monetary measures (b) trade measures and (c) miscellaneous measures.

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a. Monetary Measures

1. Monetary Contraction

High domestic price level is responsible for high imports and low exports. In order to control inflation, the central monetary authority controls credit. As a result, the prices come down and exports increase. This will help to correct adverse BoP. However, if credit is controlled, investment will decline, production will go down, prices will increase. This is the cause of confusion between government and RBI in India in 2010s.

2. Devaluation

Devaluation means deliberate reduction of the official rate at which domestic currency is exchanged for another currency. In other words, devaluation refers to a reduction in the external value of a currency in terms of other currencies. For instance, instead of 70 ₹ per US$, making ₹ 80 per US$.

Devaluation of Indian Currency

Indian rupee was devalued three times since 1947.

1. On 29th September, 1949.
2. On 6th June, 1966
3. On 1st July, 1991



A country with fundamental disequilibrium in the balance of payments may devalue its currency in order to stimulate its exports and discourage imports to correct the disequilibrium. Devaluation makes exports cheaper and imports dearer. That means making Indian good cheaper for foreigners, and foreign goods costlier for Indians.

3. Exchange Control

Exchange control means the state intervention in the forex market. It is a popular method employed to influence the balance of payments position of a country. Under exchange control, the government or central bank assumes complete control over the foreign exchange reserves and earning of the country. The recipients of foreign exchange, like exporters, are required to surrender foreign exchange to the government / central bank in exchange for domestic currency. By virtue of its control over the use of foreign exchange, the government can control imports. Does it happen in India? Too much of imports control would invite more and more smuggled goods. Smuggling of gold into Indian airports regularly happens, as per the reports in the media.

III. Trade Measures

Trade measures include measures to promote exports and to reduce imports.

1. Export Promotion

Exports may be encouraged by i).reducing or abolishing export duties, ii). providing export subsidy, iii).encouraging export production by giving monetary, fiscal, physical and institutional incentives. (Then local people and domestic industries would suffer)

2. Import Control

Imports may be controlled by i).imposing or enhancing import duties, ii).restricting imports through import quotas, iii).licensing and even prohibiting altogether the import of certain non-

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essential items. But this would encourage smuggling.

IV. Miscellaneous Measures

In addition to the measures mentioned above, there are a number of other measures that can help make the balance of payments position more favourable, like i). foreign loans, ii).encouraging foreign investment in the home country, iii).development of tourism to attract foreign tourists, iv).providing incentives to enhance inward remittances and v). import substitution.

7.9 Exchange Rate

7.9.1 Meaning of Foreign Exchange (FOREX)

FOREX refers to foreign currencies. The mechanism through which payments are effected between two countries having different currency systems is called FOREX system . It covers methods of payment, rules and regulations of payment and the institutions facilitating such payments.

7.9.2 Definition of FOREX

"FOREX is the system or process of converting one national currency into another, and of transferring money from one country to another".

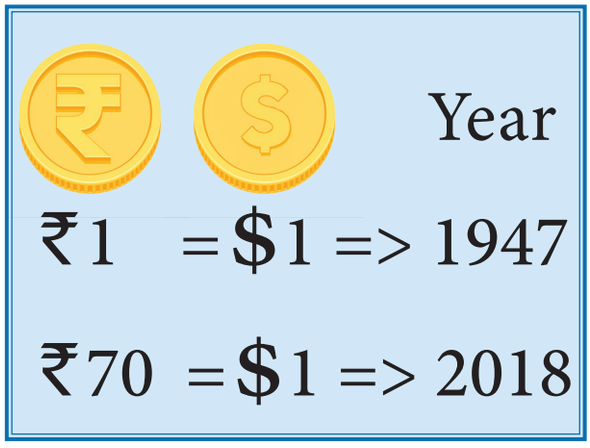
7.9.3 Rate of Exchange

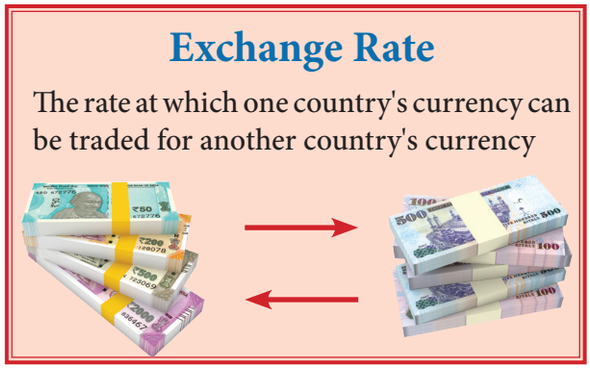
The transactions in the exchange market are carried out at exchange rates. It is the external value of domestic currency. Thus, exchange rate may be defined as the price paid in the home currency (say ₹ 75) for a unit of foreign currency (say 1 US $). It can be quoted in two ways:

1. One unit of foreign money (1 USD) to so many units of the domestic currency (₹); or
2. A certain number of units of foreign currency (USD)to one unit of domestic money (₹ 1)

For instance:

1 U.S Dollar = ₹ 70 , or
₹ 1 = U.S.1.42 cents





7.9.4. Definition of Equilibrium Exchange Rate

"The equilibrium exchange rate is that rate, which over a certain period of time, keeps the balance of payments in equilibrium".

- Ragner Nurkse

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7.9.5. Determination of Equilibrium Exchange Rate

The equilibrium rate of exchange is determined in the foreign exchange market in accordance with the general theory of value, i.e., by the interaction of the forces of demand and supply. Thus, the rate of exchange is determined at the point where demand for forex is equal to the supply of forex.

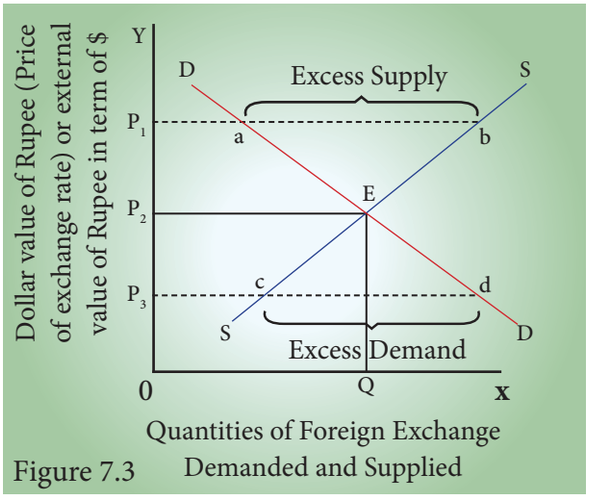


Figure 7.3

In the above diagram, Y axis represents exchange rate, that is, value of rupee in terms of dollars. X axis represents demand and supply of forex. E is the point of equilibrium where DD intersects SS. The exchange rate is P_2.

7.9.6. Types of Exchange Rate Systems

Broadly, there are two major exchange rate systems, namely, (1) fixed (or pegged) exchange rate system and (2) flexible (or floating) exchange rate system. Managed Floating Exchange Rate system also prevails in some countries (like India).

1. Fixed Exchange Rates

Countries following the fixed exchange rate (also known as stable exchange rate and pegged exchange rate) system agree to keep their currencies at a fixed rate as determined by the Government. Under the gold standard, the value of currencies was fixed in terms of gold.

2. Flexible Exchange Rates

Under the flexible exchange rate (also known as floating exchange rate) system, exchange rates are freely determined in an open market by market forces of demand and supply.

7.9.7. Types of Exchange Rates

Exchange rates are also in the form of (a) Nominal exchange rate (b) Real exchange rate (c) Nominal Effective Exchange Rate (NEER) and (d) Real Effective Exchange Rate (REER)

If 1 US Dollar = ₹ 75,

Nominal exchange rate = 75/1 = 75.

This is the bilateral nominal exchange rate.

$$\text{Real Exchange rate} = \frac{eP_f}{P}$$

P = Price levels in India

P_f = Price levels abroad (say US)

e = nominal exchange rate.

If a pen costs ₹ 50 in India and it costs 5 USD in the US,

$$\text{Real Exchange Rate} = \frac{75x5}{50} = 7.5$$

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If real exchange rate is equal to 1, the currencies are at purchasing power parity.

It the price of the pen in US is 0.66 USD,

then the real exchange rate = $\frac{0.66 \times 75}{50}$ ₹

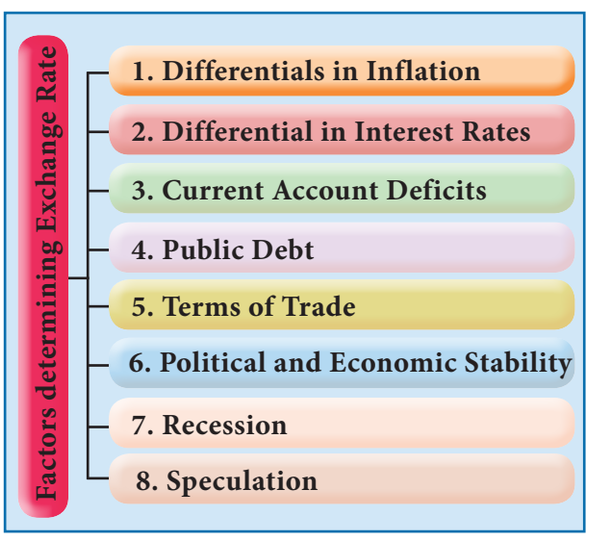
then it could be said that the USD and Indian rupee are at purchasing power parity.

NEER and REER are not explained here.

Interested students and teachers can search for them.

7.9.8. Determinants of Exchange Rates

Exchange rates are determined by numerous factors and they are related to the trading relationship between two countries.



1. Differentials in Inflation

Inflation and exchange rates are inversely related. A country with a consistently lower inflation rate exhibits a rising currency value, as its purchasing power increases relative to other currencies.

2. Differentials in Interest Rates

There is a high degree of correlation between interest rates, inflation and exchange rates. Central banks can influence over both inflation and exchange rates by manipulating interest rates. Higher interest rates attract foreign capital and cause the exchange rate to rise and vice versa.

3. Current Account Deficits

A deficit in the current account implies excess of payments over receipts. The country resorts to borrowing capital from foreign sources to make up the deficit. Excess demand for foreign currency lowers a country's exchange rate.

4. Public Debt

Large public debts are driving out foreign investors, because it leads to inflation. As a result, exchange rate will be lower.

5. Terms of Trade

A country's terms of trade also determines the exchange rate. If the price of a country's exports rises by a greater rate than that of its imports, its terms of trade will improve. Favorable terms of trade imply greater demand for the country's exports and thus BoP becomes favorable.

6. Political and Economic Stability

If a nation's political climate is stable and economic performance is good, its currency value will be appreciated by attracting more foreign capital.

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7. Recession

Interest rates are low during the recession phase. This will decrease inflow of foreign capital. As a result, a currency will be depreciated against other currencies, thereby lowering the exchange rate.

8. Speculation

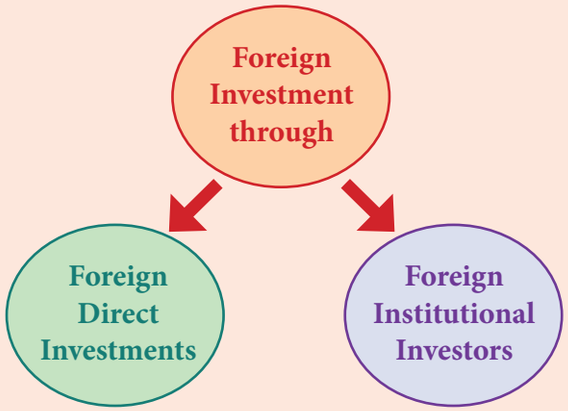
If a country's currency value is expected to rise, investors will demand more of that currency in order to make a profit in the near future. This results in appreciation of the exchange rate. Beside the above determinants, relative dominance in the global politics and the power to announce economic sanctions over other countries also determine exchange rates.

7.10 Foreign Direct Investment (FDI) and Trade

FDI is an important factor in global economy. Foreign trade and FDI are closely related. In developing countries like India, FDI in the natural resource sector, including plantations, increases trade volume. Foreign production by FDI is useful to substitute foreign trade. FDI is also influenced by the income generated from the trade and regional integration schemes.

FDI is helpful to accelerate the economic growth by facilitating essential imports needed for carrying out development programmes like capital goods, technical know-how, raw materials and other inputs and even scarce consumer goods.

An investment becomes foreign investment when..



Investment done by citizens and government of one country (home country) in industries of another country (host country).

When the export earnings of a country are not sufficient to finance for imports, FDI may be required to fill the trade gap.

FDI is encouraged by the factors such as foreign exchange shortage, desire to create employment and acceleration of the pace of economic development. Many developing countries strongly prefer foreign investment to imports. However, the real impact of FDI on different sections of an economy (say India) may differ. It could be a boon for some as well as bane for others. This may be discussed in the class – room. Large demand for USD, generated by IMF and World Bank policies (FUND – BANK POLICIES), help the USD to gain value continuously. This is one of the hidden agenda of Fund – Bank policies.

7.10.1 Meaning of FDI

FDI means an investment in a foreign country that involves some degree of

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control and participation in management. It corresponds to the investment made by a multinational enterprise in a foreign country. It is different from portfolio investment, which is primarily motivated by short term profit and it does not seek management control.

Foreign Portfolio Investment (FPI) means the entry of funds into a nation where foreigners deposit money in a nation's bank or make purchase in the stock and bond markets, sometimes for speculation. FPI is part of capital account of BoP.

7.10.2 Objectives of FDI

FDI has the following objectives.

1. Sales Expansion
2. Acquisition of resources
3. Diversification
4. Minimization of competitive risk.

Foreign Institutional Investment (FII) is an investment in hedge funds, insurance companies, pension funds and mutual funds. Foreign institutional investment is a common term in the financial sector of India. For example, a mutual fund in the United States can make investment in an India-based company.

7.10.3 Advantages of FDI

Foreign investment mostly takes the form of direct investment. Hence, we deal here with the foreign direct investment. The important advantages of foreign direct investment are the following:

1. FDI may help to increase the investment level and thereby the income and employment in the host country.
2. Direct foreign investment may facilitate transfer of technology to the recipient country.
3. FDI may also bring revenue to the government of the host country when it taxes profits of foreign firms or gets royalties from concession agreements.
4. A part of profit from direct foreign investment may be ploughed back into the expansion, modernization or development of related industries.
5. It may kindle a managerial revolution in the recipient country through professional management and sophisticated management techniques.
6. Foreign capital may enable the country to increase its exports and reduce import requirements. And thereby ease BoP disequilibrium.
7. Foreign investment may also help increase competition and break domestic monopolies.
8. If FDI adds more value to output in the recipient country than the return on capital from foreign investment, then the social returns are greater than the private returns on foreign investment.
9. By bringing capital and foreign exchange FDI may help in filling the savings gap and the foreign exchange gap in order to achieve the goal of national economic development.

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10. Foreign investments may stimulate domestic enterprise to invest in ancillary industries in collaboration with foreign enterprises.

11. Lastly, FDI flowing into a developing country may also encourage its entrepreneurs to invest in the other LDCs. Firms in India have started investing in Nepal, Uganda, Ethiopia and Kenya and other LDCs while they are still borrowing from abroad. Larger FDI to India comes from a small country (Mauritius).

7.10.4. Disadvantages of FDI

The following criticisms are levelled against foreign direct investment.

1. Private foreign capital tends to flow to the high profit areas rather than to the priority sectors.

2. The technologies brought in by the foreign investor may not be appropriate to the consumption needs, size of the domestic market, resource availabilities, stage of development of the economy, etc.

3. Foreign investment, sometimes, have unfavorable effect on the Balance of Payments of a country because when the drain of foreign exchange by way of royalty, dividend , etc. is more than the investment made by the foreign concerns.

4. Foreign capital sometimes interferes in the national politics.

5. Foreign investors sometimes engage in unfair and unethical trade practices.

6. Foreign investment in some cases leads to the destruction or weakening of small and medium enterprises.

7. Sometimes foreign investment can result in the dangerous situation of minimizing / eliminating competition and the creation of monopolies or oligopolistic structures.

8. `Often, there are several costs associated with encouraging foreign investment.

7.10.5. FDI in India

The early 1991 witnessed reforms in the economic policy. This helped to open up Indian markets to FDI. FDI in India has increased over the years. In India, FDI has been advantageous in terms of free flow of capital, improved technology, management expertise and access to international markets.

The major sectors benefited from FDI in India are:

(i) financial sector (banking and non-banking)
(ii) insurance
(iii) telecommunication
(iv) hospitality and tourism
(v) pharmaceuticals and
(vi) software and information technology.

FDI is not permitted in the industrial sectors like

(i) Arms and ammunition
(ii) atomic energy,
(iii) railways,

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(iv) coal and lignite and

(v) mining of iron, manganese, chrome, gypsum, sulphur, gold, diamonds, copper etc.,

FDI inflow in India has increased from $97 million in 1990-91 to $5,535 million in 2004-2005. It amounted to $32,955 million in 2011-2012. UNCTAD's World Investment Report 2018 reveals that FDI to India declined to $40 billion in 2017 from $44 billion in 2016.

Summary

International Economics is a valuable branch of Economics dealing with how trade benefits nations. Several theories have been propounded on causes of international trade starting from Adam Smith. The controversy over the need for a separate theory has been resolved by the Modern Theory of International Trade. The gains from trade, Terms of Trade, Balance of Payments constitute the major areas of discussion.

The Exchange rate, either fixed or flexible is a major factor determining the economic strength of the nation. In the line of foreign trade and foreign capital, foreign investment (especially FDI) plays a major role in determining economic development of Less Developed Countries and developing countries. international trade has helped the economically developed countries largely and disappointed many African and Asian countries.

The international economic organizations such as IMF, IBRD and WTO and the trade blocs SAARC, ASEAN and BRICS which play a vital role in international trade are covered in the next chapter.

Think and Do

1. Suppose the exchange rate between Indian Currency and US Dollar is ₹1= $65. If it changes to ₹1 = $55, the value of which currency increased and decreased?
2. Suppose a doctor from England is invited to diagnose the health status of a VIP in our State. The fees which we pay to the doctor are entered in to which account of the BOPs Account?

Glossary

- **International Economics:** A special branch of Economics which primarily deals with the basics of international trade.
- **Internal Trade:** A trade within the geographical boundary of a particular nation.
- **International Trade:** A trade between two or more countries and it is a trade beyond the geographical and political boundaries.
- **Absolute Cost Differences:** The difference in the actual costs of production of a commodity between two nations.
- **Comparative Cost Differences:** The difference in the absolute costs of production of two commodities between two countries.
- **Factor Endowment:** Abundance in the availability of a factor in a country.

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- **Terms of Trade:** The rate at which goods of one country are exchanged for that of another country ie ratio of export price and import price.
- **Balance of Trade:** The balance between the values of goods exchanged between two countries. It is a trade in merchandise items or visible items only.
- **Balance of Payments:** The balance between the values of goods and services exchanged between two countries. It is a trade in both visible and non-visible items.
- **Devaluation:** It means official reduction in the value of a currency in terms of gold or other currencies.
- **Foreign Exchange:** The currency of another country.
- **Exchange Rate:** The rate at which one currency is exchanged for another currency.
- **Fixed Exchange Rates:** An exchange rate that is held within a narrow band by the monetary authorities..
- **Flexible Exchange Rates:** Flexible exchange rates are freely determined in an open market primarily by private dealings, and they, like other market prices, vary from day by day.
- **Foreign Direct Investment:** The investment made by a multinational enterprise in a foreign country and an investment in a foreign country that involves some degree of control and participation in management.

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MODEL QUESTIONS

Part A

Multiple Choice Questions

1. Trade between two countries is known as ……trade

   a) External
   b) Internal
   c) Inter-regional
   d) Home

2. Which of the following factors influence trade?

   a) The stage of development of a product
   b) The relative price of factors of productions.
   c) Government.
   d) All of the above.

3. International trade differs from domestic trade because of

   a) Trade restrictions
   b) Immobility of factors
   c) Different government policies
   d) All the above

4. In general, a primary reason why nations conduct international trade is because

   a) Some nations prefer to produce one thing while others produce another
   b) Resources are not equally distributed among all trading nations
   c) Trade enhances opportunities to accumulate profits
   d) Interest rates are not identical in all trading nations

5. Which of the following is a modern theory of international trade?

   a) absolute cost
   b) comparative cost
   c) Factor endowment theory
   d) none of these

6. Exchange rates are determined in

   a) money market
   b) foreign exchange market
   c) stock market
   d) capital market

7. Exchange rate for currencies is determined by supply and demand under the system of

   a) Fixed exchange rate
   b) Flexible exchange rate
   c) Constant exchange rate
   d) Government regulated exchange rate

8. Net export equals ……

   a) Export x Import
   b) Export + Import
   c) Export – Import
   d) Exports of services only

9. Who among the following enunciated the concept of single factoral terms of trade?

   a) Jacob Viner
   b) G.S.Donens
   c) Taussig
   d) J.S.Mill

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10. Terms of Trade of a country show ……

a) Ratio of goods exported and imported
b) Ratio of import duties
c) Ratio of prices of exports and imports
d) Both (a) and (c)

11. Favourable trade means value of exports are ……. than that of imports.

a) More
b) Less
c) More or Less
d) Not more than

12. If there is an imbalance in the trade balance (more imports than exports), it can be reduced by

a) decreasing customs duties
b) increasing export duties
c) stimulating exports
d) stimulating imports

13. BOP includes

a) visible items only
b) invisible items only
c) both visible and invisible items
d) merchandise trade only

14. Components of balance of payments of a country include

a) Current account
b) Official account
c) Capital account
d) All of above

15. In the case of BOT,

a) Transactions of goods are recorded.
b) Transactions of both goods and services are recorded.
c) Both capital and financial accounts are included.
d) All of these

16. Tourism and travel are classified in which of balance of payments accounts?

a)merchandise trade account
b) services account
c)unilateral transfers account
d) capital account

17. Cyclical disequilibrium in BOP occurs because of

a) Different paths of business cycle.
b) The income elasticity of demand or price elasticity of demand is different.
c) long-run changes in an economy
d) Both (a) and (b).

18. Which of the following is not an example of foreign direct investment?

a) the construction of a new auto assembly plant overseas
b) the acquisition of an existing steel mill overseas
c) the purchase of bonds or stock issued by a textile company overseas
d) the creation of a wholly owned business firm overseas

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19. Foreign direct investments not permitted in India

a) Banking
b) Automic energy
c) Pharmaceutical
d)Insurance

20 Benefits of FDI include, theoretically

a) Boost in Economic Growth
b) Increase in the import and export of goods and services
c) Increased employment and skill levels
d) All of these

Answers

1	2	3	4	5	6	7	8	9	10
a	d	d	b	c	b	b	c	a	c
11	12	13	14	15	16	17	18	19	20
a	c	c	d	a	b	d	c	b	d

Part B

Answer the following questions. Each question carries 2 marks.

21. What is International Economics?
22. Define international trade.
23. State any two merits of trade.
24. What is the main difference between Adam Smith and Ricardo with regard to the emergence of foreign trade?
25. Define Terms of Trade.
26. What do you mean by balance of payments?
27. What is meant by Exchange Rate?

Part C

Answer the following questions. Each question carries 3 marks.

28. Describe the subject matter of International Economics.
29. Compare the Classical Theory of international trade with Modern Theory of International trade.
30. Explain the Net Barter Terms of Trade and Gross Barter Terms of Trade.
31. Distinguish between Balance of Trade and Balance of Payments.
32. What are import control?
33. Write a brief note on flexible exchange rate.
34. State the objectives of Foreign Direct Investment.

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Part D

Answer the following questions. Each question carries 5 marks.

35. Discuss the differences between Internal Trade and International Trade.
36. Explain briefly the Comparative Cost Theory.
37. Discuss the Modern Theory of International Trade.
38. Explain the types of Terms of Trade given by Viner.
39. Bring out the components of balance of payments account.
40. Discuss the various types of disequilibrium in the balance of payments.
41. How the Rate of Exchange is determined? Illustrate.
42. Mention the advantages of Foreign Direct Investment.

ACTIVITY

1. Students may be brought to any firm or industry which is involved in foreign trade to make them know the different procedures followed and activities done.
2. Students may be grouped as countries and directed to have a look at some available goods to be exchanged between them as if they involve in foreign trade.

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CHAPTER

8

International Economic Organisations

"Foreign capital infinitely prefers situations where the upside potential is vast, if risks must be taken to get in".

– Rudi Dorbush

Learning Objectives

1. To understand the role of international economic organizations in enhancing the magnitude of global business.
2. To know the objectives, functions and achievements of International Monetary Fund, World Bank and World Trade Organisation.
3. To study about the trade blocks, viz., SAARC, ASEAN and BRICS and their objectives, functions and achievements.

8.1 Introduction

In the previous chapter, we have studied the basis of trade, gains from trade, terms of trade, BoP and foreign exchange. When trade takes place among countries, the developed countries always stand to gain and the LDCs suffer from adverse terms of trade as well as balance of payments and they affect their exchange rates. The Great Depression of 1930s and World War II led to purely nationalistic policies in which almost every country imposed trade restrictions, exchange controls and exchange depreciation so as to boost exports and to restrict imports considerably.



John Maynard Keynes (right) and Harry Dexter White, the "founding fathers" of both the World Bank and the International Monetary Fund (IMF)

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The Brettonwoods Conference proposed IMF, World Bank and International Trade Organisation (ITO) in 1944. The IMF and World Bank were started in 1945. Instead of ITO, an interim arrangement was made and named GATT (General Agreement on Tariff and Trade). The GATT was transformed into WTO (World Trade Organisation) from 1995. The IMF, IBRD and WTO headquarters are presented in the table.

Institution	Headquarters	Year of Establishment
International Monetary Fund	Washington D.C	1945
World Bank	Washington D.C	1945
World Trade Organisation	Geneva	1995

8.2 International Monetary Fund

The purpose of International Monetary Fund is to secure and promote economic and financial cooperation among member countries. The IMF was established to assist the member nations to tide over the Balance of Payments disequilibrium in the short term. At present, the IMF has 189 member countries with Republic of Nauru joined in 2016.



The Republic of Nauru, a tiny South Pacific island nation in Pacific Ocean became the 189th member of the International Monetary Fund (IMF) and World Bank (IBRD)

8.2.1. Objectives Of IMF

i) To promote international monetary cooperation among the member nations.

ii) To facilitate faster and balanced growth of international trade.

iii) To ensure exchange rate stability by curbing competitive exchange depreciations.

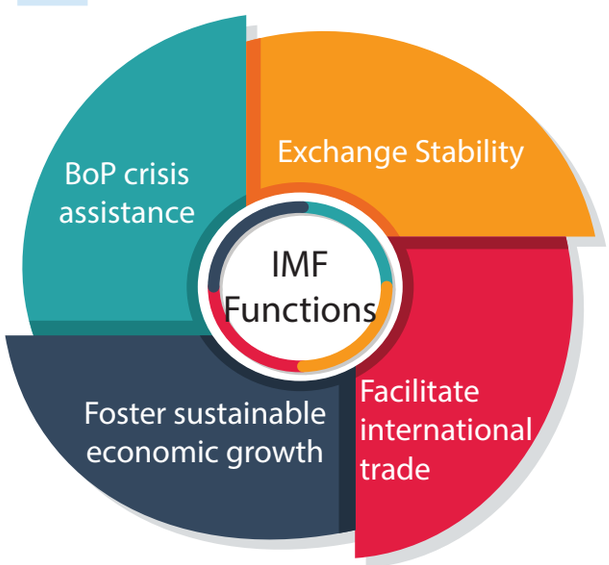
iv) To eliminate or reduce exchange controls imposed by member nations.

v) To establish multilateral trade and payment system in respect of current transactions instead of bilateral trade agreements.

vi) To promote the flow of capital from developed to developing nations.

vii) To solve the problem of international liquidity.

8.2.2 Functions Of IMF



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i) Bringing stability in exchange rate

The IMF is maintaining exchange rate stability and emphasising devaluation criteria, restricting members to go in for multiple exchange rates and also to buy or sell gold at prices other than declared par value.

ii) Correcting BOP Disequilibrium

The IMF is helping the member countries in eliminating or minimizing the short-period disequilibrium in their balance of payments either by selling or lending foreign currencies to the member nation.

iii) Determining par values

IMF enforces the system of determination of par values of the currencies of the member countries. According to the Articles of Agreement of the IMF, every member nation should declare the par value of its currency in terms of gold or US dollars. Under this article, IMF ensures smooth working of the international monetary system, in favour of some developed countries.

iv) Balancing demand and supply of currencies

IMF is entrusted with the important function of maintaining balance between demand and supply of various currencies. The Fund (IMF) can declare a currency as scarce currency which is in great demand and can increase its supply by borrowing it from the country concerned or by purchasing the same currency in exchange of gold.

v) Reducing trade restrictions

The Fund also aims at reducing tariffs and other trade barriers imposed by the member countries with the purpose of removing restrictions on remittance of funds or to avoid discriminating practices.

vi) Providing credit facilities

IMF is providing different borrowing and credit facilities with the objective of helping the member countries. These credit facilities offered by it include basic credit facility, extended fund facility for a period of three years, compensatory financing facility and structural adjustment facility.

The functions of the IMF are grouped under three heads.

1. Financial – Assistance to correct short and medium term deficit in BOP;
2. Regulatory – Code of conduct and
3. Consultative - Counseling and technical consultancy.

8.2.3 Facilities offered by IMF

The Fund has created several new credit facilities for its members. Chief among them are:

(i) Basic Credit Facility:

The IMF provides financial assistance to its member nations to overcome their temporary difficulties relating to balance of payments. A member nation can purchase from the Fund other currencies or SDRs, in exchange for its own currency, to finance payment deficits. The loan is repaid when the member repurchases its

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own currency with other currencies or SDRs. A member can unconditionally borrow from the Fund in a year equal to 25% of its quota. This unconditional borrowing right is called the reserve tranche.

Special Drawing Rights (SDRs)

The Fund has succeeded in establishing a scheme of Special Drawing Rights (SDRs) which is otherwise called 'Paper Gold'. They are a form of international reserves created by the IMF in 1969 to solve the problem of international liquidity. They are allocated to the IMF members in proportion to their Fund quotas. SDRs are used as a means of payment by Fund members to meet balance of payments deficits and their total reserve position with the Fund. Thus SDRs act both as an international unit of account and a means of payment. All transactions by the Fund in the form of loans and their repayments, its liquid reserves, its capital, etc., are expressed in the SDR.

The achievements of the fund can be summed up in the words of Haien that 'Fund is like an International Reserve Bank.'

(ii) Extended Fund Facility

Under this arrangement, the IMF provides additional borrowing facility up to 140% of the member's quota, over and above the basic credit facility. The extended facility is limited for a period up to 3 years and the rate of interest is low.

(iii) Compensatory Financing Facility

In 1963, IMF established compensatory financing facility to provide additional financial assistance to the member countries, particularly primary producing countries facing shortfall in export earnings. In 1981, the coverage of the compensatory financing facility was extended to payment problem caused by the fluctuations in the cost of cereal inputs.

(iv) Buffer Stock Facility

The buffer stock financing facility was started in 1969. The purpose of this scheme was to help the primary goods (food grains) producing countries to finance contributions to buffer stock arrangements for the stabilisation of primary product prices.

(v) Supplementary Financing Facility

Under the supplementary financing facility, the IMF makes temporary arrangements to provide supplementary financial assistance to member countries facing payments problems relating to their present quota sizes.

(vi) Structural Adjustment Facility

The IMF established Structural Adjustment Facility (SAF) in March 1986 to provide additional balance of payments assistance on concessional terms to the poorer member countries. In December 1987, the Enhanced Structural Adjustment Facility (ESAF) was set up to augment the availability of concessional resources to low income countries. The purpose of SAF and ESAF is to force the poor countries to undertake strong macroeconomic

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and structural programmes to improve their balance of payments positions and promote economic growth.

8.2.4. Achievements Of IMF

The main achievements of International Monetary Fund are as follows:

i) Establishment of monetary reserve fund

The Fund has played a major role in achieving the sizeable stock of the national currencies of different countries. To meet the foreign exchange requirements of the member nations, IMF uses its stock to help the member nations to meet foreign exchange requirements.

ii) Monetary discipline and cooperation

The IMF has shown keen interest in maintaining monetary discipline and cooperation among the member countries. To achieve this objective, it has provided assistance only to those countries which make sincere efforts to solve their problems.

iii) Special interest in the problems of UDCs

The notable success of the Fund is the maintenance of special interest in the acute problems of developing countries. The Fund has provided financial assistance to solve the balance of payment problem of UDCs. However, many UDCs continue to be UDCs, while the developed countries have achieved substantial growth.

8.2.5. India and IMF

Till 1970, India stood fifth in the Fund and it had the power to appoint a permanent Executive Director. India has been one of the major beneficiaries of the Fund assistance. It has been getting aid from the various Fund Agencies from time to time and has been regularly repaying its debt. India's current quota in the IMF is SDRs (Special Drawing Rights) 5,821.5 million, making it the 13th largest quota holding country at IMF with shareholdings of 2.44%. Besides receiving loans to meet deficit in its balance of payments, India has benefited in certain other respects from the membership of the Fund.

What is SDR?

- Fiat Money of the IMF
- A Potential Claim on Underlying Currency Basket

What Does SDR Stand For?

- Special Drawing Rights (SDR)

Why Was the SDR Created?

- To be "The" World Reserve Currency
- Create Global Liquidity

How is the SDR Valued?

- Original 1969 Creation

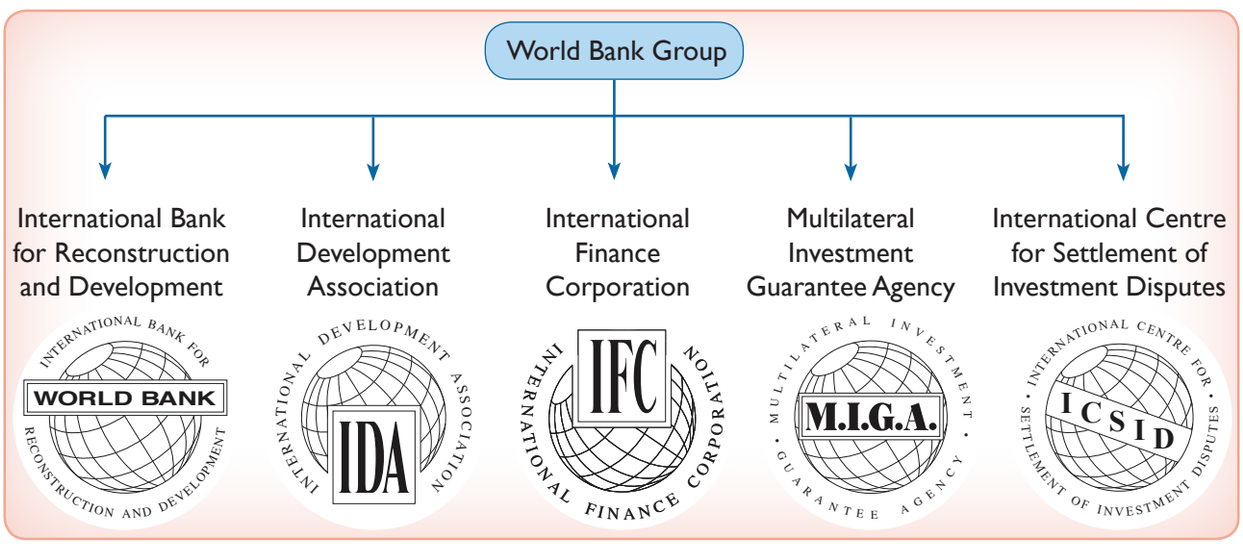
"The value of the SDR was initially defined as equivalent to 0.888671 grams of fine gold - which, at the time, was also equivalent to one U.S. dollar."

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8.3 International Bank For Reconstruction And Development (IBRD) or World Bank

The International Bank for Reconstruction and Development (IBRD), otherwise called the World Bank(WB) was established in 1945 under the Bretton Woods Conference in 1944. The purpose is to bring about a smooth transition from a war-time to peace-time economy. It is known as a sister institution along with the International Monetary Fund. The membership in International Monetary Fund is a prerequisite to become a member of IBRD. The IBRD was established to provide long term financial assistance to member countries.





8.3.1. Objectives of IBRD

Objectives of the World Bank

1. Reconstruction and Development
2. Encouragement to Capital Investment
3. Encouragement to International Trade
4. Establishment of Peace-time Economy
5. Environmental Protection

The following are the objectives of the World Bank:

1. To help member countries for economic reconstruction and development.
2. To stimulate long-run capital investment for restoring Balance of Payments (BoP) equilibrium and thereby ensure balanced development of international trade among the member nations.
3. To provide guarantees for loans meant for infrastructural and industrial projects of member nations.

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4. To help war ravaged economies transform into peace economies.

5. To supplement foreign private investment by direct loans out of its own funds for productive purposes.

World Bank's Lending Procedure:

The Bank advances loans to members in three ways

i) Loans out of its own fund,

ii) Loans out of borrowed capital and

iii) Loans through Bank's guarantee.

The Bank(WB) has changed its development loan strategy and lays more emphasis on financing schemes which directly influence the well being of poor masses of the member countries, especially the developing countries. The amount of agricultural loans has increased more rapidly than in any other sector. The bank now also takes interest in the activities of the development of rural areas such as:

a) spread of education among the rural people

b) development of roads in rural areas and

c) electrification of the villages.

8.3.2 Functions of IBRD

The World Bank performs the major role of providing loans for development works to member countries, especially to underdeveloped countries. The World Bank provides long-term loans for various development projects. Article 1 of the Agreement states the functions performed by the world bank as follows.

1. Investment for productive purposes

The World Bank performs the function of assisting in the reconstruction and development of territories of member nations through facility of investment for productive purposes. It also encourages the development of productive facilities and resources in less developed countries.

2. Balanced growth of international trade

Promoting the long range balanced growth of trade at international level and the maintaining equilibrium in BOPs of member nations by encouraging international investment.

3. Provision of loans and guarantees

Arranging the loans or providing guarantees on loans by various other channels so as to execute important projects.

4. Promotion of foreign private investment

The promotion of private foreign investment by means of guarantees on loans and other investment made by private investors. The Bank supplements private investment by providing finance for productive purpose out of its own resources or from borrowed funds.

5. Technical services

The World Bank facilitates different kinds of technical services to the member countries through Staff College and experts.

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8.3.3. Achievements of World Bank

The World Bank is said to be successful in achieving its primary objective of reconstruction and development of war ravaged nations. It helped greatly in the reconstruction of Europe after the World War II. It has been providing the developed and developing countries the same treatment in the process of growth.

i) It is noted that the Bank's membership has increased from the initial number of 30 countries to 68 countries in 1960 and to 151 countries in 1988. The IBRD has 189 member countries.

ii) The Bank grants medium and long-term loans (i.e., payable over a period of 15-20 years) for reconstruction and development purposes to the member countries. The actual term of a loan depends upon the estimated useful life of the equipment or plant financed.

iii) Initially the World Bank's loans were mainly directed at the European countries for financing their programmes of reconstruction. Later it changed its development loan strategy and lays more emphasis of financing schemes for the poor masses of the developing countries.

iv) The World Bank grants loans to member countries only for productive purposes particularly for agriculture, irrigation, power and transport. In other words, the Bank strengthens infrastructure needed for further development.

v) The International Development Association (IDA), the Soft Loan Window of the Bank provides loans to UDCs at very low rate of interest. However, the economic inequality among the member-countries goes on increasing. Many African countries are yet to improve their economic status.

8.3.4. India and World Bank:

The name "International Bank for Reconstruction and Development" was first suggested by India to the drafting committee. Since then the two have developed close relationship with each other from framing the policies of economic development in India to financing the implementation of these policies. The World Bank has given large financial assistance to India for economic development. Special mention may be made of the assistance World Bank has given to India in the development of infrastructure such as electric power, transport, communication, irrigation projects and steel industry.

The World Bank has assisted a number of projects in India. The IFC has identified five priority areas, namely, capital market development, direct foreign investment, access to foreign markets, equity investments in new and expanding companies and infrastructure. The World Bank has also assisted India in accelerating programmes of poverty alleviation and economic development. Until China became the member of World Bank in 1980, India was the largest beneficiary of the World Bank assistance.

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INDIA & IBRD : A Sustainable Relationship

- India is a member of **four of the five constituents** of the World Bank Group.
  - ★ **International Bank for Reconstruction and Development(IBRD, 1945)**
  - ★ **International Development Association (IDA, 1960)**
  - ★ **International Finance Corporation (IFC, 1956)**
  - ★ **Multilateral Investment Guarantee Agency (MIGA, 1958)**
  - ★ **International Centre for Settlement of Investment Disputes (ICSID, 1966)** [India is not its member]
- India is one of the founder members of IBRD, IDA and IFC. World Bank assistance in India started from 1948 when a funding for Agricultural Machinery Project was approved.
- First investment of IFC in India took place in 1959 with US$ 1.5 million.
- India became a member of MIGA in January 1994.
- India has an Executive Director, in the Board of Directors of IBRD / IFC / IDA/ MIGA.

8.4 World Trade Organization

The WTO was established in 1995 as a successor to the GATT. It is a new international organization set up as a permanent body and is designed to play the role of watch dog in the spheres of trade in goods and services, foreign investment and intellectual property rights. The Dunkel Draft, formulated by Arthur Dunkel, its Secretary General became the base for WTO.

Every two years, the member countries' Commerce Ministers Conference are being organized to discuss and settle the important souls and trade related matters. The first WTO conference was held at Singapore in 1996. The recent conference was held at Argentina in 2017. It was planned to organize 12th ministerial conference at Kazakhstan in 2020.

World Trade Centre



WTC headquarters located at New York, USA. It featured the landmark Twin Towers which was established on 4th April 1973. Later it was destroyed on 11th September 2001 by the craft attack. It brings together businesses involved in international trade from around the globe.

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8.4.1. Objectives of WTO

The basic aim is to expand international trade and bring about economic prosperity by liberalizing trade restrictions.

i) To ensure reduction of tariff and other barriers.

ii) To eliminate discrimination in trade.

iii) To facilitate higher standard of living.

iv) To facilitate optimal use of world's resources.

v) To enable the LDCs to secure fair share in the growth of international trade.

vi) To ensure linkages between trade policies, environmental policies and sustainable development.

WTO Agreements

Agreement on Trade Related Intellectual Property Rights (TRIPs)



Intellectual Property Rights include copy right, trade marks, patents, geographical indications, trade secrets, industrial designs, etc. TRIPS Agreement provides for granting product patents instead of process patents. The period of protection will be 20 years for patents, 50 years for copy rights, 7 years for trade marks and 10 years for layout designs. As a result of TRIPS, the dependence of LDCs on advanced countries for seeds, drugs, fertilizers and pesticides has increased. Farmers are depending on the industrial firm for their seeds.



The establishment of the WTO's TRIPS (trade-related aspects of intellectual property rights) Agreement in 1995 changed the face of international intellectual property (IP) law and policy-making. TRIPS negotiators recognized that short comings and inconsistencies in IP protection can distort trade and impede its benefits. The TRIPS Agreement helps ease trade tensions about IP issues while leaving WTO members ample space to pursue diverse domestic policies.

Agreement on Trade Related Investment Measures (TRIMs)

TRIMs are related to conditions or restrictions in respect of foreign investment in the country. It calls for introducing equal treatment for foreign companies on par with national companies. TRIMs were widely employed by developing countries. Restrictions on foreign investment on following grounds are to be removed.

- No restriction on area of investment.
- No binding on use of local material.
- No mandatory exports.
- No restriction on repatriation of royalty, dividend and interest.
- No trade balancing requirement, i.e. imports not exceeding exports.

General Agreement on Trade in Services (GATS)

GATS is the first multilateral set of rules covering trade in services like banking, insurance, transportation, communication, etc., All member

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countries are supposed to extend MFN (Most Favoured Nation) status to all other countries without any discrimination. Transparency should be maintained by publishing all relevant laws and regulations over services.

Phasing out of Multi Fibre Agreement (MFA)

The multi fibre agreement governed the world trade in textiles and garments since 1974. It imposed quotas on export of textiles by developing nations to the developed countries. This quota system was to be phased out over a period of ten years. This was beneficial to India.

Agreement on Agriculture (AoA)

Agriculture was included for the first time under GATT. The important aspects of the agreement are Tariffication, Tariff cuts and Subsidy reduction.

Dispute Settlement Body

The Disputes Settlement Body puts an end to procedural delays. It is mandatory to settle any dispute within 18 months. The disputes are resolved through multilateral trading system. However, India has lost a huge export earnings because of the conditions laid out by the Body.

8.4.2. Functions of WTO

The following are the functions of the WTO

i) It facilitates the implementation, administration and operation of the objectives of the Agreement and of the Multilateral Trade Agreements.

ii) It provides the forum for negotiations among its members, concerning their multilateral trade relations in matters relating to the agreements.

iii) It administers the Understanding on Rules and Procedures governing the Settlement of Disputes.

iv) It cooperates with the IMF and the World Bank and its affiliated agencies with a view to achieving greater coherence in global economic policy making.

Major WTO Functions

- ❖ Administering WTO trade agreements
- ❖ Forum for trade negotiations
- ❖ Handling trade disputes
- ❖ Monitoring national trade policies
- ❖ Technical assistance and training for developing countries
- ❖ Cooperation with other international organizations

8.4.3. Achievements of WTO

The major achievements of WTO are as follows

1) Use of restrictive measures for BoP problems has declined markedly;

2) Services trade has been brought into the multilateral system and many countries, as in goods, are opening their markets for trade and investment;

3) The trade policy review mechanism has created a process of continuous monitoring of trade policy developments.

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WTO Ministerial Conferences

WORLD TRADE ORGANIZATION

12. Kazakhstan - 2020
11. Buenos Aires, 10-13 December 2017
10. Nairobi, 15-18 December 2015
09. Bali, 3-6 December 2013
08. Geneva, 15-17 December 2011
07. Geneva, 30 November - 2 December 2009
06. Hong Kong, 13-18 December 2005
05. Cancún, 10-14 September 2003
04. Doha, 9-13 November 2001
03. Seattle, November 30 – December 3 1999
02. Geneva, 18-20 May 1998
01. Singapore, 9-13 December 1996

8.4.4. WTO and India

India is the founding member of the WTO. India favours multilateral trade approach. It enjoys MFN status and allows the same status to all other trading partners. India benefited from WTO on following grounds:

1. By reducing tariff rates on raw materials, components and capital goods, it was able to import more for meeting her developmental requirements. India's imports go on increasing.
2. India gets market access in several countries without any bilateral trade agreements.
3. Advanced technology has been obtained at cheaper cost.
4. India is in a better position to get quick redressal from the trade disputes.
5. The Indian exporters benefited from wider market information.

8.5 Trade Blocks

LWARB

- Some countries create business opportunities for themselves by integrating their economies in order to avoid unnecessary competition among them. Trade blocks cover different kinds of arrangements between or among countries for mutual benefit. Economic integration takes the form of *Free Trade Area, Customs Union, Common Market and Economic Union.*
- **A free trade area** is the region encompassing a trade bloc whose member countries have signed a free-trade agreement (FTA). Such agreements involve cooperation between at least two countries to reduce trade barriers. e.g. SAFTA, EFTA.
- **A customs union** is defined as a type of trade block which is composed of a free trade area with no tariff among members and (zero tariffs among members) with a common external tariff. e.g. BENELUX (Belgium, Netherland and Luxumbuarg).
- **Common market** is established through trade pacts. A group formed by countries within a geographical

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area to promote duty free trade and free movement of labour and capital among its members. e.g. European Common Market (ECM)

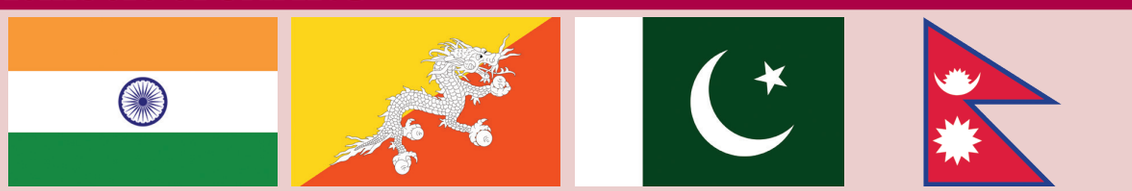
❖ **An economic union** is composed of a common market with a customs union. The participant countries have both common policies on product regulation, freedom of movement of goods, services and the factors of production and a common external trade policy. (e.g. European Economic Union)

Institution	Headquarters	Year of Establishment
South Asian Association for Regional Cooperation (SAARC)	Kathmandu	1985
ASEAN	Bangkok	1967
BRICS	Shangai	2001

8.6 South Asian Association For Regional Co-Operation (SAARC)

The South Asian Association for Regional Co-operation (SAARC) is an organisation of South Asian nations, which was established on 8 December 1985 for the promotion of economic and social progress, cultural development within the South Asia region and also for friendship and co-operation with other developing countries. The SAARC Group (SAARC) comprises of Bangaladesh, Bhutan, India, The Maldives, Nepal, Pakistan and Sri Lanka. In April 2007, Afghanistan became its eighth member. The basic aim of the organisation is to accelerate the process of economic and social development of member states through joint action in the agreed areas of cooperation. The SAARC Secretariat was established in Kathmandu (Nepal) on 16th January 1987. The first SAARC summit was held at Dhaka in the year 1985. SAARC meets once in two years. Recently, the 20th SAARC summit was hosted by Srilanka in 2018.

Members of SAARC



India Bhutan Pakistan Nepal

Bangaladesh Maldives Sri Lanka Afghanistan

Its seven founding members are Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan and Sri Lanka. Afgharistan joined later on 3rd April, 2007

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8.6.1. Objectives of SAARC

According to Article I of the Charter of the SAARC, the objectives of the Association are as follows:

i) To promote the welfare of the people of South Asia and improve their quality of life;

ii) To accelerate economic growth, social progress and cultural development in the region;

iii) To promote and strengthen collective self-reliance among the countries of South Asia;

iv) To contribute to mutual trust, understanding and appreciation of one another's problems;

v) To promote active collaboration and mutual assistance in the economic, social, cultural, technical and scientific fields;

vi) To strengthen co-operation with other developing countries;

vii) To strengthen cooperation among themselves in international forums on matters of common interest;

vii) To cooperate with international and regional organisations with similar aims and purposes.

8.6.2. Functions of SAARC

The main functions of SAARC are as follows.

1. Maintenance of the co operation in the region
2. Prevention of common problems associated with the member nations.
3. Ensuring strong relationship among the member nations.
4. Removal of the poverty through various packages of programmes.
5. Prevention of terrorism in the region.

8.6.3. Achievements of SAARC

1. The establishment of SAARC Preferential Trading Agreement (SAPTA) and reduction in tariff and non-tariff barriers on imports.
2. The setting up of Technical Committees for economic cooperation among SAARC countries relating to agriculture, communications, education, health and population, rural development, science and technology, tourism, etc.
3. SAARC has established a three-tier mechanism for exchanging information on poverty reduction programmes which is passed on to member countries.
4. SAARC Agricultural Information Centre (SAIC) in 1988 works as a central information institution for agriculture related resources like fisheries, forestry, etc.
5. South Asian Development Fund (SADF) for development projects, human resource development and infrastructural development projects. With all these tall claims, the inter-SAARC Trade has not gone beyond three percent in the last 30 years.

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8.7 Association of South East Asian Nations (ASEAN)

ASEAN was established on 8 August 1967 in Bangkok by the five original member countries: **Indonesia, Malaysia, Philippines, Singapore** and **Thailand**. Later Brunei Darussalam, Vietnam, Laos and Myanmar and Cambodia joined. Besides ten members of the ASEAN, there are six "dialogue partners" which have been participating in its deliberations. They are China, Japan, India, South Korea, New Zealand and Australia. The ASEAN nations are expected to benefit from the FTA as it will reduce tariff and non-tariff barriers. The common historical and cultural background made the member countries to maintain their unity and solidarity by establishing a trade block. Foreign trade is the life blood of the ASEAN countries following globalization and prudent macroeconomic policies. The ASEAN Summit of the Heads of Governments of member countries is the highest forum for ASEAN cooperation. Its meetings are held once in three years. The ASEAN \ministerial meeting of Foreign Ministers is the next highest decision-making body.

India's relationship with ASEAN started in 1992 when India became a "sectoral dialogue partner" of ASEAN. The geographic proximity of ASEAN countries to India facilitates faster exports and lower freight costs.



8.7.1 Objectives of ASEAN

The ASEAN Declaration states the aims and purposes of the Association as:

(i) To accelerate the economic growth, social progress and cultural development in the region;

(ii) To promote regional peace and stability and adherence to the principles of the United Nations Charter;

(iii) To promote cooperation among the members of ASEAN through the exchange of knowledge and experience in the field of public sector auditing.

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(iv) To provide a conducive environment and facilities for research, training, and education among the members

(v) To serve as a centre of information and as an ASEAN link with other international organizations.

8.7.2 Functions of the ASEAN

(i) It facilitates free movement of goods, services and investments within ASEAN by creating a single regional market like the European Union.

(ii) It provides free access to the marketers of one member country to the markets of all other member countries, thus fostering growth in the region.

(iii) It improves business competitiveness between businesses from different countries and also narrow developmental gaps between member countries.

(iv) It paves the way for market and investment opportunities for the member nations.

(v) It fosters co-operations in many areas including industry and trade.

All the ASEAN economies experienced a great economic crisis in the year 1997.

8.8 BRICS

BRICS is the acronym for an association of five major emerging national economies: **Brazil, Russia, India, China and South Africa**. Originally the first four were grouped as "BRIC" before the induction of South Africa in 2010. The term 'BRIC' was coined in 2001. The BRICS members are known for their significant influence on regional affairs. Since 2009, the BRICS nations have met annually at formal summits. South Africa hosted the 10th BRICS summit in July 2018. The agenda for BRICS summit 2018 includes Inclusive growth, Trade issues, Global governance, Shared Prosperity, International peace and security.



It's headquarters is at **Shanghai, China**. The New Development Bank (NDB) formerly referred to as the BRICS Development Bank was established by BRICS States. The first BRICS summit was held at Moscow and South Africa hosted the Tenth Conference at Johanesberg in July 2018. India had an opportunity of hosting fourth and Eighth summits in 2012 and 2016 respectively.

Few Facts About The BRICS

- The BRICS countries make up 21 percent of global GDP. They have increased their share of global GDP threefold in the past 15 years.
- The BRICS are home to 43 percent of the world's population.
- The BRICS countries have combined foreign reserves of an estimated $4.4 trillion

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8.8.1. Objectives of BRICS

1. To increase trade co-operation by making an exclusive trade block.
2. To use currency other than US Dollar. Since Dollar is a dominant currency and US can control the flow of dollar, BRICS helps in the countries operating with alternative currencies. How far have they succeeded in this respect? Not much.
3. To increase regional co-operation.
4. To create a separate trade block made for developing countries for trade co-operation.

8.8.2. Functions of BRICS

1. It acts as a promoter of more legitimate international system and also advocating reform of the UN Security Council.
2. This group of nations is especially meant for South-South framework for cooperation.
3. It performs as an agent to bridge the increasing gap between developed and developing countries. For instance, in the WTO, the BRICS countries are emphasizing to promote a fair order regarding agricultural policies.
4. It performs a commendable contribution for assisting developing countries in gaining in areas such as an advantage in trade and climate change negotiations.
5. It disseminates information and exchange platform beyond economic cooperation.
6. It acts as a catalytic in protecting the interests of middle powers on global forum.

8.8.3 Achievements of BRICS

Following are some of the major achievements of BRICS.

- The establishment of the Contingent Reserve Arrangement (CRA) has further deepened and consolidated the partnership of its members in the economic-financial area.
- In the sixth BRICS summit in Brazil, the member countries, signed an agreement to create a development bank (New Development Bank) with headquarters at Shangai, China in 2015 on the lines of Asian Development Bank and the World Bank.
- The economic potential and demographic development are putting the BRICS countries, increasingly in a leading position in setting the global agenda and having a greater say in the global governance.

It has to be remembered that BRICS share 43% of world population, but only 21% of the global GDP.

Summary:

The present chapter on International Economic Organisations discusses the role played by the IMF in solving the problem of trade related issues and credit facilities. The financial, regulatory and consultative functions of IMF and its benefits to India have been dealt with. Further, the objectives, functions and achievements of the World Bank and WTO have been covered.

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Also, the various agreements implemented by the WTO such as TRIPS, TRIMS, GATS, AoA, MFA have been discussed.

The final part of the chapter deals with the regional economic integration among the trade blocks such as SAARC (South Asian nations), ASEAN (South East Asia) and BRICS and their achievements.

Glossary

- **Structural Adjustment Facility:** Providing additional balance of payments assistance on concessional terms to the poorer member nations to undertake strong macroeconomic and structural programmes.
- **Special Drawing Rights:** International monetary reserve currency created by the International Monetary Fund (IMF) that operates as a supplement to the existing money reserves of member countries.
- **Trade Related Intellectual Property Rights (TRIPs):** TRIPs include copy right, trade mark, patents, geographical indications, industrial designs and invention of microbial plants.
- **Trade Related Investment Rights (TRIMs):** TRIMs are related to conditions or restrictions imposed in respect of foreign investment in the country.
- **Multilateral trade agreement:** It is a multi national legal or trade agreement between countries. It is an agreement between more than two countries but not many.
- **Trade blocks:** They are a set of countries which engage in international trade together and are usually related through a free trade agreement or other associations.
- **Free Trade Area:** A region encompassing a trade bloc whose member countries have signed a free-trade agreement (FTA). Such agreements involve cooperation between at least two countries to reduce trade barriers.
- **Customs Union:** Free trade area (zero tariffs among members) with a common external tariff.
- **Common Market:** A group formed by countries within a geographical area to promote duty free trade and free movement of labour and capital among its members.
- **Economic Union:** It is composed of a common market with a customs union. The participant countries have both common policies on product regulation, freedom of movement of goods, services and the factors of production and a common external trade policy.

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MODEL QUESTIONS

Part – A

Multiple choice questions

1. International Monetary Fund was an outcome of

    a) Pandung Conference
    b) Dunkel Draft
    c) Bretton Woods Conference
    d) Doha Conference

2. International Monetary Fund is having its headquarters at

    a) Washington D.C.
    b) New York
    c) Vienna
    d) Geneva

    I7XQH

3. IBRD is otherwise called

    a) IMF
    b) World Bank
    c) ASEAN
    d) International Finance Corporation

4. The other name for Special Drawing Rights is

    a) Paper gold
    b) Quotas
    c) Voluntary Export Restrictions
    d) None of these

5. The organization which provides long term loan is

    a) World Bank
    b) International Monetary Fund
    c) World Trade Organisation
    d) BRICS

6. Which of the following countries is **not** a member of SAARC?

    a) Sri Lanka
    b) Japan
    c) Bangladesh
    d) Afghanistan

7. International Development Association is an affiliate of

    a) IMF
    b) World Bank
    c) SAARC
    d) ASEAN

8. ---------- relates to patents, copyrights, trade secrets, etc.,

    a) TRIPS
    b) TRIMS
    c) GATS
    d) NAMA

9. The first ministerial meeting of WTO was held at

    a) Singapore
    b) Geneva
    c) Seattle
    d) Doha

10. ASEAN meetings are held once in every _____ years

    a) 2
    b) 3
    c) 4
    d) 5

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11. Which of the following is not the member of SAARC?

a) Pakistan
b) Sri Lanka
c) Bhutan
d) China

12. SAARC meets once in ---------- years.

a) 2
b) 3
c) 4
d) 5

13. The headquarters of ASEAN is

a) Jaharta
b) New Delhi
c) Colombo
d) Tokyo

14. The term BRIC was coined in

a) 2001
b) 2005
c) 2008
d) 2010

15. ASEAN was created in

a) 1965
b) 1967
c) 1972
d) 1997

16. The Tenth BRICS Summit was held in July 2018 at

a) Beijing
b) Moscow
c) Johannesburg
d) Brasilia

17. New Development Bank is associated with

a) BRICS
b) WTO
c) SAARC
d) ASEAN

18. Which of the following does not come under 'Six dialogue partners' of ASEAN?

a) China
b) Japan
c) India
d) North Korea

19. SAARC Agricultural Information Centre (SAIC) works as a central information institution for agriculture related resources was founded on

a) 1985
b) 1988
c) 1992
d)1998

20. BENELUX is a form of

a) Free trade area
b) Economic Union
c) Common market
d) Customs union

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Answers

1	2	3	4	5	6	7	8	9	10
c	a	b	a	a	b	b	a	a	b
11	12	13	14	15	16	17	18	19	20
d	a	a	a	b	c	a	d	b	d

Part B

Answer the following questions (2 marks)

21. Write the meaning of Special Drawing rights.
22. Mention any two objectives of ASEAN.
23. Point out any two ways in which IBRD lends to member countries.
24. Define Common Market.
25. What is Free trade area?
26. When and where was SAARC Secretariat established?
27. Specify any two affiliates of World Bank Group.

Part C

Answer the following questions (3 marks):

28. Mention the various forms of economic integration.
29. What are trade blocks?
30. Mention any three lending programmes of IMF.
31. What is Multilateral Agreement?
32. Write the agenda of BRICS Summit, 2018.
33. State briefly the functions of SAARC.
34. List out the achievements of BRICS.

Part D

Answer the following questions (5 marks)

35. Explain the objectives of IMF.
36. Bring out the functions of World Bank.
37. Discuss the role of WTO in India's socio economic development.
38. Write a note on a) SAARC b) BRICS

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ACTIVITY

1. The students are asked to go through the world map thoroughly to understand the location of countries and its capital.
2. The students may go to relevant websites to understand the international economic organisations and its events.

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Website Link

http://www.worldbank.org
http://www.imf.org

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CHAPTER 9

Fiscal Economics

"Incomings may be scant; but yet, no failures there,
If in expenditure you rightly learn to spare".

- Thirukkural No.478

Learning Objectives

1. To understand the meaning and subject matter of public finance.
2. To understand the direct and indirect taxes.
3. To describe the functions of finance commission.

9.1 Introduction

The term '*Fiscal Economics*' is a new one; the old and popular term of the subject is '*Public Finance*'. The subject Public Finance is related to the financing of the State activities and it discusses the financial operations of the *Government treasury*. The term *fiscal* is derived from Greek word which means *basket* and symbolizes the public purse. Hence the subject '*Public Finance*' has been newly termed '*Fiscal Economics*'.

Public Finance studies the manner in which the state raises and spends the resources. The state is concerned with the collective wants of the citizens. The modern state is a welfare state. The activities of the state have increased extensively and intensively. To perform these activities, the state needs funds. This chapter deals with the Public Revenue, Public Expenditure, Public Debt, Budget, Federal Finance and Local Finance.

9.2 Meaning of Public Finance

Public finance is a study of the financial aspects of Government. It is concerned with the revenue and expenditure of the public authorities and with adjustment of the one to the other.

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9.3 Definitions

"Public finance is one of those subjects that lie on the border line between Economics and Politics. It is concerned with income and expenditure of public authorities and with the adjustment of one to the other".

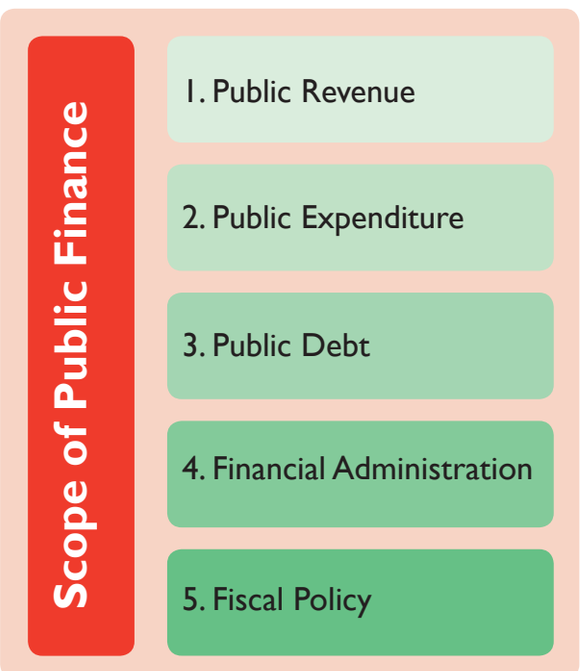
-Huge Dalton

"Public finance is an investigation into the nature and principles of the state revenue and expenditure".

-Adam Smith

9.4 Subject Matter / Scope of Public Finance

In Modern times, the subject 'Public Finance' includes five major sub-divisions, viz., Public Revenue, Public Expenditure, Public Debt, Financial Administration and Fiscal Policy.



1. Public Revenue

Public revenue deals with the methods of raising public revenue such as tax and non-tax, the principles of taxation, rates of taxation, impact, incidence and shifting of taxes and their effects.

2. Public Expenditure

This part studies the fundamental principles that govern the Government expenditure, effects of public expenditure and control of public expenditure.

3. Public Debt

Public debt deals with the methods of raising loans from internal and external sources.The burden, effects and redemption of public debt fall under this head.

4. Financial Administration

This part deals with the study of the different aspects of public budget. The budget is the Annual master financial plan of the Government. The various objectives and steps in preparing a public budget, passing or sanctioning, allocation evaluation and auditing fall within financial administration.

5. Fiscal Policy

Taxes, subsidies, public debt and public expenditure are the instruments of fiscal policy.

9.5 Public finance and Private finance

Public finance deals with study of income, expenditure, borrowing

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and financial administration of the government. Private finance is the study of income, expenditure, borrowing and financial administration of individual or private companies. Both public and private finance are fundamentally similar in nature but different from each other on various operational aspects. The similarities and dissimilarities between public and private finance have been explained below.

9.5.1. Similarities

1. Rationality

Both public finance and private finance are based on rationality. Maximization of welfare and least cost factor combination underlie both.

2. Limit to borrowing

Both have to apply restraint with regard to borrowing. The Government also cannot live beyond its means. There is a limit to deficit financing by the state also.

3. Resource utilisation

Both the private and public sectors have limited resources at their disposal. So both attempt to make optimum use of resources.

4. Administration

The effectiveness of measures of the Government as well as private depends on the administrative machinery. If the administrative machinery is inefficient and corrupt it will result in wastages and losses.

9.5.2. Dissimilarities

1. Income and Expenditure adjustment

The government adjusts the income to the expenditure while individuals adjust their expenditure to the income. Private finance involves stitching coat according to cloth available whereas public finance decides the cloth according to the need for the coat.

2. **Borrowing**

The government can borrow from internal and external sources; it can borrow from the people by issuing bonds. However, an individual cannot borrow from himself.

3. Right to print currency

The government can print currency. This involves the creation, distribution and monitoring of currency. The private sector cannot create currency.

4. Present vs. future decisions

The public finance is more involved with future planning and making long-term decisions. These investments could include building of schools, hospitals and infrastructure. The private finance makes financial decisions on projects with a short term vision.

5. Objective

The public sector's main objective is to provide social benefit in the economy. The private sector aims to maximize personal benefit i.e. Profit.

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6. Coercion to get revenue

The sources of income of a private individual is relatively limited while those of the Government is wide. The Government can use its power and authority.

7. Ability to make huge and deliberate changes

The public finance has the ability to make big decisions on income. For example, it can effectively and deliberately adjust the revenue. But individuals cannot make such massive decisions.

9.6 Functions of Modern State

The modern state is a welfare state and not just police state. The state assumes greater roles by creating economic and social overheads, ensuring stability both internally and externally, conserving resources for sustainable development and so on.

(i) Defence

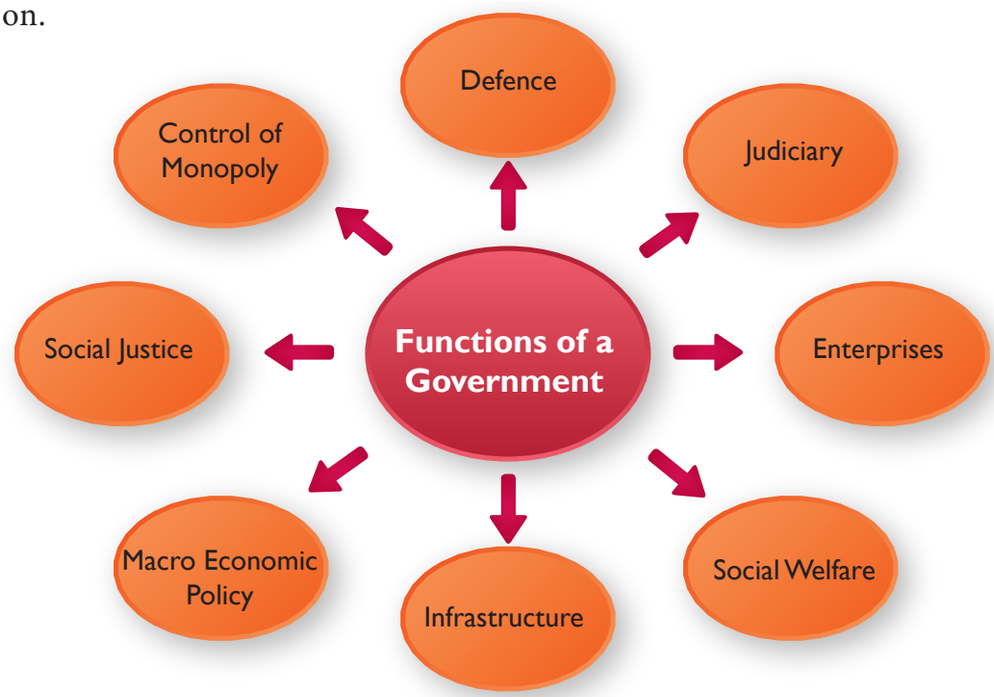
The primary function of the Government is to protect the people from external aggression and internal disorder. The government has to maintain adequate police and military forces and render protective services.

(ii) Judiciary:

Rendering justice and settlement of disputes are the concern of the government. It should provide adequate judicial structure to render justice to all classes of citizens.

(iii) Enterprises

The regulation and control of private enterprise fall under the purview of the modern State. Ownership of certain enterprises and operating them successfully are the responsibilities of the government.



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(iv) Social Welfare

It is the duty of the state to make provisions for education, social security, social insurance, health and sanitation for the betterment of the people in the country.

(v) Infrastructure

Modern States have to build the base for the economic development of the country by creating social and economic infrastructure.

(vi) Macro-economic policy

The Government has to administer fiscal policy and monetary policy to achieve macro-economic goals.

(vii) Social Justice

During the process of growth of an economy, certain sections of the society gain at the cost of others. The Government needs to intervene with fiscal measures to redistribute income.

(viii) Control of Monopoly

Concentration of economic power is another evil to be corrected by the Government. So, the state intervenes through control of monopolies and restrictive trade practices to curb concentration of economic power.

In fine, the state can play three kinds of roles.

i) As a producer of goods and services.

ii) As a supplier of public goods and social goods.

iii) As a regulator of the system.

9.7 Public Expenditure

9.7.1. Meaning

Public expenditure refers to Government spending incurred by Central, State and Local governments of a country.

9.7.2. Definition

Public expenditure can be defined as, "The expenditure incurred by public authorities like central, state and local governments to satisfy the collective social wants of the people is known as public expenditure".

9.7.3. Classifications of public expenditure are as follows:

1. **Classification on the Basis of Benefit:**

Cohn and Plehn have classified the public expenditure on the basis of benefit into four classes:

a) Public expenditure benefiting the entire society, e.g., the expenditure on general administration, defence, education, public health, transport.

b) Public expenditure conferring a special benefit on certain people and at the same time common benefit on the entire community, e.g. administration of justice etc.

c) Public expenditure directly benefiting particular group of persons and indirectly the entire society, e.g. social

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security, public welfare, pension, unemployment relief etc.

d) Public expenditure conferring a special benefit on some individuals, e.g., subsidy granted to a particular industry.

2. Classification on the Basis of Function:

Adam Smith classified public expenditure on the basis of functions of government in the following main groups:

a) **Protection Functions:** This group includes public expenditure incurred on the security of the citizens, to protect from external invasion and internal disorder, e.g., defence, police, courts etc.

b) **Commercial Functions:** This group includes public expenditure incurred on the development of trade and commerce, e.g., development of means of transport and communication etc.

c) **Development Functions:** This group includes public expenditure incurred for the development of infrastructure and industry.

9.7.4. Causes for the Increase in Government Expenditure

The modern state is a welfare state. In a welfare state, the government has to perform several functions viz Social, economic and political. These activities are the cause for increasing public expenditure.

1. Population Growth

During the past 67 years of planning, the population of India has increased from 36.1 crore in 1951, to 121 crore in 2011. The growth in population requires massive investment in health and education, law and order, etc. Young population requires increasing expenditure on education & youth services, whereas the aging population requires transfer payments like old age pension, social security & health facilities.

2. Defence Expenditure

There has been enormous increase in defence expenditure in India during planning period. The defence expenditure has been increasing tremendously due to modernisation of defence equipment. The defence expenditure of the government was ₹ 10,874 crores in 1990-91 which increased significantly to ₹ 2,95,511crores in 2018-19.

3. Government Subsidies

The Government of India has been providing subsidies on a number of items such as food, fertilizers, interest on priority sector lending, exports, education, etc. Because of the massive amounts of subsidies, the public expenditure has increased manifold.

The expenditure on subsidies by central government in 1990-91 was ₹ 9581 crores which increased significantly to ₹ 2, 29,715.67 crores in 2018-19. Besides this, the corporate sectors also receive subsidies (incentives) of more than ₹ 5 lakh crores.

4. Debt Servicing

The government has been borrowing heavily both from the internal and external

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sources, As a result, the government has to make huge amounts of repayment towards debt servicing.

The interest payment of the central government has increased from ₹ 21,500 crores in 1990-91 to ₹5, 75,794crores in 2018-19.

5. Development Projects

The government has been undertaking various development projects such as irrigation, iron and steel, heavy machinery, power, telecommunications, etc. The development projects involve huge investment.

6. Urbanisation

There has been an increase in urbanization. In 1950-51 about 17% of the population was urban based. Now the urban population has increased to about 43%. There are more than 54 cities above one million population. The increase in urbanization requires heavy expenditure on law and order, education and civic amenities.

7. Industrialisation

Setting up of basic and heavy industries involves a huge capital and long gestation period. It is the government which starts such industries in a planned economy. The under developed countries need a strong infrastructure like transport, communication, power, fuel, etc.

8. Increase in grants in aid to state and union territories

There has been tremendous increase in grant-in-aid to state and union territories to meet natural disasters.

9.8 Public Revenue

Public revenue occupies an important place in the study of public finance. The Government has to perform several functions for the welfare of the people. They involve substantial amount of public expenditure which can be financed only through public revenue. The amount of public revenue to be raised depends on the necessity of public expenditure and the people's ability to pay.

9.8.1. Meaning

The income of the government through all sources is called public income or public revenue.

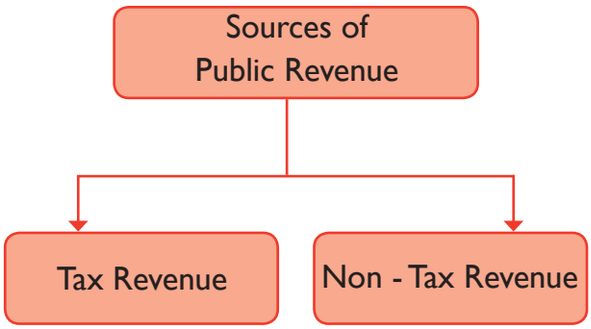
According to Dalton, the term "Public Income" has two senses — wide and narrow. In its wider sense it includes all the incomes or receipts which a public authority may secure during any period of time. In its narrow sense, it includes only those sources of income of the public authority which are ordinarily known as "revenue resources." To avoid ambiguity, the former is termed "public receipts" and the latter "public revenue."

In a narrow sense, it includes only those sources of income of the Government which are described as "revenue resources". In broad sense, it includes loans raised by the Government also.

9.8.2. Classification of Public Revenue.

Public revenue can be classified into two types.

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9.9 Tax Revenue

9.9.1. Meaning

Tax is a compulsory payment by the citizens to the government to meet the public expenditure. It is legally imposed by the government on the tax payer and in no case tax payer can refuse to pay taxes to the government.



9.9.2 Definitions

"A Tax is a compulsory payment made by a person or a firm to a government without reference to any benefit the payer may derive from the government."

-Anatol Murad

"A Tax is a compulsory contribution imposed by public authority, irrespective of the exact amount of service rendered to the tax payer in return and not imposed as a penalty for any legal offence."

- Dalton

9.9.3. Characteristics of Tax

1. A tax is a compulsory payment made to the government. People on whom a tax is imposed must pay the tax. Refusal to pay the tax is a punishable offence.
2. There is no quid pro quo between a taxpayer and the public authorities. This means that the tax payer cannot claim any specific benefit against the payment of a tax.
3. Every tax involves some sacrifice on the part of the tax payer.
4. A tax is not levied as a fine or penalty for breaking law.

Some of the tax revenue sources are

- ❖ Income tax
- ❖ Corporate tax
- ❖ Sales tax
- ❖ Surcharge and
- ❖ Cess

9.9.4. Non-Tax Revenue

The revenue obtained by the government from sources other than tax is called Non-Tax Revenue. The sources of non-tax revenue are

1. Fees

Fees are another important source of revenue for the government. A fee is charged by public authorities for rendering a service to the citizens. Unlike tax, there is no compulsion involved in case of fees. The government provides certain services and charges certain fees for them. For example, fees are charged for issuing of passports, driving licenses, etc.

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2. Fine

A fine is a penalty imposed on an individual for violation of law. For example, violation of traffic rules, payment of income tax after the stipulated time etc.

3. Earnings from Public Enterprises

The Government also gets revenue by way of surplus from public enterprises. Some of the public sector enterprises do make a good amount of profits. The profits or dividends which the government gets can be utilized for public expenditure.

4. Special assessment of betterment levy

It is a kind of special charge levied on certain members of the community who are beneficiaries of certain government activities or public projects. For example, due to a public park or due to the construction of a road, people in that locality may experience an appreciation in the value of their property or land.

5. Gifts, Grants and Aids

- A grant from one government to another is an important source of revenue in the modern days. The government at the Centre provides grants to State governments and the State governments provide grants to the local government to carry out their functions.

- Grants from foreign countries are known as Foreign Aid. Developing countries receive military aid, food aid, technological aid, etc. from other countries.

6. Escheats

It refers to the claim of the state to the property of persons who die without legal heirs or documented will.

9.9.5. Canons of Taxation:

The characteristics or qualities which a good tax should possess are described as canons of taxation. It must be noted that canons refer to the qualities of an isolated tax and not to the tax system as a whole. A good tax system should have a proper combination of all kinds of taxes having different canons.

According to Adam Smith, there are four canons or maxims of taxation. They are as follows:

Canons of Taxation

1. Canon of Ability
2. Canon of Certainty
3. Canon of Convenience
4. Canon of Economy



1.Canon of Ability

The Government should impose tax in such a way that the people have to pay taxes according to their ability. In such case a rich person should pay more tax compared to a middle class person or a poor person.

2.Canon of Certainty

The Government must ensure that there is no uncertainty regarding the

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rate of tax or the time of payment. If the Government collects taxes arbitrarily, then these will adversely affect the efficiency of the people and their working ability too.

3.Canon of Convenience

The method of tax collection and the timing of the tax payment should suit the convenience of the people. The Government should make convenient arrangement for all the tax payers to pay the taxes without difficulty.

4.Canon of Economy

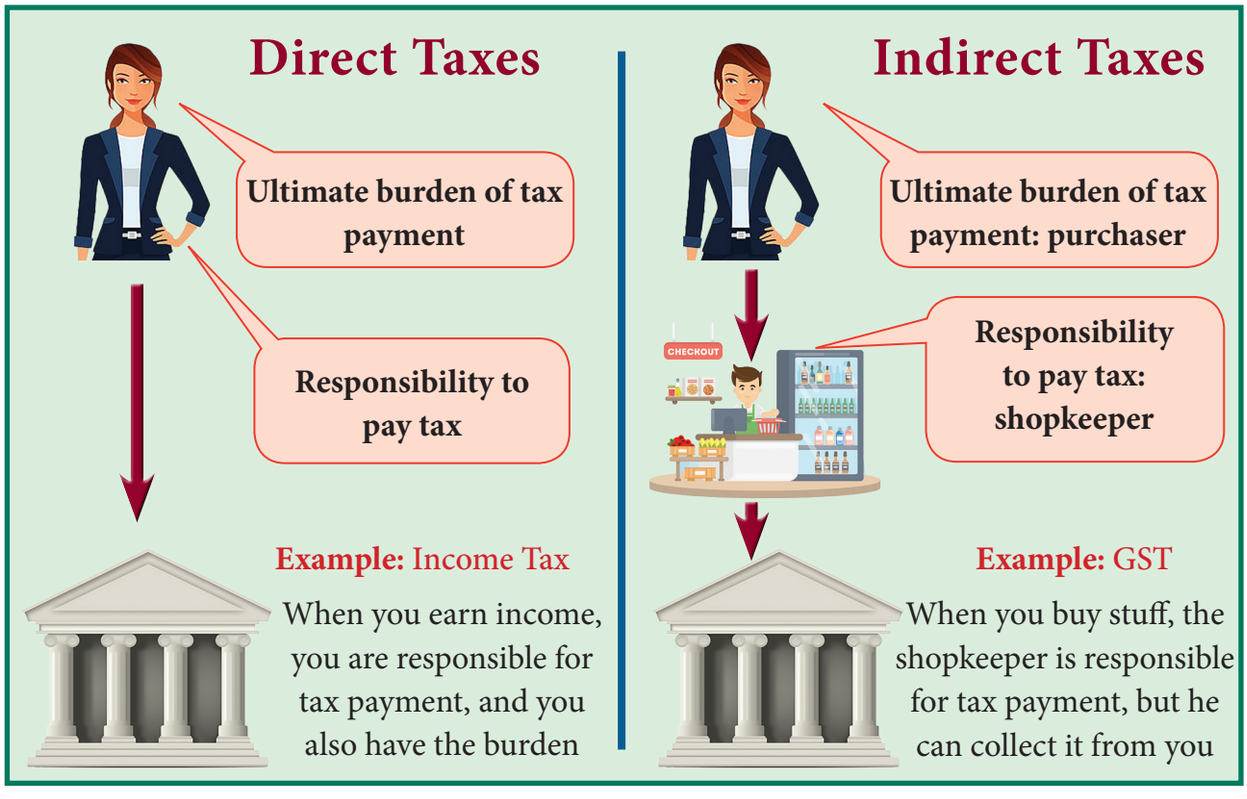
The Government has to spend money for collecting taxes, for example, salaries are given to the persons who are responsible for collecting taxes. The taxes, where collection costs are more are considered as bad taxes. Hence, according to Smith, the Government should impose only those taxes whose collection costs are very less and cheap .

9.9.6. Direct Tax and Indirect Tax

Direct Tax

A direct tax is referred to as a tax levied on person's income and wealth and is paid directly to the government; the burden of such tax cannot be shifted. The tax is progressive in nature. It is levied according to the paying capacity of the person, i.e. the tax is collected more from the rich and less from the poor people.

The plans and policies of Direct Taxes are being recommended by the Central Board of Direct Taxes (CBDT) which is under the Ministry of Finance, Government of India.



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9.9.7. Merits of Direct Taxes

1.Equity

Direct taxes are progressive i.e. rate of tax varies according to tax base. For example, income tax satisfies the canon of equity.

2.Certainty

Canon of certainty can be ensured by direct taxes. For example, an income tax payer knows when and at what rate he has to pay income tax.

3. Elasticity:

Direct taxes also satisfy the canon of elasticity. Income tax is income elastic in nature. As income level increases, the tax revenue to the Government also increases automatically.

4. Economy

The cost of collection of direct taxes is relatively low. The tax payers pay the tax directly to the state.

9.9.8. Demerits of Direct Taxes

1.Unpopular

Direct taxes are generally unpopular. It is inconvenient and less flexible.

2. Productivity affected

According to many economists direct tax may adversely affect productivity. Citizens are not willing to earn more income because in that case they have to pay more taxes.

3. Inconvenient

The tax payers find it inconvenient to maintain accounts, submit returns and pay tax in lump sum.

4. Tax Evasion

The burden of direct tax is so heavy that tax-payers always try to evade taxes. This ultimately leads to the generation of black money, which is harmful to the economy.

9.9.9. Indirect Tax

Indirect Tax is referred to as a tax charged on a person who purchases the goods and services and it is paid indirectly to the government. The burden of tax can be easily shifted to the another person. It is levied on all persons equally whether rich or poor.

There are several types of Indirect Taxes, such as:

Excise Duty: Payable by the manufacturer who shifts the tax burden to retailers and wholesalers.

Sales Tax: Paid by a shopkeeper or retailer, who then shifts the tax burden to customers by charging sales tax on goods and services.

Custom Duty: Import duties levied on goods from outside the country, ultimately paid for by consumers and retailers.

Entertainment Tax: Liability is on the cinema theatre owners, who transfer the burden to cinema goers.

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Service Tax: Charged on services like telephone bill, insurance premium such as food bill in a restaurant etc.

9.9.10. Merits of Indirect Taxes

(1) Wider Coverage

All the consumers, whether they are rich or poor, have to pay indirect taxes. For this reason, it is said that indirect taxes can cover more people than direct taxes. For example, in India everybody pays indirect tax as against just 2 percent paying income tax.

(2) Equitable

The indirect tax satisfies the canon of equity when higher tax is imposed on luxuries used by rich people.

(3) Economical

Cost of collection is less as producers and retailers collect tax and pay to the Government. The traders act as honorary tax collectors.

(4) Checks harmful consumption

The Government imposes indirect taxes on those commodities which are harmful to health e.g. tobacco, liquor etc. They are known as sin taxes.

(5) Convenient

Indirect taxes are levied on commodities and services. Whenever consumers make purchase, they pay tax along with the price. They do not feel the pinch of paying tax.

9.9.11. Demerits of Indirect Taxes

(1) Higher Cost of Collection

The cost of collection of indirect taxes is higher than the direct taxes. The Government has to spend huge money to collect indirect taxes.

(2) Inelastic

Indirect taxes are less elastic compared to direct taxes, as indirect taxes are generally proportional.

(3) Regressive

Indirect taxes are sometimes unjust and regressive in nature since both rich and poor persons have to pay same amount as taxes irrespective of their income level.

(4) Uncertainty

The rise in indirect taxes increases the price and reduces the demand for goods. Therefore, the Government is uncertain about the expected revenue collection. So Dalton says under indirect taxes 2+2 is not 4 but 3 or even less than 3.

(5) No civic Consciousness

As the tax is hidden in price, the consumers are not aware of paying tax.

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9.9.12. Comparison Chart

Basis For Comparison	Direct Tax	Indirect Tax
Meaning	Direct tax is referred to as the tax, levied on person's income and wealth and is paid directly to the government.	Indirect Tax is referred to as the tax, levied on a person who consumes the goods and services and is paid indirectly to the government.
Nature	Progressive	Regressive
Incidence and Impact	Falls on the same person.	Falls on different persons.
Tax base	Income or wealth of the assessee	Purchase/sale/manufacture of goods and provision of services
Evasion	Tax evasion is possible.	Tax evasion is hardly possible because it is included in the price of the goods and services.
Inflation	Direct tax helps in controlling the inflation.	Indirect taxes push up price inflation.
Imposition and collection	Imposed on and collected from assesses, i.e. Individual, HUF (Hindu Undivided Family), Company, Firm etc.	Imposed on and collected from consumers of goods and services but paid and deposited by the assessee.
Burden	Cannot be shifted.	Can be shifted

9.9.13. GST (Goods and Service Tax)



- GST is an Indirect Tax which has replaced many Indirect Taxes in India. The Goods and Service Tax Act was passed in the Parliament on 29th March 2017. The Act came into effect on 1st July 2017; Goods & Services Tax in India is a **comprehensive**, **multi-stage**, **destination-based tax** that is levied on every **value addition**.
- In simple words, Goods and Service Tax (GST) is an indirect tax levied on the supply of goods and services. This law has replaced many indirect tax laws that previously existed in India.
- GST is **one indirect tax** for the **entire country**.
- Under the GST regime, the tax will be levied at the final point of sale. In case of intra-state sales, Central GST and State GST will be charged. Inter-state sales will be chargeable to Integrated GST.

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Single Tax to replace multiple levies, right from manufacturer / supplier to consumer

Destination Based

Consider goods manufactured in Tamil Nadu and are sold to the final consumer in Karnataka. Since Goods & Service Tax is levied at the point of consumption, in this case, Karnataka, the entire tax revenue will go to Karnataka and not Tamil Nadu.

Components of GST

The component of GST are of 3 types. They are: CGST, SGST & IGST.

CGST: Collected by the Central Government on an intra-state sale (Eg: Within state/ union territory)

SGST: Collected by the State Government on an intra-state sale (Eg: Within state/ union territory)

IGST: Collected by the Central Government for inter-state sale (Eg: Maharashtra to Tamil Nadu)

In most cases, the tax structure under the new regime will be as follows:

Transaction	New Regime	Old Regime	
Sale within the State	CGST + SGST	VAT + Central Excise/Service tax	Revenue will be shared equally between the Centre and the State
Sale to another State	IGST	Central Sales Tax + Excise/Service Tax	There will only be one type of tax (central) in case of inter-state sales. The Center will then share the IGST revenue based on the destination of goods.

Nature of Sales tax, VAT and GST

1. Sales tax was multipoint tax with cascading effect.
2. VAT was multipoint tax without cascading effect.
3. GST is one point tax without cascading effect.

Advantages of GST

1. GST will mainly remove the cascading effect on the sale of goods and services. Removal of cascading effect will directly impact the cost of goods. Since tax on tax is eliminated in this regime, the cost of goods decreases.

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2. GST is also mainly technologically driven. All activities like registration, return filing, application for refund and response to notice need to be done online on the GST Portal. This will speed up the processes.

9.10 Public Debt



In the 18th and 19th centuries, the role of the state was minimum. But since 20th century there has been enormous increase in the responsibilities of the state. Hence the state has to supplement the traditional revenue sources with borrowing from individuals, and institutions within and outside the country. The amount of borrowing is huge in the under developed countries to finance development activities. The debt burden is a big problem and most of the countries are in debt trap.

9.10.1. Definitions

"The debt is the form of promises by the Treasury to pay to the holders of these promises a principal sum and in most instances interest on the principal. Borrowing is resorted to in order to provide funds for financing a current deficit."

– Philip E.Taylor

"The receipt from the sale of financial instruments by the government to individuals or firms in the private sector, to induce the private sector to release manpower and real resources and to finance the purchase of these resources or to make welfare payments or subsidies".

– Carl S.Shoup

9.10.2. Types of Public Debt

i) Internal public debt

An internal public debt is a loan taken by the Government from the citizens or from different institutions within the country. An internal public debt only involves transfer of wealth.

The main sources of internal public debt are as follows:

- Individuals, who purchase government bonds and securities;
- Banks, both private and public, buy bonds from the Government.
- Non-financial institutions like UTI, LIC, GIC etc. also buy the Government bonds.
- Central Bank can lend the Government in the form of money supply. The Central Bank can also issue money to meet the expenditures of the Government.

ii) **External public debt**

When a loan is taken from abroad or from an international organisation it is called external public debt. The main sources of External public debt are IMF, World Bank, IDA and ADB etc. Loan from other countries and the Governments.

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Countries External Debt as on June-2018				
Rank	**Country/Region**	**External debt (USD Millions)**	**Per capita US dollars**	**% of GDP**
1	USA	21,171,000	58,200	98
2	UK	8,475,956	127,000	313
3	France	5,689,745	87,200	213
4	Germany	5,398,267	65,600	141
7	Japan	3,586,817	28,200	74
13	China	1,710,625	1,200	14
21	Russia	537,458	3,700	40
22	India	529,000	380	20

(Source: World Bank Report and India's External Debt as at the end of March 2018 – RBI REPORT DATED 29-06-2018)

9.10.3. Causes for the Increase in Public debt

The causes for enormous growth of public debt may be studied under the following sub-headings:

1. War and Preparation of war

Waging war has become one of the important causes for incurring debts by the governments. In modern times, the preparation for war and nuclear defence programmes take away the major share of the government's revenue and so it incurs debt.

2. Social obligations

Modern states are considered to be 'Welfare States' and they have to undertake many social obligations like public health, sanitation, education,insurance, transport and communications, etc., besides providing the minimum necessaries of life to the citizens of the country. To finance these, the State has to incur a heavy public debt.

3. Economic Development and Deficit

The government has to undertake many projects for economic development of the country. Construction of railways, power projects, irrigation projects, heavy industries, etc., could be thought of only by means of mobilising resources in the form of public debt. Due to heavy public expenditure, the governments always face deficit budget. Such deficits have to be financed only through borrowings.

4.Employment

Most of the governments of modern days face the problem of unemployment and it has become the duty to solve this by making huge public expenditure. To solve the unemployment problem, and to fight recession, the government has to make

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huge expenditures. For this the States have to resort to public debt.

5.Controlling inflation

The Government can withdraw excess money from circulation, by raising public debt and thus prevent prices from rising.

6.Fighting depression

During the depression phase, private investment is lacking. The Government applies compensatory public spending by borrowing from internal and external sources.

9.10.4. Methods of Redemption of Public Debt

The process of repaying a public debt is called redemption. The Government sells securities to the public and at the time of maturity, the person who holds the security surrenders it to the Government. The following methods are adopted for debt redemption.

(1) Sinking Fund

Under this method, the Government establishes a separate fund known as "Sinking Fund". The Government credits every year a fixed amount of money to this fund. By the time the debt matures, the fund accumulates enough amount to pay off the principal along with interest. This method was first introduced in England by Walpol.

(2) Conversion

Conversion of loans is another method of redemption of public debt. It means that an old loan is converted into a new loan. Under this system a high interest public debt is converted into a low interest public debt. Dalton felt that debt conversion actually relaxes the debt burden.

(3) Budgetary Surplus

When the Government presents surplus budget, it can be utilised for repaying the debt. Surplus occurs when public revenue exceeds the public expenditure. However, this method is rarely possible.

(4) Terminal Annuity

In this method, Government pays off the public debt on the basis of terminal annuity in equal annual instalments. This is the easiest way of paying off the public debt.

(5) Repudiation

It is the easiest way for the Government to get rid of the burden of payment of a loan. In such cases, the Government does not recognise its obligation to repay the loan. It is certainly not paying off a loan but destroying it. However, in normal case the Government does not do so; if done it will lose its credibility.

(6) Reduction in Rate of Interest

Another method of debt redemption is the compulsory reduction in the rate of interest, during the time of financial crisis.

(7) Capital Levy

When the Government imposes levy on the capital assets owned by an individual or any institution, it is called capital levy. This levy is imposed on capital assets above a minimum limit on

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a progressive scale. The fund so collected can be used by the Government for paying off war time debt obligations. This is the most controversial method of debt repayment.

9.11 Budget

The word 'budget' is said to have its origin from the French word "Bougett" which refers to 'a small leather bag'.The budget is an annual financial statement which shows the estimated income and expenditure of the Government for the forthcoming financial year.

9.11.1. Definitions

"It is a document containing a preliminary approved plan of public revenue and expenditure".

-Reney Stourn.

"The budget has come to mean the financial arrangements of a given period, with the usual implication that they have been submitted to the legislature for approval".

- Bastabale

9.11.2. Union Budget and State Budget

India is a federal economy, hence public budget is divided into two layers of the Government. According to the Indian Constitution, the union Government has to submit annual financial statement, i.e., Union Budget under Article 112 to the Parliament and each State Government has to submit the same for the State in the Legislative Assembly under Article 202.

9.11.3. Types of Budget

Revenue and Capital Budget

On the basis of expenditure on revenue account and other accounts, a budget can be presented in two ways:

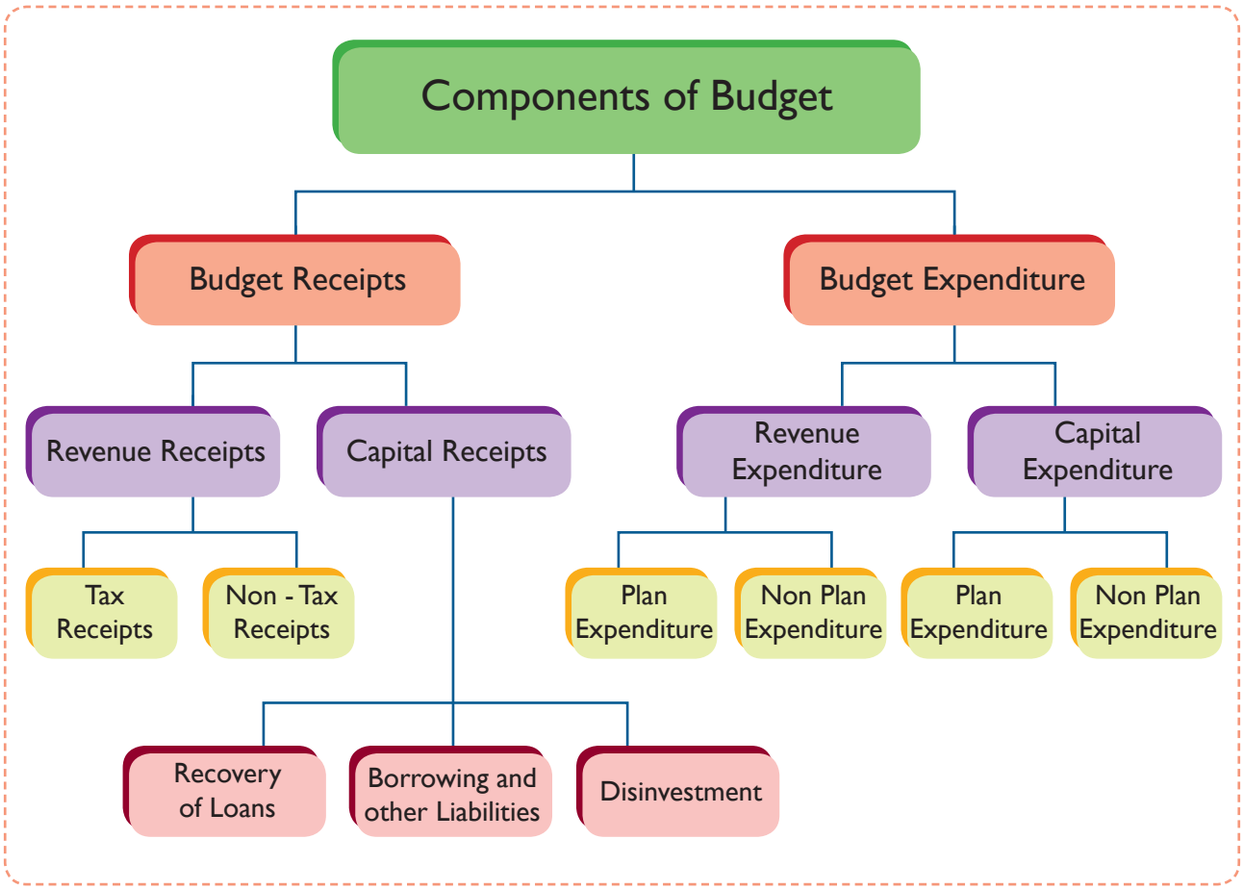
i) Revenue Budget: It consists of revenue receipts and revenue expenditure. Moreover, the revenue receipts can be categorised into tax revenue and non-tax revenue. Revenue expenditure can also be categorised into plan revenue expenditure and non-plan revenue expenditure.

ii) Capital Budget: It consists of capital receipts and capital expenditure. In this case, the main sources of capital receipts are loans, advances etc. On the other side capital expenditure can be categorised into plan capital expenditure and non-plan capital expenditure.

iii) Supplementary Budget: During the time of war emergencies and natural calamities like tsunami, flood etc, the expenditures allotted in the budget provisions are not always enough. Under these circumstances, a supplementary budget can be presented by the Government to tackle these unforeseen events.

iv) Vote - on - Account: Under Article 116 of the Indian Constitution, the budget can be presented in the middle of the year. The reason may be political in nature. The existing Government may or may not continue for the year, on account of the fact that elections are due, then the Government places a 'lame duck budget'. This is also called 'Vote-on-account Budget'.

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The vote on account budget is a special provision by which the Government gets permission from the parliament to incur expenditures on necessary items till the budget is finally passed in the parliament. The legal permission of both the Houses of the parliament for the withdrawal of money from the Consolidated Fund of India to meet the requisite expenses till the budget is finally approved is known as vote-on - account budget. This type of budget is generally sanctioned for not more than two months.

v) Zero Base Budget: The Government of India presented Zero-Base-Budgeting (ZBB first) in 1987-88. It involves fresh evaluation of expenditure in the Government budget, assuming it as a new item. The review has been made to provide justification or otherwise for the project as a whole in the light of the socio-economic objectives which have been already set up for this project and as well as in view of the priorities of the society.

vi) Performance Budget: When the outcome of any activity is taken as the base of any budget, such budget is known as 'Performance Budget'. For the first time in the world, the performance budget was made in USA. The Administrative Reforms Commission was set up in 1949 in America under Sir Hooper. This commission recommended making of a 'Performance Budget' in USA. In the Performance Budget, it is the compulsion of the government to tell 'what is done', 'how much done' for the betterment of the people. In India, the Performance Budget is also known as 'Outcome Budget'.

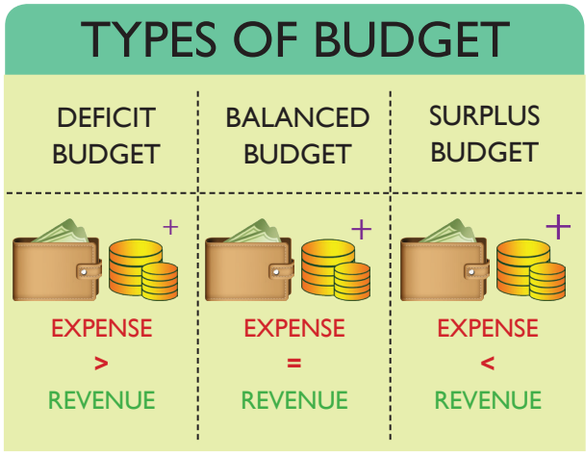
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vii) Balanced Budget Vs Unbalanced Budget

A. Balanced Budget

Balanced budget is a situation, in which estimated revenue of the government during the year is equal to its anticipated expenditure.

Government's estimated Revenue
=
Government's proposed Expenditure.



B. Unbalanced Budget

The budget in which Revenue & Expenditure are not equal to each other is known as Unbalanced Budget.

Unbalanced budget is of two types:

1. Surplus Budget
2. Deficit Budget

1. Surplus Budget

The budget is a surplus budget when the estimated revenues of the year are greater than anticipated expenditures.

Government Estimated revenue
>
Estimated Government Expenditure.

2. Deficit Budget

Deficit budget is one where the estimated government expenditure is more than expected revenue.

Government's estimated Revenue
<
Government's proposed Expenditure.

9.11.4. Budgetary Procedure

Budgetary procedure refers to the system through which the budget is prepared, enacted and executed.

(A) Preparation of the Budget

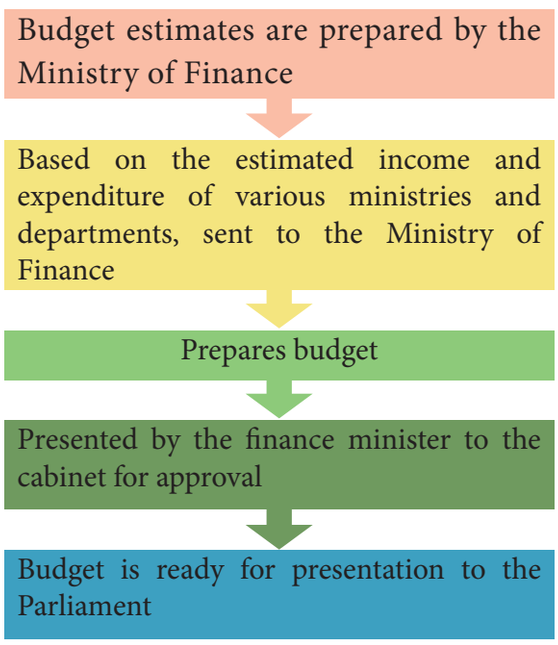
The Ministry of Finance prepares the Central Budget every year. At the state level the finance department is responsible for the Annual State Budget. While preparing the budget, the following factors are taken into account:

- The macro economic targets to be achieved within a plan period;
- The basic strategy of the budget;
- The financial requirements of different projects;
- Estimates of the revenue expenditures (includes defence expenditure, subsidy, interest payment on debt etc.);
- Estimates of the capital expenditures (includes development of railways, roadways, irrigations etc.);
- Estimates of revenue receipts from tax and non-tax revenues;

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- Estimates of capital receipts from the recovery of loans, disinvestment of public sector units, market borrowings etc.
- Estimates of the gap between revenue receipts and revenue expenditure; and
- Estimates of fiscal deficit, primary deficit, and revenue deficit.

Process in the Preparation of the Budget



(B) Presentation of the Budget

The hon'ble Minister of Finance, on behalf of the Central Government, places the Union Budget before Parliament on the eve of a new financial year. Similarly at state levels, the Hon'ble Finance Minister of the respective State Government places the State Budget before the State Legislature.

According to the Indian Constitution, all money bills must be initiated in the Lower House. All the money bills are first placed before the LokSabha at the Centre, and before the Legislative Assembly at the State level. The demands of various tax proposals are included in the budget. After the finance bill is passed, an appropriation bill is presented to give legal effect to the voted demands, and to authorise the expenditure as per the budget. In this way, the budgets are enacted in India.

(c) Execution of the Budget

The budget is mainly executed by different departments of the Government. Proper execution of the budgetary provisions are important for the efficient utilisation of the allocated funds.

Parliamentary Control over the Budget

In India,the Government Accounts are maintained in three parts:

(i) Consolidated Fund
(ii) Contingency Fund
(iii) Public Accounts

There are also two committees of Parliament, viz,

(i) The Public Accounts Committee, and
(ii) The Estimates Committee.

These committees keep a constant vigil on the expenditure so that no Ministry or Department exceeds the amount sanctioned to it.

9.11.5. Budgetary Deficits

Budget deficit is a situation where budget receipts are less than budget expenditures. This situation is also known as government deficit.

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In reference to the Indian Government budget, budget deficit is of four major types.

(a) Revenue Deficit

(b) Budget Deficit

(c) Fiscal Deficit, and

(d) Primary Deficit

(A) Revenue Deficit

It refers to the excess of the government revenue expenditure over revenue receipts. It does not consider capital receipts and capital expenditure. Revenue deficit implies that the government is living beyond its means to conduct day-to-day operations.

Revenue Deficit (RD) = Total Revenue Expenditure (RE) - Total Revenue Receipts (RR),

When RE - RR > 0

(B) Budget Deficit

Budget deficit is the difference between total receipts and total expenditure (both revenue and capital)

Budget Deficit = Total Expenditure – Total Revenue

(C) Fiscal Deficit

Fiscal deficit (FD) = Budget deficit – Government's market borrowings and liabilities

(D) Primary Deficit

Primary deficit is equal to fiscal deficit minus interest payments. It shows the real burden of the government and it does not include the interest burden on loans taken in the past. Thus, primary deficit reflects borrowing requirement of the government exclusive of interest payments.

Primary Deficit (PD) = Fiscal deficit (FD) - Interest Payment (IP)

9.12 Federal Finance

Federal finance refers to the system of assigning the source of revenue to the Central as well as State Governments for the efficient discharge of their respective functions i.e. clear-cut division is made regarding the allocation of resources of revenue between the central and state authorities.

- **Division of Powers**: In our Constitution, there is a clear division of powers so that none violates its limits and tries to encroach upon the functions of the other and functions within own sphere of responsibilities. There are **three lists** enumerated in the **Seventh Schedule of constitution.** They are: the Union list, the State list and the Concurrent List.
- The **Union List** consists of 100 subjects of national importance such as Defence, Railways, Post and Telegraph, etc.
- **The State List** consists of 61 subjects of local interest such as Public Health, Police etc.
- The **Concurrent List** has 52 subjects important to both the Union and the State, such as Electricity, Trade Union, Economic and Social Planning, etc.

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Central State Financial Relationship

(I) Union Sources

1. Corporation tax
2. Currency, coinage and legal tender, foreign exchange.
3. Duties of customs including export duties.
4. Duties of excise on tobacco and certain goods manufactured or produced in India.
5. Estate duty in respect of property other than agricultural land.
6. Fees in respect of any of the matters in the Union List, but not including any fees taken in any Court.
7. Foreign Loans.
8. Lotteries organized by the Government of India or the Government of a State.
9. Post Office Savings Bank.
10. Posts and Telegraphs, telephones, wireless, Broadcasting and other forms of communication.
11. Property of the Union.
12. Public Debt of the Union.
13. Railways.
14. Rates of stamp duty in respect of Bills of Exchange, Cheques, Promissory Notes, etc.
15. Reserve Bank of India.
16. Taxes on income other than agricultural income.
17. Taxes on the capital value of the assets, exclusive of agricultural land of individuals and companies.
18. Taxes other than stamp duties on transactions in stock exchanges and future markets.
19. Taxes on the sale or purchase of newspapers and on advertisements published therein.
20. Terminal taxes on goods or passengers, carried by railways, sea or air.

(II) State Sources

1. Capitation tax
2. Duties in respect of succession to agricultural land.
3. Duties of excise on certain goods produced or manufactured in the State, such as alcoholic liquids, opium, etc.
4. Estate duty in respect of agricultural land.
5. Fees in respect of any of the matters in the State List, but not including fees taken in any Court.
6. Land Revenue.
7. Rates of stamp duty in respect of documents other than those specified in the Union List.
8. Taxes on agricultural income.
9. Taxes on land and buildings.
10. Taxes on mineral rights, subject to limitations imposed by Parliament relating to mineral development.
11. Taxes on the consumption or sale of electricity.
12. Taxes on the entry of goods into a local area for consumption, use or sale therein.

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13. Taxes on the sale and purchase of goods other than newspapers.
14. Taxes on the advertisements other than those published in newspapers.
15. Taxes on goods and passengers carried by road or on inland waterways.
16. Taxes on vehicles.
17. Taxes on animals and boats.
18. Taxes on professions, trades, callings and employments.
19. Taxes on luxuries, including taxes on entertainments, amusements, betting and gambling.
20. Tolls.

(III) Taxes Levied and Collected by the union but Assigned to the States (Art.269)

1. Duties in respet of succession to property other than agricultural land.
2. Estate duty in respect of property other than agricultural land.
3. Taxes on railway fares and freights.
4. Taxes other than stamp duties on transactions in stock exchanges and future markets.
5. Taxes on the sale or purchase of newspapers and on advertisements published therein
6. Terminal taxes on goods or passengers carried by railways, sea or air.
7. Taxes on the sale or purchase of goods other than newspapers where such sale or purchase taxes place in the course of inter-State trade or commerce.

(IV) Duties levied by the Union but collected and Appropriated by the states (Art.268)

Stamp duties and duties of excise on medicinal and toilet preparation (those mentioned in the Union List) shall be levied by the Government of India but shall be collected.

(i) In the case where such duties are leviable within any Union territory, by the Government of India.

(ii) In other cases, by the States within which such duties are respectively leviable.

(v) Taxes which are Levied and Collected by the Union but which may be Distributed between the Union and the States (Arts.270 and 272)

1. Taxes on income other than agricultural income.
2. Union duties of excise other than such duties of excise on medicinal and toilet preparations as are mentioned in the Union List and collected by the Government of India.

"Taxes on income" does not include corporation tax. The distribution of income-tax proceeds between the Union and the States is made on the recommendations of the Finance Commission.

9.12.1. Principles of Federal Finance

In the case of federal system of finance, the following main principles must be applied:

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1. Principle of Independence.
2. Principle of Equity.
3. Principle of Uniformity.
4. Principle of Adequacy.
5. Principle of Fiscal Access.
6. Principle of Integration and coordination.
7. Principle of Efficiency.
8. Principle of Administrative Economy.
9. Principle of Accountability.

1. Principle of Independence

Under the system of federal finance, a Government should be autonomous and free about the internal financial matters concerned. It means each Government should have separate sources of revenue, authority to levy taxes, to borrow money and to meet the expenditure. The Government should normally enjoy autonomy in fiscal matters.

2. Principle of Equity

From the point of view of equity, the resources should be distributed among the different states so that each state receives a fair share of revenue.

3. Principle of Uniformity

In a federal system, each state should contribute equal tax payments for federal finance. But this principle cannot be followed in practice because the taxable capacity of each unit is not of the same.

4. Principle of Adequacy of Resources

The principle of adequacy means that the resources of each Government i.e. Central and State should be adequate to carry out its functions effectively. Here adequacy must be decided with reference to both current as well as future needs. Besides, the resources should be elastic in order to meet the growing needs and unforeseen expenditure like war, floods etc.

5. Principle of Fiscal Access

In a federal system, there should be possibility for the Central and State Governments to develop new source of revenue within their prescribed fields to meet the growing financial needs. In nutshell, the resources should grow with the increase in the responsibilities of the Government.

6. Principle of Integration and coordination

The financial system as a whole should be well integrated. There should be perfect coordination among different layers of the financial system of the country. Then only the federal system will survive. This should be done in such a way to promote the overall economic development of the country.

7. Principle of Efficiency

The financial system should be well organized and efficiently administered. There should be no scope for evasion and fraud. No one should be taxed more than once in a year. Double taxation should be avoided.

8. Principle of Administrative Economy

Economy is the important criterion of any federal financial system. That is,

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the cost of collection should be at the minimum level and the major portion of revenue should be made available for the other expenditure outlays of the Governments.

9. Principle of Accountability

Each Government should be accountable to its own legislature for its financial decisions i.e the Central to the Parliament and the State to the Assembly.

9.13 History of Finance Commission

- Finance commission is a quasi-judicial body set up under Article 280 of the Indian Constitution. It was established in the year 1951, to define the fiscal relationship framework between the Centre and the state.
- Finance Commission aims to reduce the fiscal imbalances between the centre and the states (Vertical imbalance) and also between the states (horizontal imbalance). It promotes inclusiveness.
- A Finance Commission is set up once in every 5 years. It is normally constituted two years before the period. It is a temporary Body.
- The 14th Finance Commission was set up in 2013. Its recommendations were valid for the period from 1st April 2015 to 31st March 2020.
- The 15th Finance Commission has been set up in November 2017. Its recommendations will be implemented starting 1 April 2020.

Finance Commission	Year of establishment	Chairman	Operational duration
First	1951	K. C. Neogy	1952–57
Second	1956	K. Santhanam	1957–62
Third	1960	A. K. Chanda	1962–66
Fourth	1964	P. V. Rajamannar	1966–69
Fifth	1968	MahaveerTyagi	1969–74
Sixth	1972	K. Brahmananda Reddy	1974–79
Seventh	1977	J. M. Shelat	1979–84
Eighth	1983	Y. B. Chavan	1984–89
Ninth	1987	N. K. P. Salve	1989–95
Tenth	1992	K. C. Pant	1995–2000
Eleventh	1998	A. M. Khusro	2000–05
Twelfth	2002	C. Rangarajan	2005–10
Thirteenth	2007	Dr. Vijay L. Kelkar	2010–15
Fourteenth	2013	Dr. Y. V Reddy	2015–20
Fifteenth	2017	N. K. Singh	2020–25

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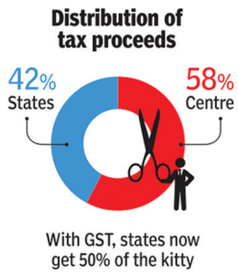
9.13.1. Functions of Finance Commission of India

Article 280 (3) speaks about the functions of the Finance Commission. The Article states that it shall be the duty of the Commission to make the recommendations to the President as to:

1. The distribution between the Union and the States of the net proceeds of taxes, which may be divided between them and the allocation among the states of the respective shares of such proceeds;

2. To determine the quantum of grants-in-aid to be given by the Centre to states [Article 275 (1)] and to evolve the principles governing the eligibility of the state for such grant-in-aid;

HOW TAXES ARE SPLIT



- Article 280 of the Constitution mandates the finance commission to recommend the distribution of the net proceeds of taxes between the Centre and the states every five years.
- 15th Finance Commission's recommendations on tax sharing between Centre and States are to kick in from April 2020

3. Any other matter referred to the Commission by the President of India in the interest of sound finance. Several issues like debt relief, financing of calamity relief of states, additional excise duties, etc. have been referred to the Commission invoking this clause.

9.14 Local Finance

Local finance refers to the finance of local bodies in India. There is a large variety of local bodies in India. We have the following main four local bodies which are functioning today in our country:

Types of Local Bodies

1. Village Panchayats
2. District Boards or ZilaParishads
3. Municipalities
4. Municipal Corporations

1. Village Panchayats:



- **Establishment:** The jurisdiction of a panchayat is usually confined to one revenue village. In some cases, though not very frequently, two or more small villages are grouped under one panchayat. The establishment of panchayat raj is the avowed policy of most states in India.

- **Functions**

a) The functions of panchayats range over a wide area including civil, economic and so on. Thus small disputes may be disposed of by panchayats on the spot.

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b) Roads, primary schools, village dispensaries etc. are to be managed by panchayats.

c) The supply of water, both for drinking and irrigation, falls within their field of responsibility, and in some cases farming, marketing, storage, etc. are entrusted to them.

Sources of revenue of Village Panchayats

The following are the sources of revenue of village panchayats.

(i) general property tax,

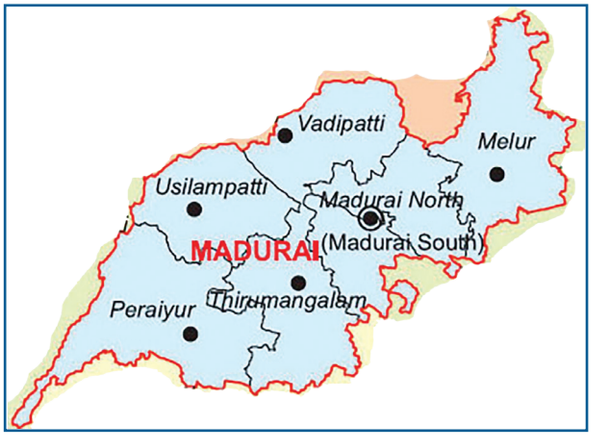
(ii) taxes on land,

(iii) profession tax, and

(iv) tax on animals and vehicles.

Other taxes include service tax, octroi, theatre tax, pilgrim tax, tax on marriage, tax on birth and deaths, and labour tax. As a matter of fact, taxes are levied by the panchayats only with the sanction of the state government, and there are certain limits in respect of tax rates which have to be observed.

2. District Boards Or ZilaParishads:



◆ **Establishment:** In rural areas, district boards or Zila Parishads are established at district level. The territorial jurisdiction of a district board is generally a revenue district.

◆ **Functions**

In Tamil Nadu, the Zila Parishad is a co-ordinating body which exercises general supervision over the working of Panchayat Samitis and advises them on implementation of Development Schemes.

Sources of revenue of District Boards

(i) Grants-in-aid from the state government.

(ii) Land Cesses.

(iii) Toll, fees etc.

(iv) Income from the property and loans from the state governments.

(v) Grants for the centrally sponsored schemes relating to development work.

(vi) Income from fairs and exhibitions.

(vii) Property tax and other taxes which the state governments may authorise the district boards.

3. Municipalities



◆ **Establishment and Functions:** The municipalities are bodies or institutions

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which are established in urban areas for looking after local affairs, such as, sanitation, public health, local roads, lighting, water supply, cleaning of streets, maintenance of parks and gardens, maintenance of hospitals, dispensaries and veterinary hospitals, provision of drainage, provision of primary education, organising of fairs and exhibitions etc. However, all these functions are performed subject to the control of the state government.

Sources of revenue of municipalities

(i) taxes on property

(ii) taxes on goods, particularly octroi and terminal tax

(iii) personal taxes, taxes on profession, trades and employment

(iv) taxes on vehicles and animals

(v) theatre or show tax, and

(vi) grants-in-aid from state government.

4. Municipal Corporations



Establishment and Functions:

The municipal corporations have wide powers and enjoy greater freedom as compared to municipalities. The municipal corporations are usually entrusted with the functions, such as, water supply and drainage, lighting, roads, slum clearance, housing and town planning etc. The rapid increase in the population of cities has definitely added to the functions of municipal corporations.

Sources of revenue of Corporations

(i) tax on property,

(ii) tax on vehicles and animals,

(iii) tax on trades, calling and employment,

(iv) theatre and show tax,

(v) taxes on goods brought into the cities for sale,

(vi) taxes on advertisements,

(vii) octroi and terminal tax etc.

The corporations have a fair degree of freedom in respect of their choice and modification of these taxes, subject to the maximum and minimum rates laid down by the law.

9.15 Fiscal policy

As an instrument of macro-economic policy, fiscal policy has been very popular among modern governments. The growing importance of fiscal policy was due to the Great Depression and the development of 'New Economics' by Keynes.

9.15.1. Meaning of Fiscal Policy

In common parlance fiscal policy means the budgetary manipulations affecting the macro economic variables – output, employment, saving, investment etc.

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9.15.2. Definitions

"The term fiscal policy refers to a policy under which the Government uses its expenditure and revenue programmes to produce desirable effects and avoid undesirable effects on the national income, production and employment"

– Arthur Smithies

"By fiscal policy is meant the use of public finance or expenditure, taxes, borrowing and financial administration to further our national economic objectives"

– Buehler

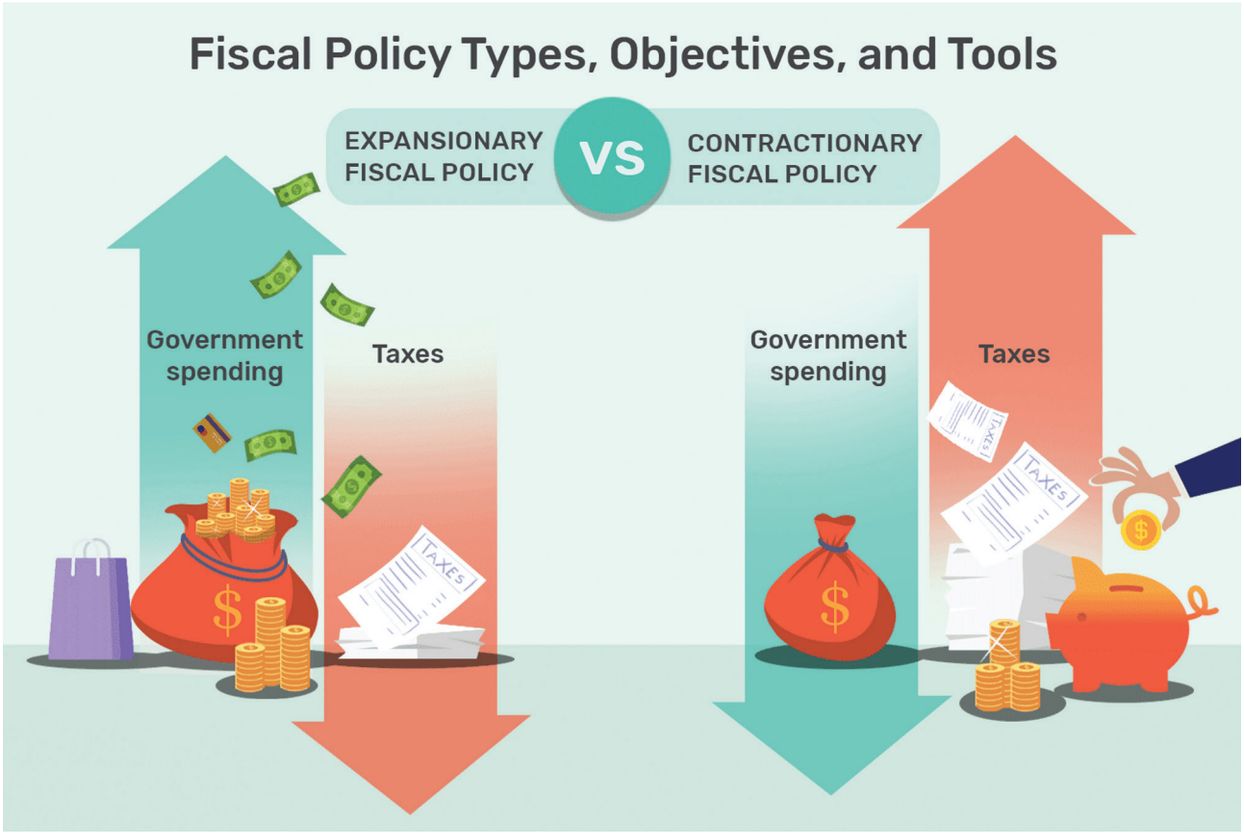
9.15.3. Fiscal Instruments

Fiscal Policy is implemented through fiscal instruments also called 'fiscal tools' or fiscal levers: Government expenditure, taxation and borrowing are the fiscal tools.

i) Taxation: Taxes transfer income from the people to the Government. Taxes are either direct or indirect. An increase in tax reduces disposable income. So taxation should be raised to control inflation. During depression, taxes are to be reduced.

ii) Public Expenditure: Public expenditure raises wages and salaries of the employees and thereby the aggregate demand for goods and services. Hence public expenditure is raised to fight recession and reduced to control inflation.

iii) Public debt: When Government borrows by floating a loan, there is transfer of funds from the public to the Government. At the time of interest payment and repayment of public debt, funds are transferred from Government to public.



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9.15.4. Objectives of Fiscal Policy:



The Fiscal Policy is useful to achieve the following objectives:

1. Full Employment

Full Employment is the common objective of fiscal policy in both developed and developing countries. Public expenditure on social overheads help to create employment opportunities. In India, public expenditure on rural employment programmes like MGNREGS is aimed at employment generation.

2. Price Stability

Price instability is caused by mismatch between aggregate demand and aggregate supply. Inflation is due to excess demand for goods. If excess demand is caused by Government expenditure in excess of real output, the most effective measure is to cut down public expenditure. Taxation of income is the best measure if excess demand is due to private spending. Taxation reduces disposable income and so aggregate demand.

To fight depression, the Government needs to increase its spending and reduce taxation.

3. Economic Growth

Fiscal Policy is used to increase the productive capacity of the economy. Tax is to be used as an instrument for encouraging investment. Tax holidays and tax rebates for new industries stimulate investment. Public sector investments are to be increased to fill the gap left by private investment. When resource mobilization through tax measures is inadequate, the Government resorts to borrowing both from internal and external sources to finance growth projects.

4. Equitable distribution

Progressive rates in taxation help to reduce the gap between the rich and the poor. Similarly progressive rates in public expenditure through welfare schemes such as free education, noon meal for school children and subsidies promote the living standard of poor people.

5. Exchange Stability

Fluctuations in international trade cause movements in exchange rate. Tax concessions and subsidy to export oriented units help to boost exports. Customs duties on import of non-essential items help to cut import bill. The reduction in import duty on import of raw material and machinery enables reduction in cost and make the exports competitive.

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6. Capital formation

Capital formation is essential for rapid economic development. Tax relief helps to increase disposable income, savings and thereby capital formation. Government expenditure on infrastructure development like power and transport encourages private investment.

7. Regional balance

Fiscal incentives for industries in the backward regions help to narrow down regional imbalances. Public expenditure may be used to start industrial estates so that industrial activity is stimulated in backward regions.

Summary:

The science of public finance deals with the revenue and expenditure of the Centre, state and local Government. In modern times, this subject includes five major divisions: Public revenue, public expenditure, public debt, fiscal administration and Fiscal Policy. Thus, public finance plays a vital role in both developed and underdeveloped economies. In advanced or developed economies, there is a problem of economic instability due to either 'lack of demand' or 'excess of demand'. In under developed countries, fiscal policy is one of the instruments for achieving faster economic growth.

Fiscal Policy became popular after the Great Depression. Government's intervention was emphasised by J.M.Keynes to get the economies out of the Depression. There is close association between governments spending, private investment, interest rate, consumption and income growth.

Glossary

Tax: Compulsory payment paid by the citizens to the Government without any quid pro quo.

Quid pro quo: A favour or advantage granted in return for something.

Proportional Tax: Tax is imposed at the same rate irrespective of tax base

Progressive Tax: The rate of tax increases with the increase in tax base (income)

Regressive Tax: High rate of tax is levied on the poor and low rate is levied to the rich

Internal public debt: A loan taken by the Government from the citizens or from different institutions with in the country

External public debt: A loan taken from abroad or from an international organisation

Fiscal Policy: Policy related with the revenue and expenditure process of the Government

Deficit Budget: The gap between Government anticipated revenue and the targeted expenditure

Budget: It is an annual financial statement which shows the income and expenditure of the Government

Federal Finance: The system of assigning the source of revenue to the Central as well as State Governments.

Local Finance: Local finance refers to the finance of local bodies in India

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MODEL QUESTIONS

Part – A

Multiple choice questions

1. The modern state is

   a) Laissez-faire state
   b) Aristocratic state
   c) Welfare state
   d) Police state

2. One of the following is NOT a feature of private finance

   a) Balancing of income and expenditure
   b) Secrecy
   c) Saving some part of income
   d) Publicity

3. The tax possesses the following characteristics

   a) Compulsory
   b) No quid pro quo
   c) Failure to pay is offence
   d) All the above

4. Which of the following canons of taxation was not listed by Adam smith?

   a) Canon of equality
   b) Canon of certainty
   c) Canon of convenience
   d) Canon of simplicity

5. Consider the following statements and identify the correct ones.

i. Central government does not have exclusive power to impose tax which is not mentioned in state or concurrent list.

ii. The Constitution also provides for transferring certain tax revenues from union list to states.

   a) i only
   b) ii only
   c) both
   d) none

6. GST is equivalence of

   a) Sales tax
   b) Corporation tax
   c) Income tax
   d) Local tax

7. The direct tax has the following merits except

   a) equity
   b) convenient
   c) certainty
   d) civic consciousness

8. Which of the following is a direct tax?

   a) Excise duty
   b) Income tax
   c) Customs duty
   d) Service tax

9. Which of the following is **not** a tax under Union list?

   a) Personal Income Tax
   b) Corporation Tax
   c) Agricultural Income Tax
   d) Excise duty

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10. "Revenue Receipts" of the Government do not include

a) Interest
b) Profits and dividends
c) Recoveries and loans
d) Rent from property

11. The difference between revenue expenditure and revenue receipts is

a. Revenue deficit
b. Fiscal deficit
c. Budget deficit
d. Primary deficit

12. The difference between total expenditure and total receipts including loans and other liabilities is called

a. Fiscal deficit
b. Budget deficit
c. Primary deficit
d. Revenue deficit

13.The primary purpose of deficit financing is

a) Economic development
b) Economic stability
c) Economic equality
d) Employment generation

14. Deficit budget means

a) An excess of government's revenue over expenditure
b) An excess of government's current expenditure over its current revenue
c) An excess of government's total expenditure over its total revenue
d) None of above

15. Methods of repayment of public debt is

a) Conversion
b) Sinking fund
c) Funded debt
d) All these

16. Conversion of public debt means exchange of

a) new bonds for the old ones
b) low interest bonds for higher interest bonds
c) Long term bonds for short term bonds
d) All the above

17. The word budget has been derived from the French word "bougette" which means

a) A small bag
b) An empty box
c) A box with papers
d) None of the above

18. Which one of the following deficits does not consider borrowing as a receipt?

a) Revenue deficit
b) Budgetary deficit
c) Fiscal deficit
d) Primary deficit

19. Finance Commission determines

a) The finances of Government of India
b) The resources transfer to the states
c) The resources transfer to the various departments
d) None of the above

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20. Consider the following statements and identify the right ones.
    i. The finance commission is appointed by the President
    ii. The tenure of Finance commission is five years

    a) i only
    b) ii only
    c) both
    d) none

Answers

1	2	3	4	5	6	7	8	9	10
c	d	d	d	b	a	b	b	c	d
11	12	13	14	15	16	17	18	19	20
a	a	a	c	d	b	a	c	b	c

Part B

Two mark questions

21. Define public finance.
22. What is public revenue?
23. Differentiate tax and fee.
24. Write a short note on zero based budget.
25. Give two examples for direct tax.
26. What are the components of GST?
27. What do you mean by public debt?

Part C

Three mark questions:

28. Describe canons of Taxation.
29. Mention any three similarities between public finance and private finance.
30. What are the functions of a modern state?
31. State any three characteristics of taxation.
32. Point out any three differences between direct tax and indirect tax.
33. What is primary deficit?
34. Mention any three methods of redemption of public debt.

Part D

Five mark questions:

35. Explain the scope of public finance.
36. Bring out the merits of indirect taxes over direct taxes.
37. Explain the methods of debt redemption.

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38. State and explain instruments of fiscal policy.
39. Explain the principles of federal finance.
40. Describe the various types of deficit in budget.
41. What are the reasons for the recent growth in public expenditure?

ACTIVITY

Collect various bills and tabulate different rates of GST for different goods and services.

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CHAPTER

10

Environmental Economics

"Environmental problems are really social problems…They begin with the people as the cause and end with people as victims".
–Sir Edmund Hillary

Learning Objectives

1. To understand the link between economy and environment;
2. To describe the various types of environmental pollution and their effects; and,
3. To understand the importance of sustainable development

10.1 Introduction

Environmental economics (EE) is the study of interactions between human economic activity and the natural environment. EE is the subset of economics that is concerned with the efficient allocation of environmental resources. The environment provides both a direct value as well as raw material intended for economic activity, thus making the environment and the economy interdependent.

EE takes into consideration issues such as the conservation and valuation of natural resources, pollution control, waste management and recycling. Since resources – whether human, natural, or monetary –are finite, these public policies are most effective only when they achieve the maximum possible benefit in the most efficient way.



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The key objective of EE is to identify those particular tools or policy alternatives that will move the market towards the most efficient allocation of natural resources.

10.2 Meaning of Environment

The term environment has been derived from a French word "Environia" means to surround. Environment means "all the conditions, circumstances, and influences surrounding and affecting the development of an organism or group of organisms". It also means that the complex of physical, chemical and biotic factors that act upon an organism or an ecological community ultimately determine its form and survival.

Meaning of Environmental Economics

It is a different branch of economics that recognizes the value of both the environment and economic activity and makes choices based on those values. The goal is to balance the economic activity and the environmental impacts by taking into account all the costs and benefits. In short, Environmental Economics is an area of economics that studies the financial impact of environmental issues and policies.

Environmental Economics involves theoretical and empirical studies of the economic effects of national or local environmental policies around the world.

10.3 Eco System

An ecosystem includes all living things (plants, animals and organisms) in a given area, interacting with each other, and also with their non-living environments (weather, earth, sun, soil, climate, atmosphere). Ecosystems are the foundations of the Biosphere and they determine the health of the entire earth system.



10.4 Linkage between Economy and Environment

Man's life is interconnected with various other living and non-living things. The life also depends on social, political, ethical, philosophical and other aspects of economic system. In fact, the life of human beings is shaped by his living environment. The relationship between the economy and

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the environment is generally explained in the form of a "**Material Balance Model**" developed by AlenKneese and R.V. Ayres. The model considers the total economic process as a physically balanced flow between inputs and outputs. Inputs are bestowed with physical property of energy which is received from the environment. The interdependence of economics and environment is given in the figure10.1 and flow diagram

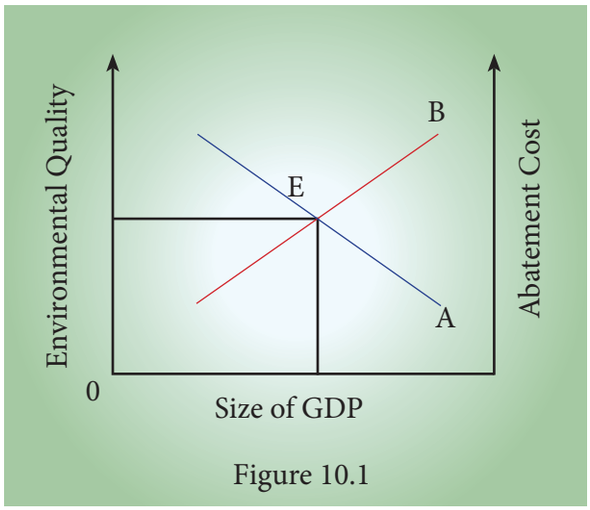
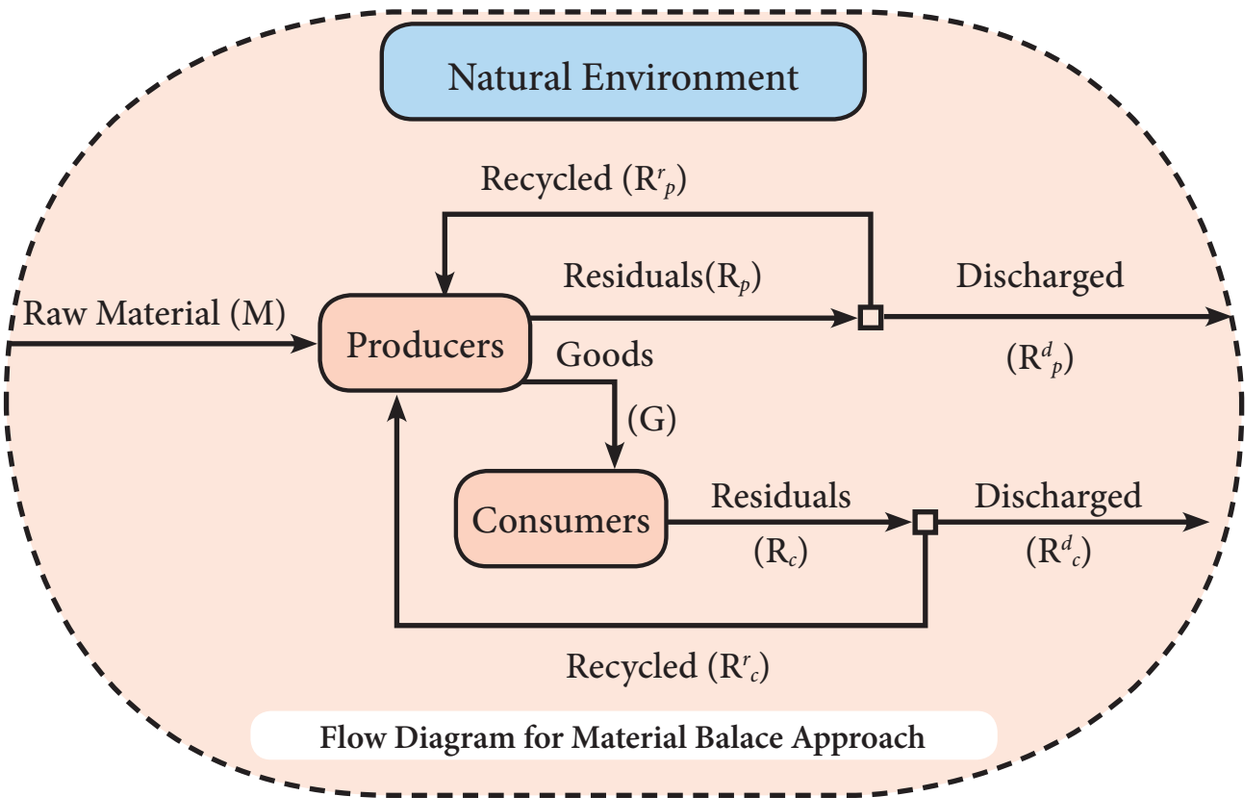


Figure 10.1



Flow Diagram for Material Balace Approach

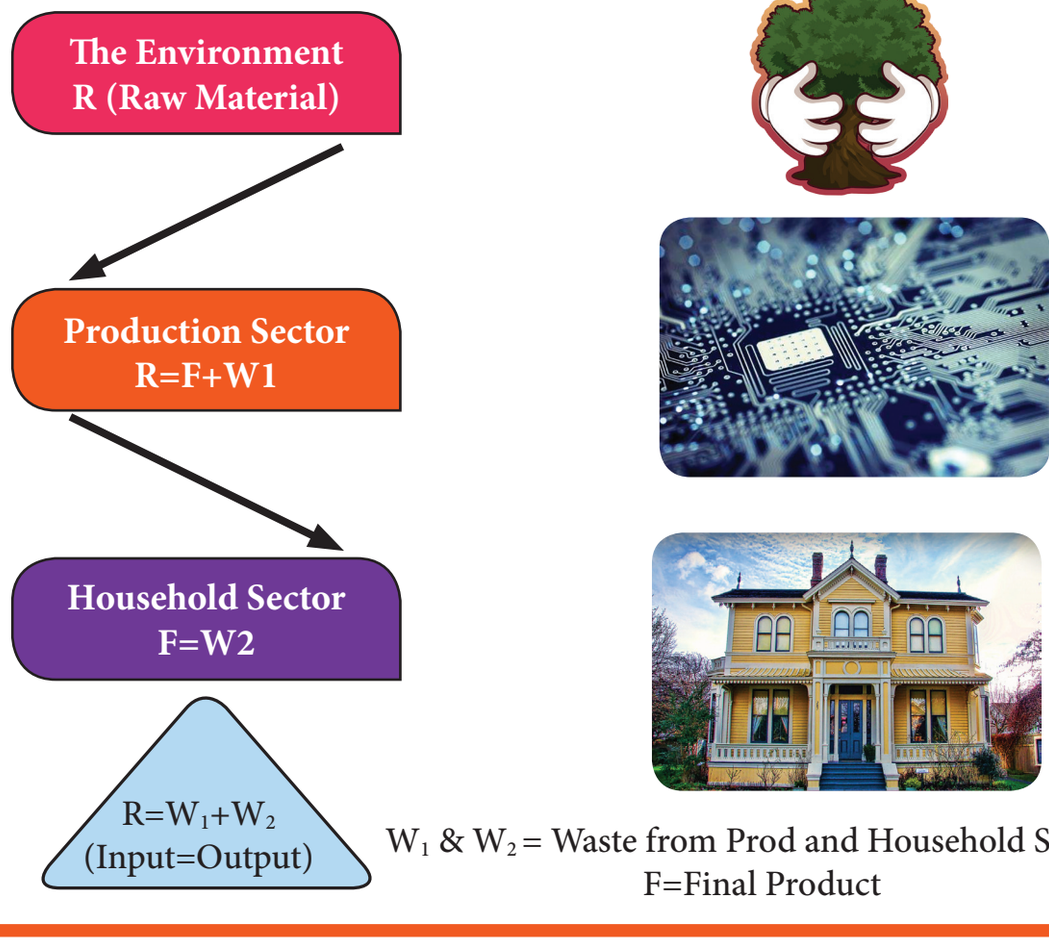
The first law of thermodynamics, i.e. the law of conservation of matter and energy, emphasizes that in any production system "what goes in must come out". This is known as the Material Balance Approach or Material Balance Principle. The material flow diagram implies that mass inputs must equal mass outputs for every process. Moreover, all resources extracted from the environment eventually become unwanted wastes and pollutants. Production of output by firms from inputs resulting in discharge of solid, liquid and gaseous wastes. Similarly, waste results from consumption activities by households. In short, material and energy are drawn from environment, used for production and consumption activities and returned to the environment as wastes. In its simple form the Material Balance Approach can be put in form equation.

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$$M = G-(R_C+ R_P) + (R^r_P + R^r_c) = R^d_p + R^d_c$$

Material and Energy Inflow from Natural World (M)	=	Economic Activities of Goods and Service Production (G) -Consumption and Production Residual Discharges from Consumption and Production activities (R_C+R_P) + Recycles from Production and Consumption (R^r_P + R^r_C)	=	Final Residual Discharge from Production and Consumption into Natural World (R^d_C+ R^d_C)

Economy — Environment Interlinkages
Material Balance Model*



W_1 & W_2 = Waste from Prod and Household Sector, F=Final Product

Is it allright? Environment is the supplier of all forms of resources like renewable and non-renewable, and it is also acting as a sink for cleaning up of wastes. Households and firms are connected to environment, and they are interconnected too. Households and firms depend on nature for resources. Both households and firms send out residuals of consumption and production respectively to nature. Nature has the power to assimilate all forms of waste. But this power is conditional. There is a limit for everything. The earth has reached the

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saturation point and it is unable to cleanup several forms of wastes. Remember, the earth also may not cooperate!

10.5 Environmental Goods

Environmental goods are typically non-market goods, including clear air, clean water, landscape, green transport infrastructure (footpaths, cycle ways, greenways, etc.), public parks, urban parks, rivers, mountains, forests, and beaches. Concerns with environmental goods focus on the effects that the exploitation of ecological systems have on the economy, the well-being of humans and other species, and on the environment.

10.6 Environmental Quality



Environmental quality is a set of properties and characteristics of the environment either generalized or local, as they impinge on human beings and other organisms. It is a measure of the condition of an environment relative to the requirements of one or more species and to any human need. Environmental quality has been continuously declining due to capitalistic mode of functioning.

Environment is a pure public good that can be consumed simultaneously by everyone and from which no one can be excluded. A pure public good is one for which consumption is non-revival and from which it is impossible to exclude a consumer. Pure public goods pose a free-rider problem. As a result, resources are depleted. The contribution of nature to GDP and the depletion of natural resources are not accounted in the present system of National Income Enumeration.

Externalities and the environment

Introduction

In **Environmental Economics**, one of the most important market failures is caused by **negative externalities** arising from production and consumption of goods and services. Externalities are **third party effects** arising from production and consumption of goods and services for which no **appropriate compensation is paid. Externalities occur outside the market** i.e. they affect people not directly involved in the production and consumption of a good or service. They are also known as **spill-over effects**.

10.6.1 Meaning of Externalities

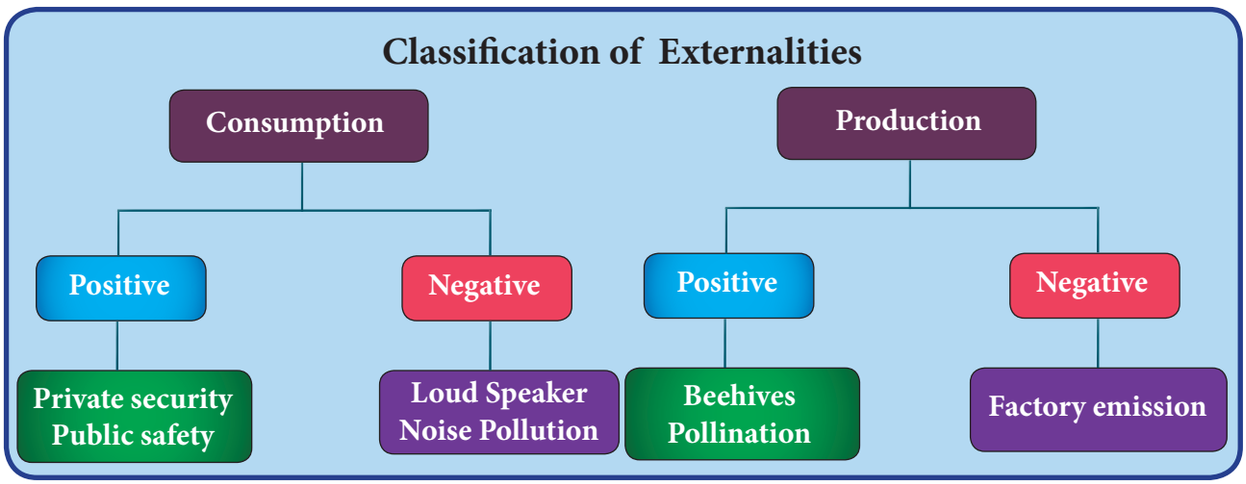
Externalities refer to the external effects or the spillover effects resulting from the act of production or consumption on the third parties. Externalities arise due to interdependence between economic units.

Definitions

Externality may be defined as "the cost or benefit imposed by the consumption and production activities of the individuals on the rest of the society not directly involved in these activities and towards which no payment is made".

The externalities arise from both production and consumption activities and their impact could be beneficial or adverse. Beneficial externalities are called "positive externalities" and adverse ones are called "negative externalities".

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Positive Consumption Externality

When some residents of a locality hire a private security agency to patrol their area, the other residents of the area also benefit from better security without bearing cost.

Negative Consumption Externality

A person smoking cigarette - it gives satisfaction to that person, but this act causes hardship (dissatisfaction) to the non-smokers who are driven to passive smoking.

Positive Production Externality

The ideal location for beehives is orchards (first growing fields). While bees make honey, they also help in the pollination of apple blossoms. The benefits accrue to both producers (honey as well as apple). This is called 'reciprocal untraded interdependency.

Suppose training is given for the workers in a company. If those trained workers leave the company to join some other company, the later company gets the benefit of skilled workers without incurring the cost of training.

Negative Production Externality

Examples of Negative Production Externalities

Negative production externalities include pollution generated by a factory that imposes costs on others

When answering any question on negative externalities consider whether the external costs are significant and if so, whether they can be measured and valued accurately


Air pollution from factories


Pollution from fertilizers


Noise pollution


Industrial waste


Collapsing fish stocks


Methane emissions

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The emissions and effluents of a factory cause air and water pollution. Water becomes contaminated and unfit for drinking e.g. Tanneries. The innocent community bears the external cost for which it is not compensated.

10.7 Pollution

Meaning

Pollution is the introduction of contaminants into the natural environment that causes adverse change, in the form of killing of life, toxicity of environment, damage to ecosystem and aesthetics of our surrounding.

Types of Pollution

1. Air pollution
2. Water pollution
3. Noise pollution
4. Land pollution

10.7.1 Air Pollution



Definition

"Air pollution is the presence of any solid, liquid, or gaseous substance in the atmosphere in such concentration as may be or tend to be injurious to human beings or other living creatures or plants or property or environment".

-The Air (Prevention and Control of Pollution) Act, 1981

Types of Air pollution

- **Indoor Air Pollution:** It refers to toxic contaminants that we encounter in our daily lives in our homes, schools and workplaces. For example, cooking and heating with solid fuels on open fires or traditional stoves results in high levels of indoor air pollution.

- **Outdoor Air Pollution:** It refers to ambient air. The common sources of outdoor air pollution are caused by combustion processes from motor vehicles, solid fuel burning and industry.

Causes of Air Pollution

1. **Vehicle exhaust smoke:** Vehicles smoke happens to release high amounts of Carbon monoxide. Millions of vehicles are operated every day in cities, each one leaving behind its own carbon footprint on the environment.

2. **Fossil fuel based power plants:** Fossil fuels also present a wider scale problem when they are burned for energy in power plants. Chemicals like sulfur dioxide are released during the burning process, which travel straight into the atmosphere. These types of pollutants react with water molecules to yield something known as acid rain.

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3. **Exhaust from Industrial Plants and Factories:** Heavy machineries located inside big factories and industrial plants also emit pollutants into the air.

4. **Construction and Agricultural activities:** Potential impacts arising from the construction debris would include dust particles and gaseous emissions from the construction sites. Likewise, using of ammonia for agriculture is a frequent byproduct that happens to be one of the most dangerous gases affecting air.

5. **Natural Causes:** Earth itself, is one of the biggest polluters through volcanoes, forest fires, and dust storms. They are nature-borne events that dump massive amounts of air pollution into the atmosphere.

6. **Household activities:** Household activities like cooking, heating and lighting, use of various forms of mosquito repellents, pesticides and chemicals for cleaning at home and use of artificial fragrances are some of the sources that contribute to air pollution.

Effects of Air Pollution

1. **Respiratory and heart problems**: It creates several respiratory and heart ailments along with cancer. Children are highly vulnerable and exposed to air pollutants and commonly suffer from pneumonia and asthma.

2. **Global warming**: Increasing temperature in the atmosphere leads to global warming and thereby to increase sea level rise and melting of polar icebergs, displacement and loss of habitat.

3. **Acid rain**: Harmful gases like nitrogen oxides and sulfur oxides are released into the atmosphere during the burning of fossil fuels. Acid rain causes great damage to human beings, animals and crops.

4. **Eutrophication**: Eutrophication is a condition where high amount of nitrogen present in some pollutants which adversely affects fish, plants and animal species.

5. **Effect on Wildlife**: Toxic chemical present in the air can force wildlife species to move to new place and change their habitat.

6. **Depletion of Ozone layer**: Ozone exists in earth's atmosphere and is responsible for protecting humans from harmful ultraviolet (UV) rays. Earth's ozone layer is depleting due to presence of chlorofluorocarbons and hydro chlorofluorocarbons in the atmosphere.

7. **Human Health**: Outdoor air pollution is a major cause of death and disease globally. The health effects range from increased hospital admissions and emergency room visits, to increased risk of premature death. An estimated 4.2 billion premature deaths globally are linked to ambient air pollution.

Every day about 93% of the world's children under the age of 15 (1.8 billion children) breath polluted air that puts their health and development at serious risk – WHO

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Remedial measures to control Air Pollution

1. Establishment of industries away from the towns and cities
2. Increasing the length of the Chimneys in industries
3. Growing more plants and trees
4. Use of non-conventional fuels like Biogas, CNG and LPG.
5. Use of Mass Transit System (Public Transport)

10.7.2 Water Pollution

Definition

"The introduction (directly or indirectly) of substances or energy into the marine environment (including estuaries) results in deleterious effects to living resources, hazards to human health, hindrance to marine activities.

- United Nations, 1971



Types of Water Pollution

i. **Surface water pollution**: Surface water includes natural water found on the earth's surface, like rivers, lakes, lagoons and oceans. Hazardous substances coming into contact with this surface water, dissolving or mixing physically with the water can be called surface water pollution.

ii. **Groundwater pollution**: Groundwater contamination occurs when man-made products such as gasoline, oil and chemicals get into the ground water. In addition, untreated waste from septic tanks, toxic chemicals from underground storage tanks and leaky landfills contaminate groundwater.

iii. **Microbiological pollution**: In many communities around the world, people drink untreated water (straight from a pond,river or stream). Sometimes there is natural pollution caused by micro-organism like viruses and bacteria. This natural pollution causes both aquatic and human illness.

iv. **Oxygen depletion pollution**: When oxygen levels in the water are depleted, relatively harmless aerobic micro-organisms die and anaerobic micro-organisms begin to thrive. Some anaerobic micro-organisms are harmful to people, animals and the environment as they produce harmful toxins such as ammonia and sulfides.

Causes of Water Pollution

Water pollution is caused due to several reasons. Here are a few major causes of water pollution:

1. **Discharge of sewage and waste water**: Sewage, garbage and liquid waste of households, agricultural runoff and effluents from factories are discharged into lakes and rivers. These wastes contain harmful chemicals and toxins which make the water poisonous for aquatic animals and plants.

2. **Dumping of solid wastes**: The dumping of solid wastes and litters in water bodies cause huge problems.

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3. **Discharge of industrial wastes**: Industrial waste contains pollutants like asbestos, lead, mercury, grease oil and petrochemicals, which are extremely harmful to both people and environment.

4. **Oil Spill**: Sea water gets polluted due to oil spilled from ships and tankers while travelling. The spilled oil does not dissolve in water and forms a thick sludge polluting the water.

5. **Acid rain**: Acid rain is pollution of water caused by air pollution. When the acidic particles caused by air pollution in the atmosphere mix with water vapor, it results in acid rain.

6. **Global warming**: Due to global warming, there is an increase in water temperature as a result aquatic plants and animals are affected.

7. **Eutrophication**: Eutrophication is an increased level of nutrients in water bodies. This results in bloom of algae in water. It also depletes the oxygen in water which negatively affects fish and other aquatic animal population.

Effects of Water Pollution

Water pollution adversely affects the health and life of man, animals and plants alike. Polluted water is also harmful for agriculture as it adversely affects the crops and the soil fertility. Pollution of sea water damages the oceanic life. The effects can be catastrophic, depending on the kind of chemicals, concentrations of the pollutants. The effects of water pollution are varied and depend on what chemicals are dumped and in which locations. Many water bodies near urban areas are highly polluted. This is the result of both garbage dumped by individuals and dangerous chemicals legally or illegally dumped by manufacturing industries, health centers and markets.

i. **Death of aquatic animals**: The main problem caused by water pollution is that it kills organisms that depend on these water bodies. Dead fish, crabs, birds and sea gulls, dolphins, and many other animals often wind up on beaches, killed by pollutants in their habitat.

ii. **Disruption of food-chains**: Pollution disrupts the natural food chain as well. Pollutants such as lead and cadmium are eaten by tiny animals. Later, these animals are consumed by fish and the food chain continues disrupted at all higher levels.

iii. **Diseases**: The discharge of untreated and under-treated effluent contributes to severe ecological degradation. The indiscriminate human activities such as open defecation, solid waste dumping, discharge of drainage water are responsible for the pathogenic bacteria water-borne diseases like Hepatitis-A, Typhoid, Malaria, Dysentery, Jaundice, Dengue fever, Viral fever and Worm infections.

iv. **Destruction of Ecosystems**: Ecosystems can be severely destroyed by water pollution. Many areas are now being affected by careless human pollution, and this pollution is coming back to hurt humans in many ways.

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Remedial measures to control Water Pollution

1. Comprehensive water management plan.
2. Construction of proper storm drains and settling ponds.
3. Maintenance of drain line.
4. Effluent and sewage treatment plant.
5. Regular monitoring of water and waste water.
6. Stringent actions towards illegal dumping of waste into the water bodies.

10.7.3 Noise Pollution



Definition

Noise pollution is unwanted or excessive sound that can have deleterious effects on human health and environmental quality. Noise pollution is commonly generated by many factories. It also comes from highway, railway and airplane traffic and from outdoor construction activities.

-Jerry A. Nathanson and Richard E. Berg, 2018

Types of Noise Pollution

i. **Atmospheric Noise**: Atmospheric noise or static is caused by lighting discharges in thunderstorms and other natural electrical disturbances occurring in the atmosphere.

ii. **Industrial Noise**: Industrial noise refers to noise that is created in the factories. Sound becomes noise it becomes unwanted. Heavy industries like ship building, iron and steel have long been associated with Noise Induced Hearing Loss (NIHL).

iii. **Man made Noise**: The main sources of man-made noise pollution are ships, aircraft, seismic exploration, marine construction, drilling and motor boats.

Causes of Noise Pollution

i. **Poor urban planning**: Improper urban planning will cause more nuisances among the city travelers.

ii. **Sounds from motor vehicles**: Sounds from motor vehicles can cause temporary hearing loss.

iii. **Crackers**: Enormous Crackers are used during some occasions. Such activities create a very louder noise to the level of harming the public. Sometimes, they may even cause deafness to children and aged.

iv. **Factory machinery**: The industrial noise caused by continuous operation of mills, machines and pneumatic drills, is unbearable nuisance to the workers.

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Effects of Noise Pollution

a. **Hearing Loss**: Chronic exposure to noise may cause noise-induced hearing loss. Older people are exposed to significant occupational noise and thereby reduced hearing sensitivity.

b. **Damage Physiological and Psychological health**: Unwanted noise can damage physiological and psychological health. For example, annoyance and aggression, hypertension, and high stress levels.

c. **Cardiovascular effects**: High noise levels can contribute to cardiovascular problems and exposure to blood pressure.

d. **Detrimental effect on animals and aquatic life**: Noise can have a detrimental effect on animals, increasing the risk of death.

e. **Effects on wildlife and aquatic animals**: It creates hormone imbalance, chronic stress, panic and escape behavior and injury.

Remedial measures to control Noise Pollution

1. Use of noise barriers
2. Newer roadway for surface transport
3. Traffic control
4. Regulating times for heavy vehicles
5. Installations of noise barriers in the work place
6. Regulation of Loudspeakers

10.7.4 Land Pollution



Definition

The land pollution is defined as, "the degradation of land because of the disposal of waste on the land". Any substance (solid, liquid or gaseous) that is discharged, emitted or deposited in the environment in such a way that it alters the environment causes land pollution

-Protection of the Environment Operations Act 1997

Types of Land Pollution

i. **Solid waste**: It includes all kinds of rubbish like paper, plastic containers, bottles, cans, food, used cars, broken electronic goods, municipal waste and hospital waste.

ii. **Pesticides and Fertilizers**: Many farming activities engage in the application of fertilizers, pesticides and insecticides for higher crop yield which pollute land.

iii. **Deforestation**: Humans depend on trees for many things including life. Trees absorb carbon dioxide from the air and release Oxygen, which is needed for life. Forest helps replenish

soils and help retain nutrients being washed away. Deforestation has led to land pollution.

Causes of Land Pollution

i. **Deforestation and soil erosion**: Deforestation carried out to create dry lands is one of the major concerns. Land that is once converted into a dry or barren land, can never be made fertile again, whatever the magnitude of measures to convert it.

ii. **Agricultural activities**: With growing human and pet animal population, demand for food has increased considerably. Farmers often use highly toxic fertilizers and pesticides to get rid off insects, fungi and bacteria from their crops. However the overuse of these chemicals, results in contamination and poisoning of land.

iii. **Mining activities**: During extraction and mining activities, several land spaces are created beneath the surface.

iv. **Landfills**: Each household produces tones of garbage each year due to changing economic lifestyle of the people. Garbage like plastic, paper, cloth, wood and hospital waste get accumulated. Items that cannot be recycled become a part of the landfills that cause land pollution.

v. **Industrialization**: Due to increasing consumerism more industries were developed which led to deforestation. Research and development paved the way for modern fertilizers and chemicals that were highly toxic and led to soil contamination.

vi. **Construction activities**: Due to urbanization, large amount of construction activities are taking place. This has resulted in large waste articles like wood, metal, bricks, plastic. These are dumped at the outskirts of urban areas that lead to land pollution.

vii. **Nuclear waste**: The leftover radioactive materials, harmful and toxic chemicals affect human health. They are dumped beneath the earth to avoid any casualty.

Effects of Land Pollution

1. **Soil pollution**: Soil pollution is another form of land pollution, where the upper layer of the soil is damaged. This is caused by the overuse of chemical fertilizers, and pesticides. This leads to loss of fertile land. Pesticides kill not only pests and also human beings.

2. **Health Impact:** The land when contaminated with toxic chemicals and pesticides lead to problems of skin cancer and human respiratory system. The toxic chemicals can reach our body through foods and vegetables.

3. **Cause for Air pollution**: Landfills and waste dumping lead to air pollution. The abnormal toxic substances spread in the atmosphere cause and transmit respiratory diseases among the masses.

4. **Effect on wildlife**: The animal kingdom has suffered mostly in the past decades. They face a serious threat with regards to loss of habitat and natural environment. The constant human activity on land is leaving

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it polluted, forcing these species to move farther away. Sometimes several species are pushed to the verge of extinction or disappear due to no conducive environment.

Remedial measures to control Land Pollution

1. Making people aware about the concept of a Reduce, Recycle and Reuse
2. Buying biodegradable products
3. Minimizing the usage of pesticides
4. Shifting cultivation
5. Disposing unwanted garbage properly either by burning or by burying under the soil.
6. Minimizing the usage of plastics.

10.8 Global Warming



Global warming is the current increase in temperature of the Earth's surface (both land and water) as well as its atmosphere. Average temperatures around the world have risen by 0.75°C (1.4°F) over the last 100 years. About two thirds of this increase has occurred since 1975. Carbon dioxide, methane, Chlorofluoro Carbon, nitrous oxides are the green house gases warming the earth's surface. So it is also called green house effect. The CO2 is the most important of the green house gases contributing to 50% of global warming. The burning of fossil fuel, and other biomass, deforestation result in CO2. In the past, when the Earth experienced increases in temperature it was the result of natural causes but today it is being caused by human activities.

Global warming adversely affects agriculture, horticulture and eco system. Reduced rainfall, higher temperature and increased pest/weed growth hamper farming. Threats to health arise due to increase in disease carrying vectors such as mosquitoes resulting in malaria, dengue fever, encephalitis and yellow fever.

An increase in the global average surface air temperature of such magnitude will bring about alarming changes in rainfall patterns and other climatic conditions, resulting in serious ecological disequilibrium.

10.9 Climate Change

The climate change refers to seasonal changes over a long period with respect to the growing accumulation of greenhouse gases in the atmosphere. Recent studies have shown that human activities since the beginning of the industrial revolution,

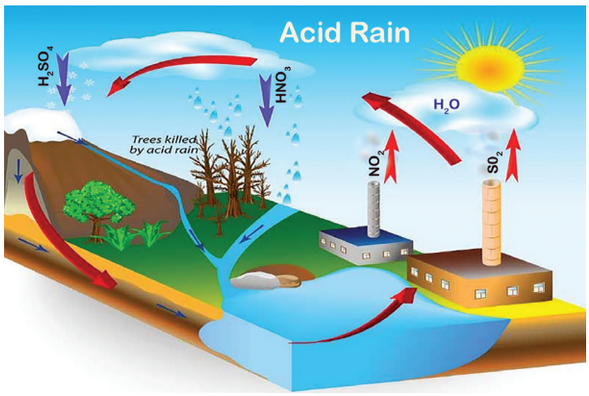
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have contributed to an increase in the concentration of carbon dioxide in the atmosphere by as much as 40%, from about 280 parts per million in the pre-industrial period, to 402 parts per million in 2016, which in turn has led to global warming.

Several parts of the world have already experienced the warming of coastal waters, high temperatures, a marked change in rainfall patterns, and an increased intensity and frequency of storms. Sea levels and temperatures are expected to be rising.

10.10 Acid Rain

Acid rain is one of the consequences of air pollution. It occurs when emissions from factories, cars or heating boilers contact with the water in the atmosphere. These emissions contain nitrogen oxides, sulphur dioxide and sulphur trioxide



which when mixed with water becomes sulfurous acid, nitric acid and sulfuric acid. This process also occurs by nature through volcanic eruptions. It can have harmful effects on plants, aquatic animals and infrastructure.

Sources of E-Waste:

Home:
- PC
- Television
- Radio
- Cell phones
- Washing machine
- Microwave oven
- CD player
- Fan
- Electric Iron

Hospitals:
- PC
- Monitors
- ECG device
- Microscope
- Incubator

Government:
- PC
- FAX machine
- Xerox machine
- Scanner
- Fan
- Tube lights
- Air conditions

Private Sectors (Restaurants, Industries)
- PC
- Boilers
- Mixer
- Signal Generators
- Incubator

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10.11 e-Wastes



Electronic waste which is commonly referred as "e-waste" is the new byproduct of the Info Tech society. It is a physical waste in the form of old discarded, end of life electronics. It includes a broad and growing range of electronic devices from large household appliances such as refrigerators, air conditioners, cellular phones, computers and other electronic goods". Similarly, e-waste can be defined as the result when consumer, business and household devices are disposed or sent for re-cycling (example, television, computers, audio-equipments, VCR, DVD, telephone, Fax, Xerox machines, wireless devices, video games, other household electronic equipments).

Solid Waste

Solid Waste is basically discharge of useless and unwarranted materials as a result of human activity. Most commonly, they are composed of solids, semisolids or liquids. Solid wastes consist of the discards of households, hospital refuse, dead animals, debris from construction site, ashes, agricultural wastes and industrial wastes etc. When waste is not removed from the streets and public places in time it poses severe public-health and hygiene hazards.

10.12 Sustainable Development

Meaning

Sustainable development is concerned with the welfare of not only present generation but also future generation. It aims at not only satisfying the luxury wants of the upper class i.e. the rich but also the basic necessities of the poor like food, sanitation, health care, education etc. The present generation should not exhaust the resources left by the past generation, but it should leave the same for the use of future generation. This is called inter – generational equity.

Definitions

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs"

-World Commission on Environment and Development, 1987-

"The alternative approach (to sustainable development) is to focus on natural capital assets and suggest that they should not decline through time."

-Pearce, Markandya and Barbier, 1989-

10.12.1 Sustainable Development Goals (SDGs)

It is crucial to harmonize three core elements such as **economic** growth, **social** inclusion and **environmental** protection. A set of 17 goals for the World's future can be achieved before 2030 with

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three unanimous principles fixed by United Nations such as Universality, Integration and Transformation.

1. End Poverty in all its forms everywhere
2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture
3. Ensure healthy lives and promote well-being for all at all ages
4. Ensure inclusive and quality education for all and promote lifelong learning
5. Achieve gender equality and empower women and girls
6. Ensure access to water and sanitation for all
7. Ensure access to affordable, reliable, sustainable and modern energy for all
8. Promote inclusive and sustainable economic growth, employment and decent work for all
9. Build resilient infrastructure, promote sustainable industrialization and foster innovation.
10. Reduce inequality within and among countries
11. Make cities inclusive, safe, resilient and sustainable
12. Ensure sustainable consumption and production pattern
13. Take urgent action to combat climate change and its impacts
14. Conserve and sustainably use the oceans, seas and marine resources

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15. Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss
16. Promote just, peaceful and inclusive societies
17. Revitalize the global partnership for sustainable development

10.13 Green Initiatives



Today, number of organizations, businesses and people across the globe that are striving for sustainability and more eco-friendly lifestyles is increasing. They are passionate towards protecting the Earth – the only life support system we have. Hence, we should bring about change through political lobbying, citizen action and consumer pressure. And we should take peaceful direct action to protect this fragile planet and promote the solutions for a green and peaceful future. Since the global warming is a worldwide problem, the polluters, namely developed countries, should be made to pay for the pollution control efforts.

10.14 Organic Farming

Organic farming is a system of agricultural production which relies on animal manure, organic waste, crop rotation, legumes and biological pest control. It avoids use of synthetic fertilizer, pesticides and livestock additives. Organic inputs have certain benefits, such as enriching soil for microbes.

Organic production is a holistic system designed to optimize the productivity and fitness of diverse communities within the agro-ecosystem, including soil organisms, plants, livestock and people. The principal goal of organic production is to develop enterprises that are sustainable and harmonious with environment. The general principles of organic farming are:

1. Protect the environment, minimize soil degradation and erosion, decrease pollution, optimize biological productivity and promote a sound state of health.
2. Maintain long-term soil fertility by optimizing conditions for biological activity within the soil
3. Maintain biological diversity within the system
4. Recycle materials and resources to the greatest extent possible within the enterprise

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VERMI COMPOST



GREEN LEAF MANURES



CROP ROTATION



MANURES

ORGANIC FARMING



BIOLOGICAL MANAGEMENT



BIOFERTILIZERS



ANIMAL HUSBANDRY

Alkali Farming

Nearly 50 percent of the irrigated land in the arid and semi-arid regions has some degree of soil salinization problems. The occurrence of accumulation of excess salt/ acid in the root zone, results in a partial or complete loss of soil productivity and such soil is defined as 'Problem (alkali, saline & acid) Soils' and exist mainly in arid and semi-arid regions.

The alkali soils are predominantly located in the Indo-Gangetic plains encompassing States of Punjab, Haryana, Uttar Pradesh, Bihar and partly in States like, Chattisgarh, Rajasthan, Andhra Pradesh, Gujarat, Maharashtra, Karnataka, Andhra Pradesh, Madhya Pradesh and Tamil Nadu.

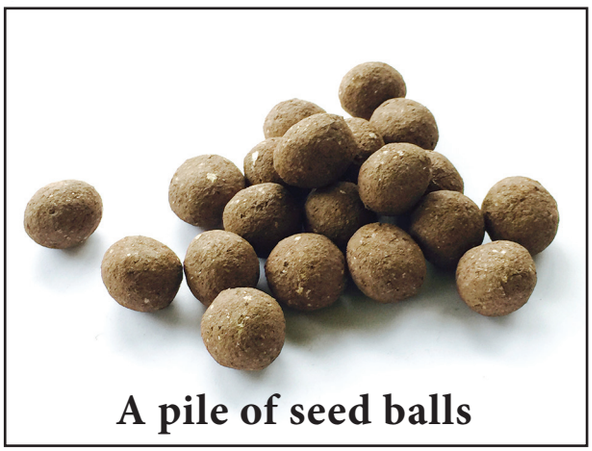
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5. Provide attentive care that promotes the health and meets the behavioural needs of livestock
6. Prepare organic products, emphasizing careful processing, and handling methods in order to maintain the organic integrity and vital qualities of the products at all stages of production.
7. Rely on renewable resources in locally organized agricultural systems.

10.15 Tree Plantation

Trees contribute to their environment by providing oxygen, improving air quality, climate amelioration, conserving water, preserving soil and supporting wildlife. During the process of photosynthesis, trees take in carbon dioxide and produce the oxygen we breathe. So trees are considered to be the lungs of the earth. Natural forests and tree plantations improve the water cycle in diminishing runoff and improving the replenishment of the water table.

10.16 Seed Ball



A pile of seed balls



A seed ball (or seed bomb) is a seed that has been wrapped in soil materials, usually a mixture of clay and compost, and then dried. Essentially, the seed is 'pre-planted' and can be sown by depositing the seed ball anywhere suitable for the species, keeping the seed safely until the proper germination window arises. Seed balls are an easy and sustainable way to cultivate plants that provide a larger window of time when the sowing can occur.

Summary

The introductory part of this chapter deals with human activity and natural environment. The concept of environmental economics is the subset of economics that is concerned with the efficient allocation of environmental resources. Further, it discusses the linkage between economy and environment with the help of material balance model developed by Alen Kneese and R.V. Ayres.

The second part is concerned with different type's pollutions like air, water, noise and land pollution and its cause, effects and various reduction strategies. Again, it dealt with the important aspects of global warming, climate change, acid rain, e-waste and solid waste which are responsible for environmental degradation. Finally, it also reflects the importance of sustainable development and

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its goals which are striving to achieve through mass programs like green initiatives, organic farming, tree plantation, seed ball and alkali farming. However, today the problems are mounting in the form of industrial pollution, atmospheric emission, soil erosion and land degradation, deforestation and irreversible loss of biodiversity due to increasing greed of the rich people. The underlying cause of environmental degradation in countries like India is failure of market and institutions, a factor which has not been adequately focused on corrective actions. Also, pollutions are cross-border problems. Unless all the countries simultaneously attempt to overcome the problem, global warming cannot be stopped. The rich countries which have been the cause for global warming, should be brought in to pay for the damages caused by them.

Glossary

- **Environment :** Surroundings in which an organization operates, including air, water, land, natural resources, flora, fauna, humans, and their interrelations.
- **Ecology :** The relationship of living things to one another and their environment, or the study of such relationship.
- **Eco System :** The interacting system of a biological community and its nonliving environmental surroundings.
- **Externalities :** A situation in which an individual or firm takes an action but does not bear all the costs (negative externality) or receive all the benefits (positive externality) costs or benefits that fall on third parties.
- **Pollution :** Residual discharges of contaminants in to the natural environment to the air or water.
- **Air Pollution :** The presence of contaminant or pollutant substances in the air that do not disperse properly and interfere with human health or welfare or produce harmful environmental effects.
- **Water Pollution :** The presence of harmful or objectionable material to damage water quality.
- **Land Pollution :** Land pollution is the deposition of solid or liquid waste materials on land or underground in a manner that can contaminate the soil and groundwater, threaten public health and cause unpleasant conditions and nuisances.
- **Global warming :** The increase in temperature of the Earth's surface, due to green house gases.
- **Climate Change :** Climate change refers to any significant change in temperature, precipitation, or wind patterns that occur over several decades or longer.
- **Acid Rain :** The result of sulphur dioxide (SO2) and nitrogen oxides (NOx) reacting in the atmosphere with water and returning to earth as rain, fog or snow.
- **Solid Wastes :** Non-liquid, non-soluble materials, ranging from municipal garbage to industrial wastes that contain complex, and hazardous, substances. Solid wastes include sewage sludge, agricultural refuse, demolition wastes, and mining residues.
- **Sustainable Development :** Development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs.
- **Organic Farming :** System of farming which uses animal manure, organic waste and legumes reducing, the use of chemical fertilizers and pesticides.

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MODEL QUESTIONS

Part – A

Multiple choice questions

1. The term environment has been derived from a French word----------.
   a. Environ
   b. Environs
   c. Environia
   d. Envir

2. The word biotic means environment
   a. living
   b. non-living
   c. physical
   d. None of the above

3. Ecosystem is the smallest unit of
   a. Ionosphere
   b. Lithosphere
   c. Biosphere
   d. Mesosphere

4. Who developed Material Balance Models?
   a. Thomas and Picardy
   b. AlenKneese and R.V. Ayres
   c. Joan Robinson and J.M. Keynes
   d. Joseph Stiglitz and Edward Chamberlin

5. Environmental goods are ----------
   a. Market goods
   b. Non-market goods
   c. Both
   d. None of the above

6. In a pure public good, consumption is ----------
   a. Rival
   b. Non-rival
   c. Both
   d. None of the above

7. One of the most important market failures is caused by ----------
   a. Positive externalities
   b. Negative externalities
   c. Both
   d. None of the above

8. The common source of outdoor air pollution is caused by combustion processes from the following----------
   a. Heating and cooking
   b. Traditional stoves
   c. Motor vehicles
   d. All the above

9. The major contributor of Carbon monoxide is
   a. Automobiles
   b. Industrial process
   c. Stationary fuel combustion
   d. None of the above

10. Which one of the following causes global warming?
    a. Earth gravitation force
    b. Oxygen
    c. Centripetal force
    d. Increasing temperature

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11. Which of the following is responsible for protecting humans from harmful ultraviolet rays?
    a. UV-A
    b. UV-C
    c. Ozone layer
    d. None of the above

12. Global warming also refers to as
    a. Ecological change
    b. Climate Change
    c. Atmosphere change
    d. None of the above

13. Which of the following is the anticipated effect of Global warming?
    a. Rising sea levels
    b. Changing precipitation
    c. Expansion of deserts
    d. All of the above

14. The process of nutrient enrichment is termed as
    a. Eutrophication
    b. Limiting nutrients
    c. Enrichment
    d. Schistosomiasis

15. Primary cause of Soil pollution is ----------
    a. Pest control measures
    b. Land reclamation
    c. Agricultural runoff
    d. Chemical fertilizer

16. Which of the following is main cause for deforestation?
    a. Timber harvesting industry
    b. Natural afforestation
    c. Soil stabilization
    d. Climate stabilization

17. Electronic waste is commonly referred as ----------
    a. solid waste
    b. composite waste
    c. e-waste
    d. hospital waste

18. Acid rain is one of the consequences of ----------
    a. Air pollution
    b. Water Pollution
    c. Land pollution
    d. Noise pollution

19. Sustainable Development Goals and targets are to be achieved by -------
    a. 2020
    b. 2025
    c. 2030
    d. 2050

20. Alkali soils are predominantly located in the ---------- plains?
    a. Indus-Ganga
    b. North-Indian
    c. Gangetic plains
    d. All the above

Answers

1	2	3	4	5	6	7	8	9	10
c	a	c	b	b	b	b	b	a	d
11	12	13	14	15	16	17	18	19	20
c	d	b	a	d	a	c	a	c	d

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Part - B

Answer the following questions in one or two sentences

21. State the meaning of environment.
22. What do you mean by ecosystem?
23. Mention the countries where per capita carbondioxide emission is the highest in the world.
24. What are environmental goods? Give examples.
25. What are the remedial measures to control noise pollution?
26. Define Global warming.
27. Specify the meaning of seed ball.

Part-C

Answer the following questions in one paragraph.

28. Brief the linkage between economy and environment.
29. Specify the meaning of material balance principle.
30. Explain different types of air pollution.
31. What are the causes of water pollution?
32. State the meaning of e-waste.
33. What is land pollution? Mention the causes of land pollution.
34. Write a note on a) Climate change and b) Acid rain

Part-D

Answer the following questions in about a page.

35. Briefly explain the relationship between GDP growth and the quality of environment.
36. Explain the concepts of externality and its classification
37. Explain the importance of sustainable development and its goals.

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ACTIVITY

Who should pay more for correcting the present trend of damaging the environment? Developed countries or developing countries? Why?

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CHAPTER

11

Economics of Development and Planning

A good plan may fail due to faulty implementation. But a faulty plan cannot succeed through good implementation.

"Plan your work for today and every day, then work your plan."

-Margaret Thatcher

Learning Objectives

1. To understand the process, features and determinants of economic development.
2. To study the case for and against planning and to compare the various types of planning.
3. To describe the functions of NITI Aayog.

11.1 Meaning of Development and Underdevelopment

Introduction

The concept "development" refers to the structural changes towards betterment. Until the World War II, interest was rarely shown on the problems of the present day third World Countries. After the Second World War, economists started devoting their attention towards analyzing the problems of underdeveloped countries and formulating theories and models of development and growth. The Under Developed Countries (UDCs) were once the colonies of England and other European countries. After becoming free and independent, there was an awakening to march towards economic development.

Approaches to Economic Development

There are two main approaches to the concept of development viz i) the traditional approach and ii) the new welfare oriented approach.

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1. Traditional Approach: The traditional approach defines development strictly in economic terms. The increase in GNP is accompanied by decline in share of agriculture in output and employment while those of manufacturing and service sectors increase. It emphasizes the importance of industrialization. It was assumed that growth in GNP per capita would trickle down to people at the bottom.

2. New Welfare oriented Approach: During 1970s, economic development was redefined in terms of reduction of poverty, 'inequality' and unemployment within the context of a growing economy. In this phase, 'Redistribution with Growth' became the popular slogan.

To quote Michael P. Todaro, "Development must, therefore, be conceived as a multidimensional process involving major changes in social structures, popular attitudes and national institutions as well as the acceleration of growth, the reduction of inequality and the eradication of absolute poverty".

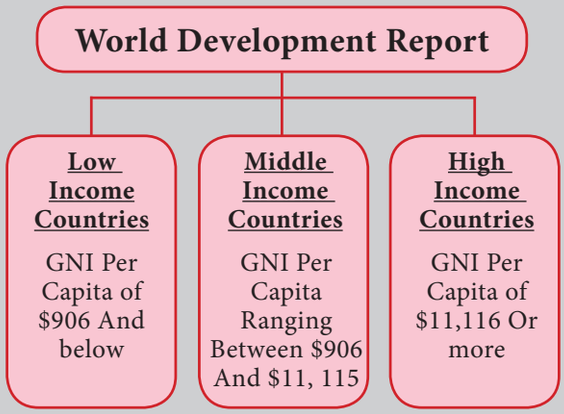
Underdevelopment

The UDCs are characterized by predominance of primary sector i.e. agriculture, low per capita income, widespread poverty, wide inequality in distribution of income and wealth, over population, low rate of capital formation, high rate of unemployment, technological backwardness, dualism etc.

Features of an Underdeveloped Economy

Introduction

- The term 'underdeveloped country' is relative.
- The World bank in its world Development Report classified various countries on the basis of Gross National Income (GNI) Per Capita.



Meaning of Underdevelopment

The term underdevelopment refers to that state of an economy where levels of living of masses are extremely low due to very low levels of Percapita income, resulting from low levels of productivity and high growth rate of population.

11.2 Economic Growth Vs Economic Development

1. State of Development

Generally speaking, economic development refers to the problems of underdeveloped countries and economic growth to those of developed countries.

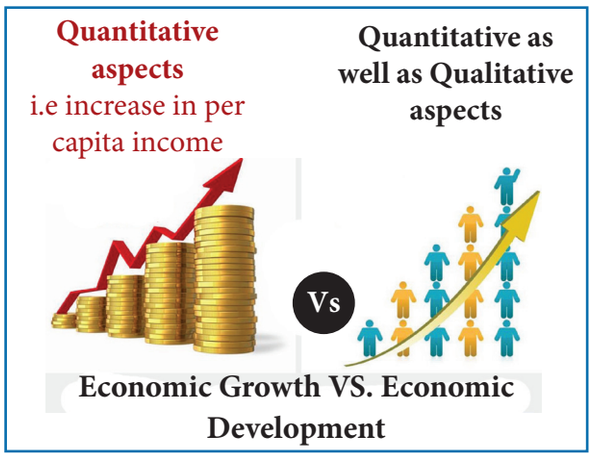
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2. Nature and Level of Change

Development is a discontinuous and spontaneous change while growth is a gradual and steady change in the long run.

3. Scope of Change

Growth simply means more output. But development refers to efficiency in production i.e. output per unit of input. It also implies changes in composition of output and in allocation of resources, reduction of poverty, inequality and unemployment.



Economic Growth VS. Economic Development

4. Extent of change

Economic development (wider concept than economic growth) is taken to mean growth plus structural change.

Differences between Economic Growth and Economic Development

Economic Growth	Economic Development
Deals with the problems of Developed countries	Deals with the problems of UDCs
Change is gradual and steady	Change is discontinuous and spontaneous
Means more output	Means not only more output but also its composition
Concerns Quantitative aspects i.e. increase in per capita income	Quantitative as well as Qualitative
Narrow	Wider concept Development = Growth + Change

11.3 Measurement of Economic Development

Economic development is measured on the basis of four criteria

- **Gross National Product (GNP):** GNP is the total market value of all final goods and services produced within a nation in a particular year, plus income earned by its citizens (including income of those located abroad), minus income of non-residents located in that country. GNP is one measure of the economic condition of a country, under the assumption that a higher GNP leads to a higher quality of living, all other things being equal.

- **GNP per capita:** This relates to increase in the per capita real income of the economy over the long period. This indicator of economic growth

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emphasizes that for economic development the rate of increase in real per capita income should be higher than the growth rate of population.

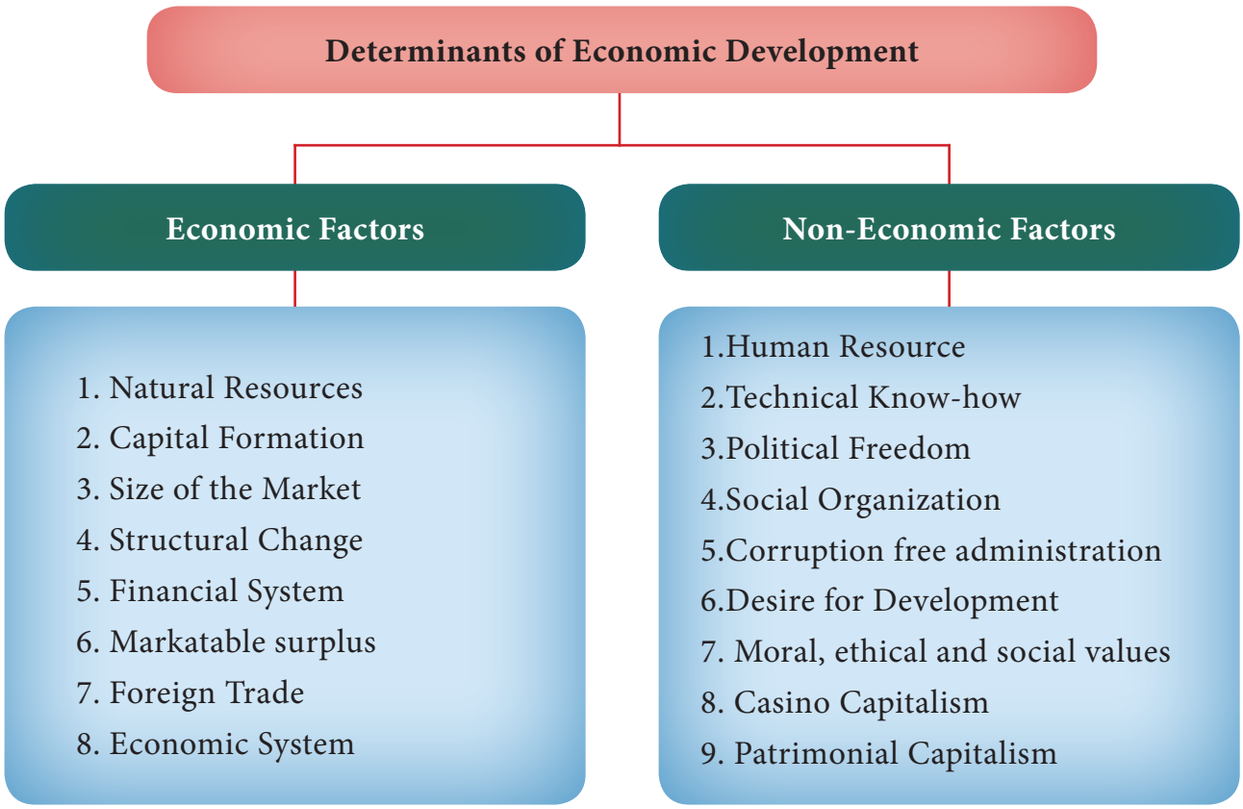
- **Welfare:** Economic development is regarded as a process whereby there is an increase in the consumption of goods and services by individuals. From the welfare perspective, economic development is defined as a sustained improvement in health, literacy and standard of living.

- **Social Indicators:** Social indicators are normally referred to as basic and collective needs of the people. The direct provision of basic needs such as health, education, food, water, sanitation and housing facilities check social backwardness.

11.4 Determinants of Economic Development

Economic development is not determined by any single factor. Economic development depends on Economic, Social, Political and Religious factors. We can simply classify it into Economic and Non-economic factors

11.5 Economic and Non-Economic Factors



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11.5.1. Economic Factors

1. **Natural Resources:** The principal factor affecting the development of an economy is the availability of natural resources. The existence of natural resources in abundance is essential for development. A country deficient in natural resources may not be in a position to develop rapidly. But a country like Japan lacking natural resources imports them and achieves faster rate of economic development with the help of technology. India with larger resources is poor.

2. **Capital Formation:** Capital formation is the main key to economic growth. Capital formation refers to the net addition to the existing stock of capital goods which are either tangible like plants and machinery or intangible like health, education and research. Capital formation helps to increase productivity of labour and thereby production and income. It facilitates adoption of advanced techniques of production. It leads to better utilization of natural resources, industrialization and expansion of markets which are essential for economic progress.

3. **Size of the Market:** Large size of the market would stimulate production, increase employment and raise the National per capita income. That is why developed countries expand their market to other countries through WTO.

4. **Structural Change:** Structural change refers to change in the occupational structure of the economy. Any economy of the country is generally divided into three basic sectors: Primary sector such as agricultural, animal husbandry, forestry, etc; Secondary sector such as industrial production, constructions and Tertiary sector such as trade, banking and commerce. Any economy which is predominantly agricultural tends to remain backward.

5. **Financial System:** Financial system implies the existence of an efficient and organized banking system in the country. There should be an organized money market to facilitate easy availability of capital.

6. **Marketable Surplus:** Marketable surplus refers to the total amount of farm output cultivated by farmers over and above their family consumption needs. This is a surplus that can be sold in the market for earning income. It raises the purchasing power, employment and output in other sectors of the economy. The country as a result will develop because of increase in national income.

7. **Foreign Trade:** The country which enjoys favorable balance of trade and terms of trade is always developed. It has huge forex reserves and stable exchange rate.

8. **Economic System:** The countries which adopt free market mechanism (laissez faire) enjoy better growth rate compared to controlled economies. It may be true for some countries, but not for every country.

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11.5.2. Non- Economic Factors

'Economic Development has much to do with human endowments, social attitudes, political conditions and historical accidents. Capital is a necessary but not a sufficient condition of progress. – Ragnar Nurkse.

1. **Human Resources:** Human resource is named as human capital because of its power to increase productivity and thereby national income. There is a circular relationship between human development and economic growth. A healthy, educated and skilled labour force is the most important productive asset. Human capital formation is the process of increasing knowledge, skills and the productive capacity of people. It includes expenditure on health, education and social services. If labour is efficient and skilled, its capacity to contribute to growth will be high. For example Japan and China.

2. **Technical Know-how:** As the scientific and technological knowledge advances, more and more sophisticated techniques steadily raise the productivity levels in all sectors. Schumpeter attributed the cause for economic development to innovation.

3. **Political Freedom:** The process of development is linked with the political freedom. Dadabhai Naoroji explained in his classic work 'Poverty and Un-British Rule in India' that the drain of wealth from India under the British rule was the major cause of the increase in poverty in India.

4. **Social Organization:** People show interest in the development activity only when they feel that the fruits of development will be fairly distributed. Mass participation in development programs is a pre-condition for accelerating the development process. Whenever the defective social organization allows some groups to appropriate the benefits of growth, majority of the poor people do not participate in the process of development. This is called crony capitalism.

5. **Corruption free administration:** Corruption is a negative factor in the growth process. Unless the countries root-out corruption in their administrative system, the crony capitalists and traders will continue to exploit national resources. The tax evasion tends to breed corruption and hamper economic progress.

6. **Desire for development:** The pace of economic growth in any country depends to a great extent on people's desire for development. If in some country, the level of consciousness is low and the general mass of people has accepted poverty as its fate, then there will be little scope for development.

7. **Moral, ethical and social values:** These determine the efficiency of the market, according to Douglas C. North. If people are not honest, market cannot function.

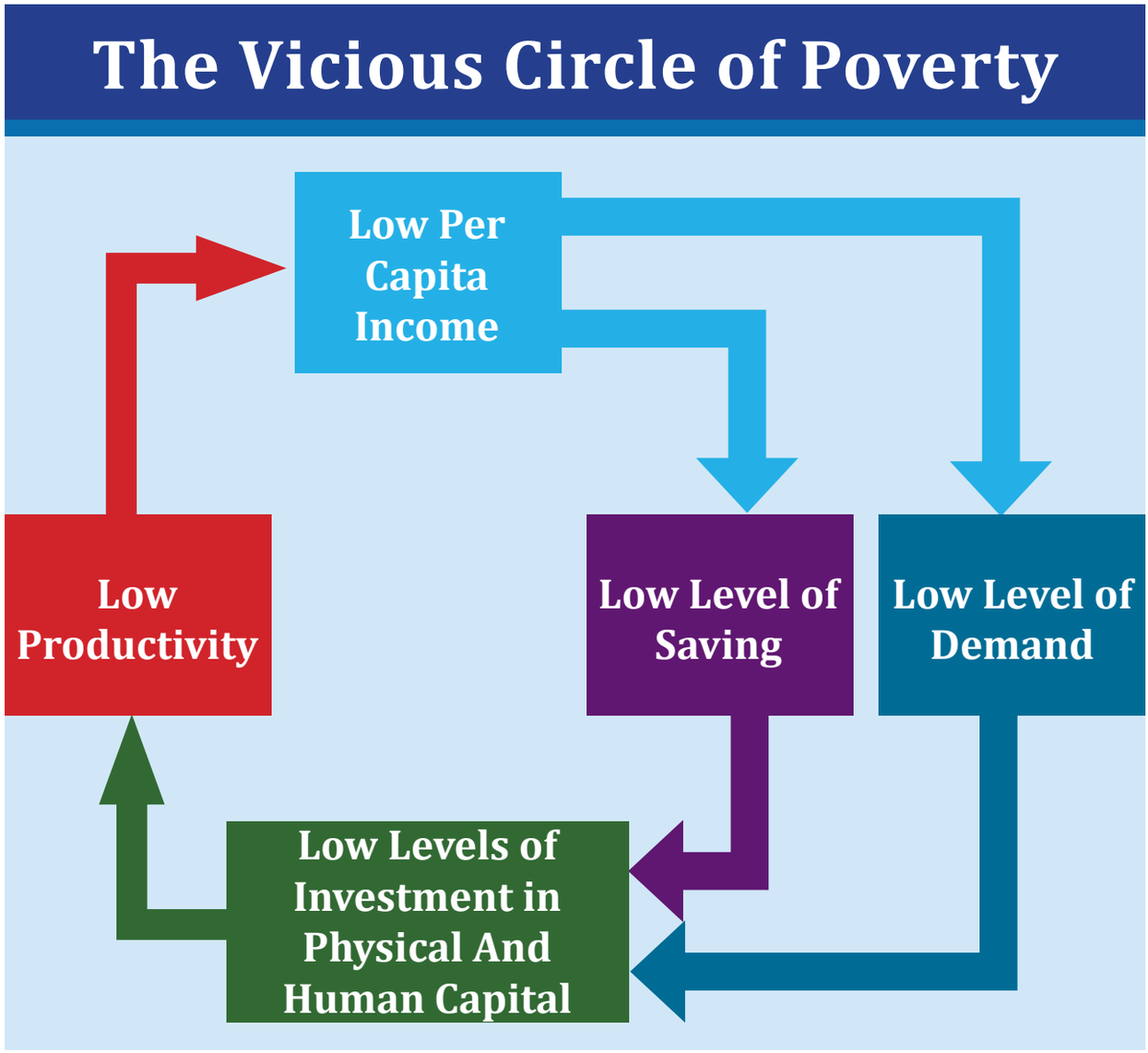
8. Casino Capitalism : If People spend larger propotion of their income and time on entertainment liquor and other illegal activities, productive activities

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may suffer, according to Thomas Piketty.

9. Patrimonial Capitalism : If the assets are simply passed on to children from their parents, the children would not work hard, because the children do not know the value of the assets. Hence productivity will be low as per Thomas Piketty.

11.6 Vicious Circle of Poverty



There are circular relationships known as the 'vicious circles of poverty' that tend to perpetuate the low level of development in Less Developed Countries (LDCs). Nurkse explains the idea in these words: "It implies a circular constellation of forces tending to act and react upon one another in such a way as to keep a poor country in a state of poverty. For example, a poor man may not have enough to eat; being underfed, his health may be weak; being physically weak, his working capacity

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is low, which means that he is poor, which in turn means that he will not have enough to eat and so on. A situation of this sort relating to a country as a whole can be summed up in the proposition: "A country is poor because the country is poor".

The vicious circle of poverty operates both on the demand side and the supply side.

On the supply side, the low level of real income means low savings. The low level of saving leads to low investment and to deficiency of capital. The deficiency of capital, in turn, leads to low levels of productivity and back to low income. Thus the vicious circle is complete from the supply side.

The demand-side of the vicious circle is that the low level of real income leads to a low level of demand which, in turn, leads to a low rate of investment and hence back to deficiency of capital, low productivity and low income.

11.6.1. Breaking the Vicious Circle of Poverty

The vicious circle of poverty is associated with low rate of saving and investment on the supply side. In UDCs the rate of investment and capital formation can be stepped up without reduction in consumption. For this, the marginal rate of savings is to be greater than average rate of savings.

To break the vicious circle on the demand side, Nurkse suggested the strategy of balanced growth. If investment is made in several industries simultaneously the workers employed in various industries will become consumers of each other's products and will create demand for one another. The balanced growth i.e. simultaneous investment in large number of industries creates mutual demand. Thus, through the strategy of balanced growth, vicious circle of poverty operating on the demand side of capital formation can be broken.

11.7 Planning

Meaning

Planning is a technique, a means to an end, the end being the realization of certain pre-determined and well-defined aims and objectives laid down by a central planning authority. The end may be to achieve economic, social, political or military objectives.

Definitions

Economic Planning is "collective control or suppression of private activities of production and exchange".

-Robbins-

"Economic Planning in the widest sense is the deliberate direction by persons in-charge of large resources of economic activity towards chosen ends".

Dalton-

11.7.1. Economic Planning in India

Consists of economic decisions, schemes formed to meet certain pre-determined economic objectives and

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a road map of directions to achieve specific goals within specific period of time. The current thinking of economic planning is fairly new, somewhat rooted in Marxist socialism. In the 20th century, intellectuals, theorists, thinkers from Europe put forward the idea of state involvement to stop capitalism and the inequality of society.

Soviet Union adopted economic planning for the first time in 1928 that enabled the country to turn into an industrial superpower. The idea of economic planning was strengthened during the Great Depression in 1930s. The outbreak of the World War II also required adequate and suitable planning of economic resources for the effective management after the effects of post war economy.

After Independence, in 1948, a declaration of industrial policy was announced. The policy suggested the creation of a National Planning Commission and the elaboration of the policy of a mixed economic system. On January 26, 1950, the Constitution came into force. In logical order, the Planning Commission was created on March 15, 1950 and the plan era began on April 1, 1951 with the launch of the first five year plan (1951-56). The evolution of planning in India is stated below:

1. **Sir M. Vishveshwarayya (1934):** a prominent engineer and politician made his first attempt in laying foundation for economic planning in India in 1934 through his book, "Planned Economy of India". It was a 10 year plan.

2. **Jawaharlal Nehru (1938):** set-up "National Planning Commission" by a committee but due to the changes in the political era and second World War, it did not materialize.

3. **Bombay Plan (1940):** The 8 leading industrialists of Bombay presented "Bombay Plan". It was a 15 Year Investment Plan.

4. **S. N Agarwal (1944)** gave the "Gandhian Plan" focusing on the agricultural and rural economy.

5. **M.N. Roy (1945)** drafted 'People's Plan". It was aiming at **mechanization** of agricultural production and distribution by the state only.

6. **J.P. Narayan (1950)** advocated, "Sarvodaya Plan" which was inspired by Gandhian Plan and with the idea of Vinoba Bhave. It gave importance not only for agriculture, but encouraged small and cottage industries in the plan.

After considering all the plans, in the same year. The Planning Commission was set up to formulate Five Year Plans in India by Jawaharlal Nehru. He was the first Chairman of Planning Commission, Government of India.

11.7.2. Case for planning

The economic planning is justified on the following grounds.

1. **To accelerate and strengthen market mechanism:** The market mechanism works imperfectly in underdeveloped countries because of the ignorance and

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unfamiliarity with it. A large part of the economy comprises the non-monetized sector. The product, factor, money and capital markets are not organized properly. Therefore the planned economy will be a better substitute for free economy.

2. **To remove unemployment:** Capital being scarce and labour being abundant, the problem of providing gainful employment opportunities to an ever-increasing labour force is a difficult task. The need for planning in underdeveloped countries is further stressed by the necessity of removing widespread unemployment and disguised unemployment in such economies.

3. **To achieve balanced development:** In the absence of sufficient enterprise and initiative, the planning authority is the only institution for planning the balanced development of the economy. For rapid economic development, underdeveloped countries require the development of the agricultural and industrial sectors, the establishment of social and economic overheads, the expansion of the domestic and foreign trade sectors in a harmonious way.

i) **Development of Agriculture and Industrial Sectors:** The need for developing the agriculture sector along with the industrial sector arises from the fact that agriculture and industry are interdependent. Reorganization of agriculture releases surplus labour force which can be absorbed by the industrial sector. Development of agriculture is also essential to supply the raw material needs of the industrial sector.

ii) **Development of Infrastructure:** The agriculture and industrial sectors cannot develop in the absence of economic and social overheads. The building of canals, roads, railways, power stations, etc., is indispensable for agricultural and industrial development. Infrastructure involves huge capital investment of long gestation period and low rate of return. The state alone can provide strong infrastructural bases through planning.

iii) **Development of Money and Capital Markets:** The expansion of the domestic and foreign trade requires not only the development of agricultural and industrial sectors along with social and economic overheads but also the existence of financial institutions. Money and capital markets are not adequate in underdeveloped countries. This factor acts as an obstacle to the growth of industry and trade. So planning alone can provide sound money market and capital market.

4. **To remove poverty and inequalities:** Planning is the only path open to underdeveloped countries, for raising national and per capita income, reducing inequalities and poverty and increasing employment opportunities. Has it happened in India in the last 65 years?

Hence, Arthur Lewis says, "Planning is more necessary in backward countries

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to devise ways and means and to make concerted efforts to raise national income"

11.7.3. Case against planning

The failure of market mechanism invited state intervention in economic activities through planning. The prime goals of economic planning are stabilization in developed countries and growth in LDCs. But the economic planning also is not free from limitations. It may retard private initiatives, hamper freedom of choice, involve huge cost of administration and stop the automatic adjustment of price mechanism. The arguments against planning are discussed below.

1. Loss of freedom

The absence of freedom in decision making may act as an obstacle for economic growth. Regulations and restrictions are the backbone of a planned economy. The economic freedom comprises freedom of consumption, freedom of choice of occupation, freedom to produce and the freedom to fix prices for the products. Under planning, the crucial decisions are made by the Central Planning Authority. The consumers, producers and the workers enjoy no freedom of choice. Therefore, Hayek explains in his book 'Road to Serfdom' that centralized planning leads to loss of personal freedom and ends in economic stagnation. The decisions by the Government are not always rational. But, freedom to private producers will be misused; profit will be given top priority, welfare will be relegated.

2. Elimination of Initiative

Under centralized planning, there will be no incentive for initiatives and innovations. Planning follows routine procedure and may cause stagnation in growth. The absence of initiatives may affect progress in following ways.

a. The absence of private ownership and profit motive discourages entrepreneurs from taking bold decisions and risk taking. Attractive profit is the incentive for searching new ideas, new lines and new methods. These are missing in a planned economy.

b. As all enjoy equal reward under planned economy irrespective of their effort, efficiency and productivity, nobody is interested in undertaking new and risky ventures.

c. The bureaucracy and red tapism which are the features of planned economy, cripple the initiative as they cause procedural delay and time loss. The ease of doing business is disrupted. It is because of this, even socialist countries like Russia and China offer incentives to private enterprises.

3. High cost of Management

No doubt the fruits of planning such as industrialization, social justice and regional balance are good. But the cost of management of the economic affairs outweighs the benefits of planning. Plan formulation and implementation involve engagement of an army of staff for data collection and administration. As Lewis remarks, "The better we try to plan, the

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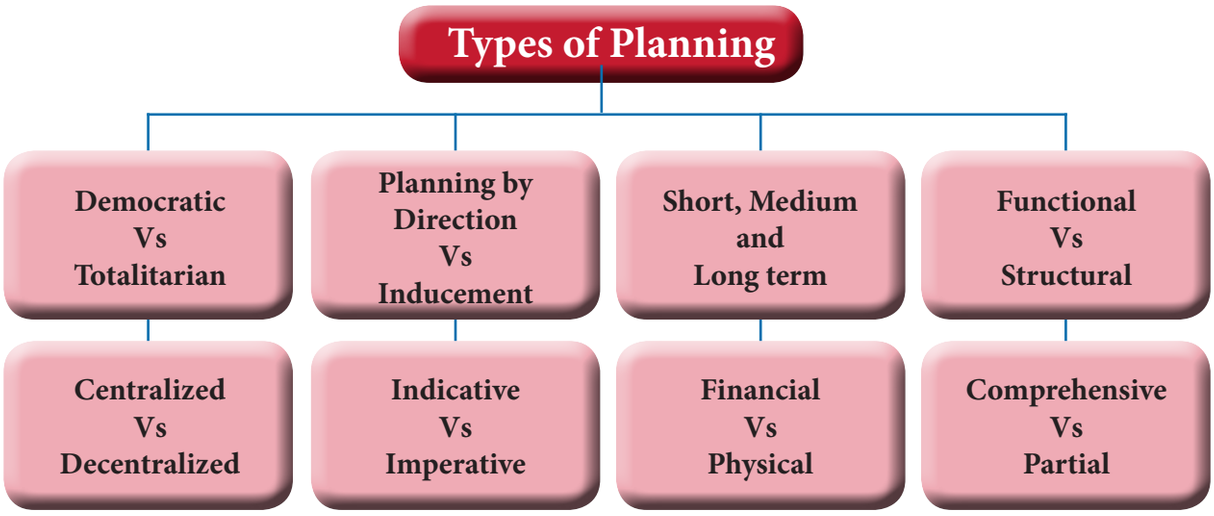
more planners we need". Inadequate data, faulty estimations and improper implementation of plans result in wastage of resources and cause either surplus or shortages.

4. Difficulty in advance calculations

Price mechanism provides for the automatic adjustment among price, demand and supply in a Laissez Faire economy. The producers and consumers adjust their supply and demand based on price changes. There is no such mechanism in a planned economy. Advance calculations in a precise manner are impossible to make decisions regarding the consumption and production. It is also very difficult to put the calculations into practice under planning. Excess supply and excess demand can also happen in the market oriented economy. Infact it has happened in many capitalistic economies, including the US.

The arguments against planning are mostly concerned with centralized and totalitarian planning. The democratic planning, planning by inducement and decentralized planning especially under mixed economies give equal role for private sector and public sector. Planned economy appears to be more efficient operationally than a market economy. So the question is not one of plan or no plan but one of the type of plan. The right mix of market mechanism and state intervention in right proportion will promise accelerated economic growth accompanied by stability and social justice.

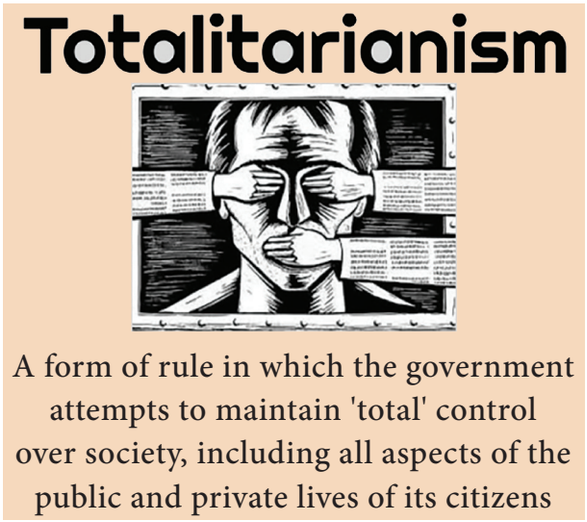
11.8 Types of planning



Economic planning is a process under which attempts are made to achieve desired targets of economic development within a specified period of time. There are different types of planning which differ in ideology and the procedure in execution.

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1. Democratic Vs Totalitarian:

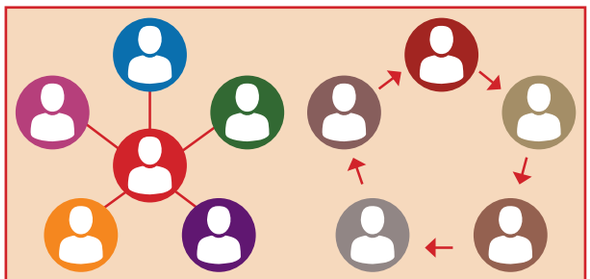


A form of rule in which the government attempts to maintain 'total' control over society, including all aspects of the public and private lives of its citizens

Democratic planning implies planning within democracy. People are associated at every step in the formulation and implementation of the plan. A democratic plan is characterized by the widest possible consultations with the various state governments and private enterprises at the stage of preparation. The plan prepared by the Planning Commission is not accepted as such. It can be accepted, rejected or modified by the Parliament of the country.

Under totalitarian planning, there is central control and direction of all economic activities in accordance with a single plan. Consumption, production, exchange, and distribution are all controlled by the central planning authority. In authoritarian planning, the planning authority is the supreme body. It decides about the targets, schemes, allocations, methods and procedures of implementation of the plan.

2. Centralized Vs Decentralized: Under centralized planning, the entire planning process in a country is under a central planning authority. This authority formulates a central plan, fixes objectives, targets and priorities for every sector of the economy. In other words, it is called 'planning from above'.



Centralization Vs Decentralization

Under decentralized planning local organizations and institutions formulate, adopt, execute and supervise the plan without interference by the central authorities. In other words, it is called 'planning from below'.

3. Planning by Direction Vs Inducement: Under planning by direction, there is a central authority which plans, directs and orders the execution of the plan in accordance with pre-determined targets and priorities.

Under planning by inducement, the people are induced to act in a certain way through various monetary and fiscal measures. If the planning authority wishes to encourage the production of a commodity, it can give subsidy to the firms. Thus, planning by inducement is able to achieve the same results as under planning by direction but with less sacrifice of individual liberty.

4. Indicative Vs Imperative Planning: Indicative planning is peculiar to the mixed economies. It has been in practice

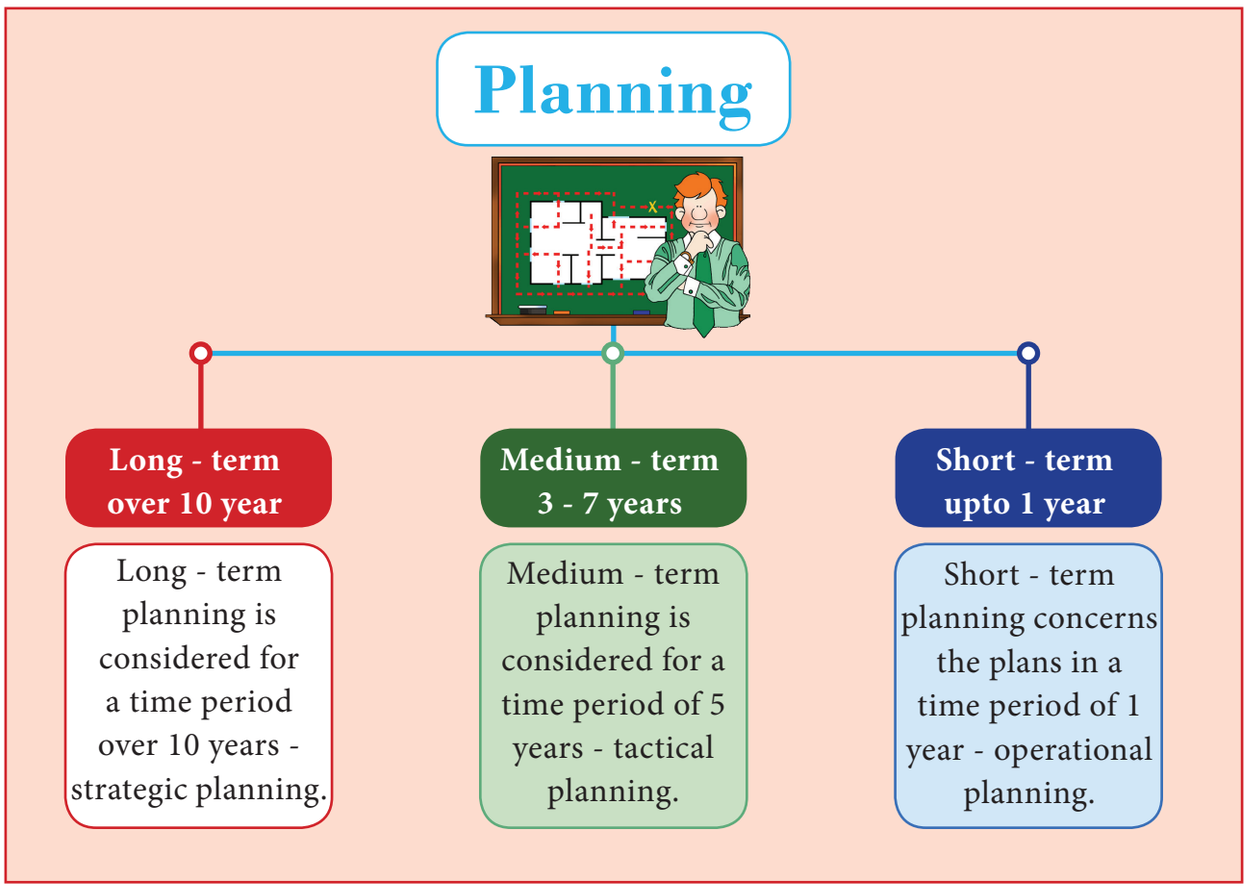
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in France since the Monnet Plan of 1947-50. In a mixed economy, the private sector and the public sector work together. Under this plan, the outline of plan is prepared by the Government. Then it is discussed with the representatives of private management, trade unions, consumer groups, finance institutions and other experts. The essential function of planning is coordination of different economic units. The state provides all types of facilities to the private sector. The private sector is expected to fulfill the targets and priorities. The state does not force the private sector but just indicate the areas of operation and targets to be fulfilled. In short, the planning procedure is soft and flexible.

Under imperative planning, the state is all powerful in preparation and implementation of the plan. Once a plan is drawn up, its implementation is a matter of enforcement. The USSR President Stalin used to say, 'Our plans are our instructions'. There is complete control over the entire resources by the state. There is no consumer sovereignty. The Government policies and procedures are rigid. China and Russia follow imperative planning.

5. Short, Medium and Long term Planning: Short-term plans are also known as 'controlling plans'. They encompass a period of one year, therefore, they are also known as 'annual plans'.

The medium-term plans last for a period of 3 to 7 years. But normally, the medium term plan is made for the period of five years. The medium-term planning is not only related to allocation of financial resources but also physical resources.



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Long-term plans last for a period of 10 to 30 years. They are also known as 'perspective plans'. The basic philosophy behind long-term planning is to bring structural changes in the economy.

6. Financial Vs Physical Planning: Financial planning refers to the technique of planning in which resources are allocated in terms of money while physical planning pertains to the allocation of resources in terms of men, materials and machinery.

7. Functional Vs Structural Planning: Functional planning refers to that planning which seeks to remove economic difficulties by directing all the planning activities within the existing economic and social structure.

The structural planning refers to a good deal of changes in the socio-economic framework of the country. This type of planning is adopted mostly in under developed countries.

8. Comprehensive Vs Partial Planning: General planning which concerns itself with the major issues for the whole economy is known as comprehensive planning whereas partial planning is to consider only the few important sectors of the economy.

11.9 NITI Aayog



NITI Aayog (National Institution for Transforming India) was formed on January 1, 2015 through a Union Cabinet resolution. NITI Aayog is a policy think-tank of the Government of India. It replaced the Planning Commission from 13th August, 2014. The Prime Minister is the Chairperson of NITI Aayog and Union Ministers will be Ex-officio members. The Vice- Chairman of the NITI Aayog is the functional head and the first Vice-Chairman was Arvind Panangariya.

11.9.1. Functions of NITI Aayog

1. Cooperative and Competitive Federalism: To enable the States to have active participation in the formulation of national policy.

2. Shared National Agenda: To evolve a shared vision of national development priorities and strategies with the active involvement of States.

3. Decentralized Planning: To restructure the planning process into a bottom-up model.

4. Vision and Scenario Planning: To design medium and long-term strategic frameworks towards India's future.

5. Network of Expertise: To mainstream external ideas and expertise into government policies and programmes through a collective participation.

6. Harmonization: To facilitate harmonization of actions across different layers of government, especially when involving cross-cutting and overlapping issues across multiple sectors; through communication, coordination, collaboration and convergence amongst all the stakeholders.

7. Conflict Resolution: To provide a platform for mutual consensus to inter-sectoral, inter-departmental, inter-state as well as centre-state issues for all speedy execution of the government programmes.

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8. Coordinating Interface with the World: It will act nodal point to harness global expertise and resources coming from International organizations for India's developmental process.

9. Internal Consultancy: It provides internal consultancy to Central and State governments on policy and programmes.

10. Capacity Building: It enables to provide capacity building and technology up-gradation across government, benchmarking with latest global trends and providing managerial and technical know-how.

11. Monitoring and Evaluation: It will monitor the implementation of policies and progammes and evaluate the impacts.

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Initiatives like Atal Innovation Mission, Ayushmaan Bharat approach towards water conservation measures and the draft bill to establish the National Medical Commission to replace the Medical Council of India have all been conceptualized in NITI Aayog.

NITI Aayog is also bringing about a greater level of accountability. It has established a development monitoring and evaluation office which collects data on the performance of various ministries. Using such data, the Aayog makes performance based ranking of states to foster a spirit of competitive federalism. The success of NITI Aayog can be evaluated after a substantial period of time

Summary

The first part of this chapter deals with economic development which gained importance during the 20th Century. The concept of development and growth are used inter-changeably. However, there are mild differences between the two. The pace of economic development depends on several factors which are classified under economic and non-economic factors. Economic development is retarded by several obstacles of which the Vicious Circle of Poverty is the prime one. The second part is concerned with economic planning. The failure of market mechanism brought the birth of planning. Planning started in USSR and spread to countries like India and most of the mixed economies. There are strong arguments in favour of planning and some arguments against planning. There are various types of planning under different economic systems depending upon the extent of Government control. It is totalitarian and highly centralized in socialist countries, democratic and indicative in countries like France. The NITI Aayog is the new planning body replacing Planning Commission in India.

Glossary

- **Growth :** Economic growth refers to an increase in real GDP , which means an increase in the value of national output/national expenditure.
- **Development :** The systematic use of scientific and technical knowledge to meet specific objectives and requirements.
- **Social Indicators :** The basic needs for development such as health, education, sanitation, water, food etc.
- **Capital accumulation :** The process of addition to the existing stock of capital
- **Financial Planning :** Techniques of planning in which resources are allocated in terms of money
- **Physical Planning :** Techniques of planning in which resources are allocated in terms of men, materials and machinery
- **Perspective Planning :** Long term planning i.e. for a period of 15 years or more
- **Underdevelopment :** Underdevelopment is low level of development characterized by low real per capita income, widespread poverty, lower level of literacy, low life expectancy, underutilization of resources etc.

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- **Human Capital :** Education and training that make human beings more productive.
- **Vicious Circle of Poverty :** Circular relationships that tend to perpetuate the low level of development in Less Developed Countries.
- **Planning :** It is the process of thinking about the activities required to achieve directed goals.
- **Centralized Planning :** Centralized planning means the power of planning and decision making are exclusively in the hands of top management.

MODEL QUESTIONS

Part-A

Multiple Choice Questions

1. "Redistribution with Growth" became popular slogan of which approach?
   a) Traditional approach
   b) New welfare oriented approach
   c) Industrial approach
   d) None of the above

2. Which is not the feature of economic growth?
   a) Concerned with developed nations
   b) Gradual change
   c) Concerned with quantitative aspect
   d) Wider concept

3. Which among the following is a characteristic of underdevelopment?
   a) Vicious circle of poverty
   b) Rising mass consumption
   c) Growth of Industries
   d) High rate of urbanization

4. The non-economic determinant of economic development
   a) Natural resources
   b) Human resource
   c) Capital formation
   d) Foreign trade

5. Economic growth measures the ----------
   a) Growth of productivity
   b) Increase in nominal income
   c) Increase in output
   d) None of the above

6. The supply side vicious circle of poverty suggests that poor nations remain poor because
   a) Saving remains low
   b) Investment remains low
   c) There is a lack of effective government
   d) a and b above

7. Which of the following plan has focused on the agriculture and rural economy?
   a) People's Plan
   b) Bombay Plan
   c) Gandhian Plan
   d) Vishveshwarayya Plan

8. Arrange the following plans in correct chronological order
   a) People's Plan
   b) Bombay Plan
   c) Jawaharlal Nehru Plan
   d) Vishveshwarayya Plan

Answer choices

a) (i) (ii) (iii) (iv)
b) (iv) (iii) (ii) (i)

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c) (i) (ii) (iv) (iii)
d) (ii) (i) (iv) (iii)

9. M.N. Roy was associated with ----------
a) Congress Plan
b) People's Plan
c) Bombay Plan
d) None of the above

10. Which of the following country adopts indicative planning?
a) France
b) Germany
c) Italy
d) Russia

11. Short-term plan is also known as----------
a) Controlling Plans
b) De-controlling Plans
c) Rolling Plans
d) De-rolling Plans

12. Long-term plan is also known as ----------
a) Progressive Plans
b) Non-progressive Plans
c) Perspective Plans
d) Non-perspective Plans

13. The basic philosophy behind long-term planning is to bring---------- changes in the economy?
a) Financial
b) Agricultural
c) Industrial
d) Structural

14. Sarvodaya Plan was advocated by----------
a) Mahatma Gandhi
b) J.P. Narayan
c) S. N Agarwal
d) M.N. Roy

15. Planning Commission was set up in the year ----------
a) 1950 b) 1951
c) 1947 d) 1948
e) Gandhian Plan

16. Who wrote the book 'The Road to Serfdom'?
a) Friedrich Hayek
b) H.R. Hicks
c) David Ricardo
d) Thomas Robert Malthus

17. Perspective plan is also known as ----
a) Short-term plan
b) Medium-term plan
c) Long-term plan
d) None of the above

18. NITI Aayog is formed through----------
a) Presidential Ordinance
b) Allocation of business rules by President of India
c) Cabinet resolution
d) None of the above

19. Expansion of NITI Aayog?
a) National Institute to Transform India
b) National Institute for Transforming India
c) National Institution to Transform India
d) National Institution for Transforming India

20. The Chair Person of NITI Aayog is
a) Prime Minister
b) President
c) Vice – President
d) Finance Minister

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Answers

1	2	3	4	5	6	7	8	9	10
b	d	a	b	c	d	c	b	b	a
11	12	13	14	15	16	17	18	19	20
a	c	d	b	a	a	c	c	d	a

Part-B

Answer the following questions in one or two sentences.

21. Define economic development
22. Mention the indicators of development.
23. Distinguish between economic growth and development
24. What is GNP?
25. Define economic planning.
26. What are the social indicators of economic development?
27. Write a short note on NITI Aayog.

Part-C

Answer the following questions in one paragraph.

28. Elucidate major causes of vicious circle of poverty with diagram
29. What are the non-economic factors determining development?
30. How would you break the vicious circle of poverty?
31. Trace the evolution of economic planning in India.
32. Describe the case for planning.
33. Distinguish between functional and structural planning.
34. What are the functions of NITI Aayog?

Part-D

Answer the following questions in about a page.

35. Discuss the economic determinants of economic development.
36. Describe different types of Planning.
37. Bring out the arguments against planning.

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CHAPTER

12

Introduction to Statistical Methods and Econometrics

"Statistics is the grammar of science."

- Karl Pearson

Learning Objectives

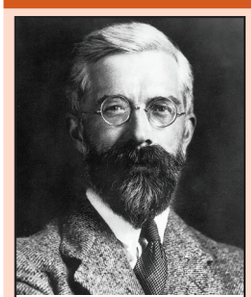
1. To describe some statistical techniques that may be useful to analyze economic issues.
2. To give a brief introduction to the subject of econometrics and its applications

12.1 Etymology and Milestones of Statistics in Global Level

The term statistics originated in the West and was known by various names, such as 'status' in Latin, 'statistik' in German, 'statisque' in French. It is said that Gottfried Achenwall used the word 'statistik' in 1749 to describe the political science of different countries. All these names in short mean to describe the political state.

The first book to have statistics as its title was 'Contributions to vital Statistics' by Francis GP Neison in 1845. It was to prepare a systematic study of birth and death related data.

Father of statistics



Ronald Fisher

The fundamental principles of statistics were developed by the biologist, Ronald fisher who lived in England during the last century. His studies in statistics led to the synthesis of evolution and modern genetics.

The monumental contribution to the subject of statistics can be attributed to R.A. Fisher (1890-1962) who was able to apply statistics to a variety of fields such as Biometry, Genetics, Psychology, Education, Agriculture and others.

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Besides he is also known as the pioneer of estimation theory, analysis of variance, and design of experiments. Hence he is known as the father of Statistics.

12.2 Evolution of Statistics in India



Prof. P.C.Mahalanobis

Evidence from history proves that during the reign of Chandra Gupta Maurya, there existed a system of maintaining vital statistics, including registration of births and deaths. Such records can be found in Kautilya's Arthashastra even before 300B.C. The book "Ain-e-Akbari" (1596-97) mentions the statistical and administrative surveys conducted during Akbar's rule. P.C.Mahalanobis is known as the founder of modern statistics and also as father of Statistics in India. Since the year 2007, 29th of June every year is celebrated as Statistics Day to commemorate his birth anniversary.

12.3 Definitions of Statistics

The term 'Statistics' is used in two senses: as singular and plural. In singular form it simply means statistical methods. Statistics when used in singular form helps in the collection, presentation, classification and interpretation of data to make it easily comprehensible. In its plural form it denotes collection of numerical figures and facts. In the narrow sense it has been defined as the science of counting and science of averages.

Definitions of Statistics

Statistics as a science of estimates and probabilities

- Boddington

Statistics may be defined as the collection, organisation, presentation, analysis and interpretation of numerical data

- Croxton & Cowden

12.4 Characteristics and Functions of Statistics

i) **Statistics are an aggregate of facts.** For example, numbers in a calendar pertaining to a year will not be called statistics, but to be included in statistics it should contain a series of figures with relationships for a prolonged period.

ii) **Statistics are numerically enumerated, estimated and expressed.**

iii) **Statistical collection should be systematic with a predetermined purpose:** The purpose of collection of statistics should be determined beforehand in order to get accurate information.

iv) **Should be capable of being used as a technique for drawing comparison:** It should be capable of drawing comparison between two different sets of data by tools such as averages, ratios, rates, coefficients etc.

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Functions of Statistics

- Statistics presents facts in a definite form.
- It simplifies mass of figures.
- It facilitates comparison.
- It helps in formulating and testing.
- It helps in prediction.
- It helps in the formulation of suitable policies.

12.5 Nature of Statistics

Different Statisticians and Economists differ in views about the nature of statistics, some call it a science and some say it is an art.

Tipett on the other hand considers Statistics both as a science as well as an art.

12.6 Scope of Statistics

Statistics is applied in every sphere of human activity – social as well as physical – like Biology, Commerce, Education, Planning, Business Management, Information Technology, etc.

Statistics and Economics

Statistical data and techniques are immensely useful in solving many economic problems such as fluctuation in wages, prices, production, distribution of income and wealth and so on.

Statistics and Firms

Statistics is widely used in many firms to find whether the product is conforming to specifications or not.

Statistics and Commerce

Statistics are life blood of successful commerce. Market survey plays an important role to exhibit the present conditions and to forecast the likely changes in future.

Statistics and Education

Statistics is necessary for the formulation of policies to start new courses, according to the changing environment. There are many educational institutions owned by the Govt and the private individuals engaged in research and development work to test the past knowledge and evolve new knowledge. These are possible only through statistics.

Statistics and Planning:

Statistics is indispensable in planning. In the modern world, which can be termed as the "world of planning", almost all the organisations in the government are seeking the help of planning for efficient working, for the formulation of policy decisions and execution of the same. In order to achieve the above goals, various advanced statistical techniques are used for processing, analyzing and interpreting data. In India, statistics play an important role in planning, both at the central and state government levels, but the quality of data is highly unscientific.

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Statistics and Medicine

In Medical sciences, statistical tools are widely used. In order to test the efficacy of a new drug or to compare the efficacy of two drugs or two medicines, t - test for the two samples is used. More and more applications of statistics are at present used in clinical investigations.

Statistics and Modern applications

Recent developments in the fields of computer and information technology have enabled statistics to integrate their models and thus make statistics a part of decision making procedures of many organisations. There are many software packages available for solving simulation problems.

12.7 Limitations of statistics

Statistics with all its wide application in every sphere of human activity has its own limitations. Some of them are given below.

1. Statistics is not suitable to the study of qualitative phenomenon: Since statistics is basically a science and deals with a set of numerical data. It is applicable to the study of quantitative measurements. As a matter of fact, qualitative aspects like empowerment, leadership, honesty, poverty, intelligence etc., cannot be expressed numerically and statistical analysis cannot be directly applied on these qualitative phenomena.

2. Statistical laws are not exact: It is well known that mathematical and physical sciences are exact. But statistical laws are not exact and statistical laws are only approximations. Statistical conclusions are not universally true. They are true only on an average.

3. Statistics table may be misused: Statistics must be used only by experts; otherwise, statistical methods are the most dangerous tools in the hands of the inexpert persons. The use of statistical tools by the inexperienced and untrained persons might lead to wrong conclusions.

4. Statistics is only one of the methods of studying a problem: Statistical method does not provide complete solution of the problems because problems are to be studied taking the background of the countries' culture, philosophy, religion etc., into consideration. Thus the statistical study should be supplemented by other evidences.

12.8 Types of Statistics

There are two major types of statistics named as Descriptive Statistics and Inferential Statistics.

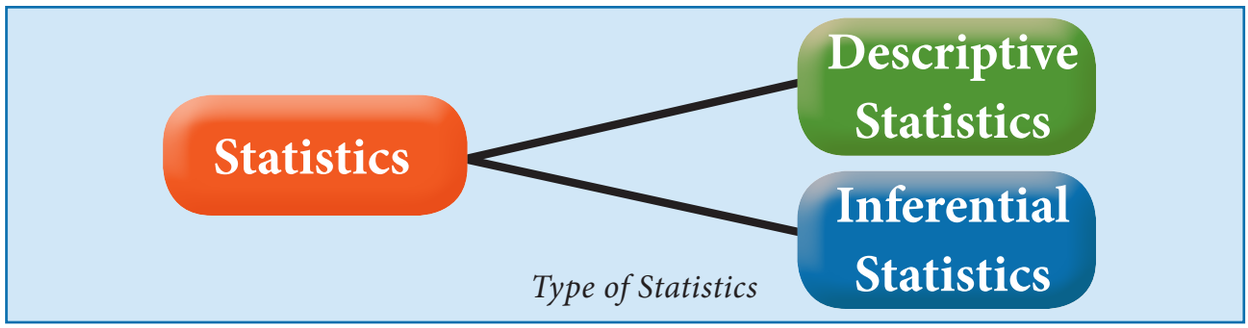
Descriptive Statistics

The branch of statistics devoted to the summarization and description of data is called Descriptive Statistics

Inferential Statistics

The branch of statistics concerned with using sample data to make an inference about a population of data is called Inferential Statistics.

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Type of Statistics

Major differences between Descriptive Statistics and Inferential Statistics

S.No	Descriptive statistics	Inferential statistics
1.	It describes the population under study.	It draws conclusion for the population based on the sample result.
2.	It presents the data in a meaningful way through charts, diagrams, graphs, other than describing in words.	It uses hypotheses, testing and predicting on the basis of the outcome.
3.	It gives the summary of data.	It tries to understand the population beyond the sample.

12.9 Data

Data are the information about facts or numbers collected to be examined and used to help with decisions. Data are the basic raw materials of statistics.

In statistics, data are classified into two broad categories: 1.Quantitative data and Qualitative data.

1. **Quantitative data** are those that can be quantified in definite units of measurement. These refer to characteristics whose successive measurements yield quantifiable observations. Eg. Age, income, number of firms etc

2. **Qualitative data** refer to qualitative characteristics of a subject or an object. A characteristic is qualitative in nature when its observations are defined and noted in terms of the presence or absence of a certain attribute in discrete numbers. These data are further classified as nominal and rank data. Eg. Gender, Community, honesty…

(i) **Nominal data** are the outcome of classification into two or more categories of items or units comprising a sample or a population according to some quality characteristic. Classification of students according to their sex (as males and females), Workers according to their skill (as skilled, semi-skilled, and unskilled), and of employees according to their level of education (as matriculates, undergraduates, and post-graduates).

(ii) **Rank data,** on the other hand, are the result of assigning ranks to specify

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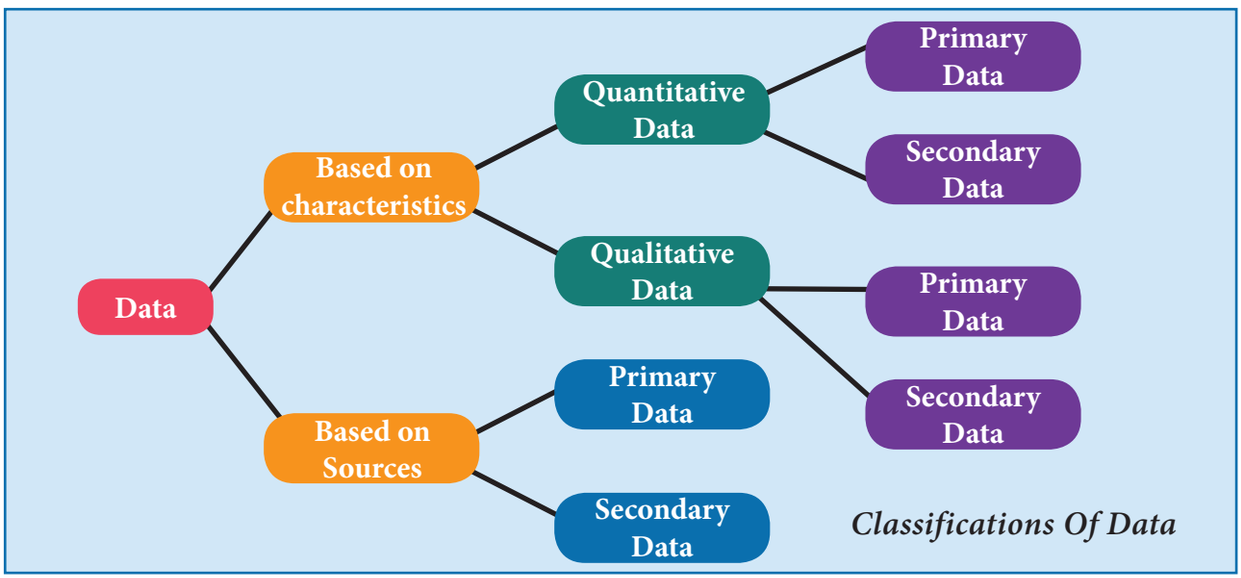
order in terms of the integers 1,2,3, ..., n. Ranks may be assigned according to the level of performance in a test, a contest, a competition, an interview, or a show. The candidates appearing in an interview, for example, may be assigned ranks in integers ranging from I to n, depending on their performance in the interview.

Sources of Collection of data

Based on the data sources, data could be seen as of two types, viz., secondary data and primary data. The two can be defined as under:

(i) Primary data: Those data which do not already exist in any form, and thus have to be collected for the first time from the primary source(s). By their very nature, these data are fresh and first-time collected covering the whole population or a sample drawn from it

(ii) Secondary data: They already exist in some form: published or unpublished in an identifiable secondary source. They are, generally, available from published source(s), though not necessarily in the form actually required. Eg. Data from CSO, NSSO, RBI….



Classifications Of Data

12.10 Arithmetic mean or mean ($\overline{X}$)

Central value is called a measure of central tendency or an average or a measure of locations. There are five averages. Among them mean, median and mode are called simple averages and the other two averages geometric mean and harmonic mean are called special averages.

Meaning of Average

- "A measure of central tendency is a typical value around which other figures congregate."
- "An average stands for the whole group of which it forms a part yet represents the whole."
- "One of the most widely used set of summary figures is known as measures of location."

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The mean of a variable is defined as the sum of the observations divided by the number of observations. If the variable x assumes n values x_1, x_2 … x_n then the mean, , is given by summing of all x values divided by the number of x values.

$$\bar{X} = \frac{X_1+X_2+X_3+X_4+\cdots+X_n}{n} = \frac{1}{n}\sum_{i}^{n}{}_{=1}X_i,$$

This formula is for ungrouped or raw data.

Example 1: Calculate the mean for given data 2,4,6,8,10.

Direct Method $\bar{X} = \frac{\sum X}{n}$

Where $\sum X$ = Sum of values

N = No. of items

Solution:

$$\bar{X} = \frac{2+4+6+8+10}{5} = \frac{30}{5} = 6$$

Short- cut method:

The formula for finding mean,

$$\bar{X} = A + \frac{\sum d}{n}$$

Where A= the assumed mean or any value of X

d = deviations of each value from assumed mean.

Example 2: A student's marks in 5 subjects are 75,68,80,92,and 56. Find his average mark.

Solution:

X	d = X - A
75	7
68 → A	**0**
80	12
92	24
56	-12
Total	**31**

$$\bar{X} = A + \frac{\sum d}{n}$$

$$= 68 + \frac{31}{5}$$

$$= 68 + 6.2$$

$$= 74.2$$

12.11 Standard Deviation (σ)

The measures of central tendency serve to locate the center of the distribution, but they do not reveal how the items are spread out on either side of the center. This characteristic of a frequency distribution is commonly referred to as dispersion. The degree of variation is evaluated by various measures of dispersion. There are two kinds of measures of dispersion, namely

1. Absolute measure of dispersion
2. Relative measure of dispersion

Absolute measure of dispersion indicates the amount of variation in a set of values in terms of units of observations.

Relative measures of dispersion are free from the units of measurements of the observations. They are pure numbers. They are used to compare the variation in two or more sets, which are having different units of measurements of observations.

Standard Deviation is one of the methods of Absolute measure of dispersion. Karl Pearson introduced the concept of standard deviation in 1893. Standard deviation is also called Root-Mean Square Deviation. The reason is

that it is the square–root of the mean of the squared deviation from the arithmetic mean. It provides accurate result. Square of standard deviation is called Variance.

Definition:

It is defined as the positive square-root of the arithmetic mean of the square of the deviations of the given observation from their arithmetic mean.

The standard deviation of the population is denoted by the Greek letter **σ (sigma)** The standard deviation of sample is denoted as 's'.

Calculation of Standard deviation-Individual Series:

There are two methods of calculating Standard deviation in an individual series.

a) Deviations taken from Actual mean

b) Deviation taken from Assumed mean

$$\text{Standard Deviation} = \sqrt{\left(\frac{\sum(x-\bar{x})^2}{n}\right)}$$

Where, $\bar{x}$ = mean value of distribution

n = number of observations.

Steps:

1. Find out the actual mean of given data ($\bar{X}$)
2. Find out the deviation of each value from the mean ($x = X - \bar{X}$)
3. Square the deviations and take the total of squared deviations $\sum x^2$
4. Divided the total $\sum x^2$ by the number of observation $\left(\frac{\sum x^2}{n}\right)$
5. The square root of $\left(\frac{\sum x^2}{n}\right)$ is standard deviation.

$$\sigma = \sqrt{\left(\frac{\sum x^2}{n}\right)} \quad \text{or} \quad \sqrt{\left(\frac{\sum(x-\bar{x})^2}{n}\right)}$$

$$\frac{\sum x^2}{n} = \text{Variance} = \frac{\sum(x-\bar{x})^2}{n}$$

When the sample size is less than 30,

$$\text{variance} = \frac{\sum(x-\bar{x})^2}{n-1};$$

When n = number of observations.

Example 1: Calculate the standard deviation from the following data by **Actual Mean Method**: 25, 15, 23, 42, 27, 25, 23, 25, and 20.

Solution: Deviations from actual mean.

Sl. No	Values (X)	$X - \bar{X}$	$(X - \bar{X})^2$
1	25	25-25=0	0
2	15	15-25=10	100
3	23	23-25= -2	4
4	42	42-25=17	289
5	27	27-25=2	4
6	25	25-25=0	0
7	23	23-25=-2	4
8	25	25-25=0	0
9	20	20-25=-5	25
N=9	225	0	426

$$\bar{X} = \frac{225}{9} = 25$$

$$\sigma = \sqrt{\left(\frac{\sum(x-\bar{x})^2}{n}\right)} = \sqrt{\frac{426}{9}} = \sqrt{47.33}$$

σ = 6.88 Answer

Example 2: Calculate the standard deviation for the following data by assumed mean method: 43, 48, 65, 57, 31, 60, 37, 48, 78, 59

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Solution: Deviation from assumed mean

Sl. No	(X)	d=X-A (A=57)	d^2
1	43	-14	196
2	48	-9	81
3	65	8	64
4	57	0	0
5	31	-26	676
6	60	3	9
7	37	-20	400
8	48	-9	81
9	78	21	441
10	59	2	4
N=10		$\sum d = -44$	$\sum d^2=1952$

$$\sigma = \sqrt{\frac{\sum d^2}{n} - \left(\frac{\sum d}{n}\right)^2} = \sqrt{\frac{1952}{10} - \left(\frac{-44}{10}\right)^2}$$

$$= \sqrt{195.2-19.36} = \sqrt{175.84} = 13.26,$$

Answer = 13.26

12.12 Correlation (ϒ)

Introduction

Correlation is a statistical device that helps to analyse the covariation of two or more variables. Sir Francis Galton, is responsible for the calculation of correlation coefficient.

Types of Correlation


Karl Pearson

Correlation is classified in several different ways. Three of the most important ways of classifying correlation are:



Type I: Based on the direction of change of variables

Correlation is classified into two types as Positive correlation and Negative Correlation based on the direction of change of the variables.

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Positive Correlation:

The correlation is said to be positive if the values of two variables move in the same direction.

Ex 1: If income and Expenditure of a Household may be increasing or decreasing simultaneously. If so, there is positive correlation. Ex. Y= a + bx

Negative Correlation:

The Correlation is said to be negative when the values of variables move in the opposite directions. Ex. Y= a – bx

Ex 1: Price and demand for a commodity move in the opposite direction.

Type II: Based upon the number of variables studied.

There are three types based upon the number of variables studied as

a) Simple Correlation
b) Multiple Correlation
c) Partial Correlation

Simple Correlation:

If only two variables are taken for study then it is said to be simple correlation.

Multiple Correlations:

If three or more than three variables are studied simultaneously, then it is termed as multiple correlation.

Ex: Determinants of Quantity demanded

$$Q_d = f(P, Pc, Ps, t, y)$$

Where Q_d stands for Quantity demanded, f stands for function.

P is the price of the goods,

P_c is the price of competitive goods

P_s is the price of substituting goods

t is the taste and preference

y is the income.

Partial Correlation:

If there are more than two variables but only two variables are considered keeping the other variables constant, then the correlation is said to be Partial Correlation

Type III: Based upon the constancy of the ratio of change between the variables

Correlation is divided into two types as linear correlation and Non-Linear correlation based upon the Constancy of the ratio of change between the variables.

Linear Correlation: Correlation is said to be linear when the amount of change in one variable tends to bear a constant ratio to the amount of change in the other.

Ex. Y= a + bx

Non Linear: The correlation would be non-linear if the amount of change in one variable does not bear a constant ratio to the amount of change in the other variables.

Ex. $Y = a + bx^2$

Methods of Studying Correlation:

The various methods of ascertaining whether two variables are correlated or not are:

1. Scatter diagram Method
2. Graphic Method
3. Karl Pearson's Co - efficient of correlation and
4. Method of Least Squares.

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Of these, the first two are based on the knowledge of diagram and graphs, whereas the others are mathematical methods.

1. Scatter Diagram Method:

Scatter diagram is a graph of observed plotted points where each point represents the values of X and Y as a coordinate. It portrays the relationship between these two variables graphically.

Advantages of Scatter Diagram method

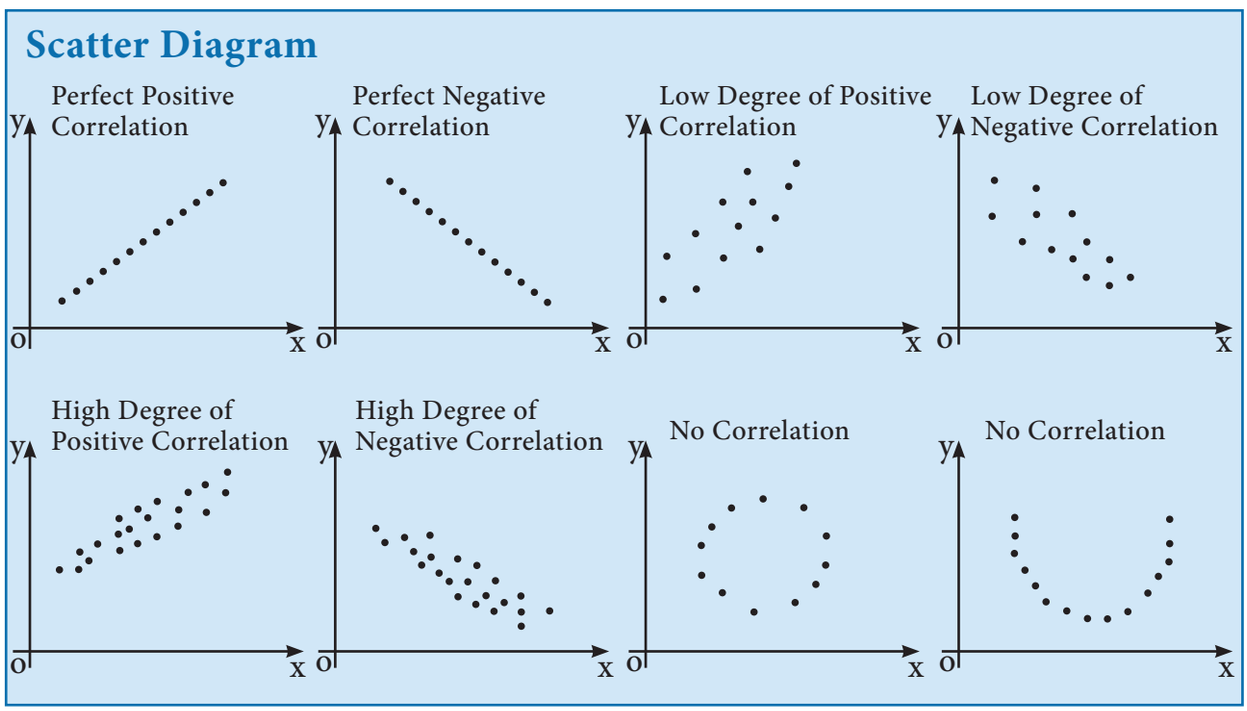
(1) It is very simple and non- mathematical method

(2) it is not influenced by the size of extreme item.

(3) It is the first step in resting the relationship between two variables.

Disadvantages of Scatter diagram method

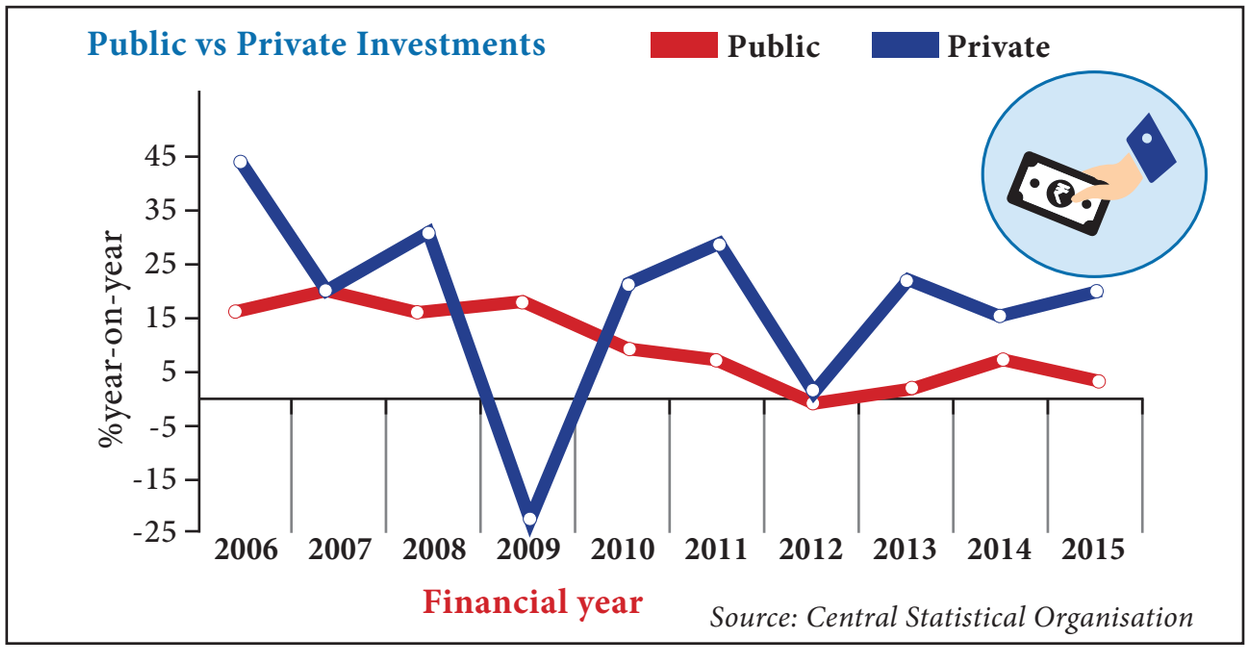
It cannot establish the exact degree of correlation between the variables, but provides direction of correlation and depicts it is high or low.



2. Graphic method

In this method, the individual values of two variables are plotted on the graph sheet and draw the curves of both the variables say x and y. If both X and Y are moving in the same direction either upward or downward, then the correlation is said to be positive. If the curves of X and Y move in the opposite direction; then the correlation is said to be negative.

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Source: Central Statistical Organisation

3. Karl Pearson's Coefficient of Correlation

Karl Pearson's Method is popularly known as Pearson's coefficient of correlation denoted by the symbol 'r'. The coefficient of correlation 'r' measures the degree of linear relationship between two variables say X and Y. The Formula for computing Karl Pearson's Coefficient of correlation is:

1) $$r = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{N\Sigma X^2 - (\Sigma X)^2}\sqrt{N\Sigma Y^2 - (\Sigma Y)^2}}$$

'r' is calculated by **Direct Method** without taking deviation of terms either from actual mean or assumed mean.

2) r is calculated by taking the **Deviation from actual mean.**

$$r = \frac{\Sigma xy}{\sqrt{\Sigma x^2 \Sigma y^2}}$$ where $x = (x-\bar{x})$, $y = (y-\bar{y})$

3) 'r' is calculated by taking assumed mean

$$r = \frac{N\Sigma dxdy - (\Sigma dx)(\Sigma dy)}{\sqrt{N\Sigma dx^2 - (\Sigma dx)^2}\sqrt{N\Sigma dy^2 - (\Sigma dy)^2}}$$

Where dx refers to deviations of x series from assumed mean A (X-A), dy refers to deviations of y series from an assumed mean θ (Y-B)

$\Sigma dxdy$ = Sum of product of the deviations x and y series from their assumed means.

Σdx^2 = Sum of the squares of the deviations of x series from an assumed mean

Σdy^2 = Sum of the squares of the deviations of y series from an assumed mean

Σdx = sum of the deviations of x series from an assumed mean of x

Σdy = sum of the deviations of y series from an assumed mean of y

Procedure for Computing the Correlation Coefficient: (For Direct and Deviation from actual mean method).

- **Step-1** Calculate the mean of two series 'X' 'Y'
- **Step-2** Calculate the deviations 'X' and Y in two series from their respective mean.

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❖ **Step-3** Square each deviation of 'X' and 'Y' then obtain the sum of the Squared deviation, That is and

❖ **Step-4** Multiply each deviation under X with each deviation under Y and obtain the product of 'xy'. Then obtain the sum of the product of X,Y. Then obtain the sum of the product of x,y is Σxy.

❖ **Step-5** Substitute the value in the formula.

Formula of Karl Pearson's Coefficient of Correlation - Ungrouped Data.

Direct Method	Indirect Method
Using the Variables as it is	Actual Mean deviation method

1 $$r = \frac{\Sigma xy}{\sqrt{\Sigma x^2 \Sigma y^2}}$$

$$r = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{N\Sigma X^2 - (\Sigma X)^2}\sqrt{N\Sigma Y^2 - (\Sigma Y)^2}}$$

where $x = (x-\bar{x})$, $y = (y-\bar{y})$

2. Assumed Mean Deviation Method

$$r = \frac{N\Sigma dxdy - (\Sigma dx)(\Sigma dy)}{\sqrt{N\Sigma dx^2 - (\Sigma dx)^2}\sqrt{N\Sigma dy^2 - (\Sigma dy)^2}}$$

2. Indirect Method

$dx = (x-\bar{x})$ and $dy = (y-\bar{y})$

r is free from origin

r is free from unit of measurement $-1 \le r \le +1$

Direct Method:

Example 1: Calculate Karl Pearson's Coefficient of correlation from the following data and interpret its value:

Price :X	10	12	14	15	19
Supply:Y	40	41	48	60	50

Solution: Let us take Price as X and supply as Y

Computation of Pearson's Correlation Coefficient				
Price: X	Supply: Y	XY	X^2	Y^2
10	40	400	100	1600
12	41	492	144	1681
14	48	672	196	2304
15	60	900	225	3600
19	50	950	361	2500
$\Sigma x = 70$	$\Sigma y = 239$	$\Sigma xy = 3414$	$\Sigma x^2 = 1026$	$\Sigma y^2 = 11685$

$$r = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{N\Sigma X^2 - (\Sigma X)^2}\sqrt{N\Sigma Y^2 - (\Sigma Y)^2}} \qquad r = \frac{(5 \times 3414) - (70 \times 239)}{\sqrt{(5 \times 1026) - (70)^2}\sqrt{5x11685 - (239)^2}}$$

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$$r = \frac{17,070 - 16,730}{\sqrt{230 \times 1304}} \qquad r = \frac{340}{547.65} = +0.621$$

Price of the product and supply for the product is positively correlated. When price of the product increases then the supply for the product also increases.

Actual Mean Method:

Ex-1: Estimate the coefficient of correlation with actualmean method for the following data.

Age of Cars in years	3	6	8	9	10	6
Cost of Annual Maintains (in 000 ₹)	1	7	4	6	8	4

Solution:

$$r = \frac{\Sigma xy}{\sqrt{\Sigma x^2 \ \Sigma y^2}} \quad \text{where } x = x - \bar{x},\ y = y - \bar{y}$$

S.No	x	x-$\bar{x}$ x - 7=x	$(x-\bar{x})^2 = x^2$	Y	y-$\bar{y}$ Y −5=y	$(y-\bar{y})^2 = y^2$	xy
1	3	-4	16	1	-4	16	16
2	6	-1	1	7	2	4	-2
3	8	+1	1	4	-1	1	-1
4	9	2	4	6	1	1	2
5	10	3	9	8	3	9	9
6	6	-1	1	4	-1	1	+1
	$\bar{x} \frac{42}{6} = 7$	0	32	$\bar{y} \frac{42}{6} = 7$	0	32	25

$$\Sigma x^2 = 32 \qquad \Sigma y^2 = 32 \qquad \Sigma xy = 25$$

Applying in Formula

$$r = \frac{\Sigma xy}{\sqrt{\Sigma x^2 \ \Sigma y^2}} = \frac{25}{\sqrt{32 \times 32}} = \frac{25}{32} = 0.781$$

r = 0.781, The Car is getting old in years the cost of maintenance is also increasing. The age of Car and its maintenance are positively correlated.

Assumed Mean Deviation Method

Ex 1: Find the Karl Pearson coefficient of Correlation between X and Y from the following data:

X:	10	12	13	16	17	20	25
Y:	19	22	26	27	29	33	37

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Solution:

Formula for Assumed Mean Deviation method.

$$r = \frac{N\sum dxdy - (\sum dx)(\sum dy)}{\sqrt{N\sum dx^2 - (\sum dx)^2}\sqrt{N\sum dy^2 - (\sum dy)^2}}$$

S.No	X	Y	(X-A)=dx	(Y-A)=dy	dx2	dy2	Dxdy
1	10	19	-6	-8	36	64	48
2	12	22	-4	-5	16	25	20
3	13	26	-3	-1	9	1	3
4	16	27	0	0	0	0	0
5	17	29	1	2	1	4	2
6	20	33	4	6	16	36	24
7	25	37	9	10	81	100	90
N=7	ΣX=113	ΣY=193	Σ(X-A)=1	Σ(Y-A)=4	Σdx^2=159	Σdy^2=230	Σdxdy=187

$$\bar{x} = \frac{\Sigma X}{N} = \frac{113}{7} = 16\frac{1}{7}$$

$$\bar{y} = \frac{\Sigma Y}{N} = \frac{193}{7} = 27\frac{4}{7}$$

Take the assumed values A = 16 & B = 27 therefore dx = X – A $\Rightarrow$ X – 16 and

dy = Y- A $\Rightarrow$ Y – 27

$$\therefore r = \frac{N\sum dxdy - (\sum dx)(\sum dy)}{\sqrt{N\sum dx^2 - (\sum dx)^2}\sqrt{N\sum dy^2 - (\sum dy)^2}}$$

$$= \frac{7\times187 - 1\times4}{\sqrt{7\times159 - (1)^2}\sqrt{7\times230 - (4)^2}}$$

$$= \frac{1309 - 4}{\sqrt{1112}\sqrt{1610 - 16}}$$

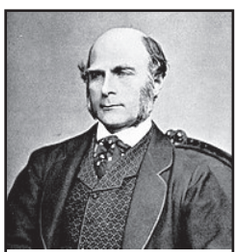
$$= \frac{1305}{\sqrt{1112}\sqrt{1594}} = \frac{1305}{(33.34)(39.92)}$$

$$= \frac{1305}{1330.9} = 0.9865 \qquad r = 0.986$$

There exists a positive high correlation between X and Y

12.13 Regression

Evolution of Regression



Francis Galton

The term 'Regression' was first coined and used in 1877 by Francis Galton while studying the relationship between the height of fathers and sons. The average height of children born of parents of a given height tended to move or "regress" toward the average height in the population as a whole. Galton's law of universal regression was confirmed by his friend Karl Pearson, who collected more than a thousand records of heights of members of family groups. The literal meaning of the word "regression" is **"Stepping back towards the average".**

Regression is the study of the relationship between the variables. If Y is the dependent variable and X is independent variable, the linear relationship between the variable is called the regression equation of Y on X, The regression equation is used to

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estimate the value of Y corresponding to the known value of X. The line describing this tendency to regress or going back was called by Galton a "**Regression Line**".

Difference between Correlation and Regression

S.No	Correlation	Regression
1	Correlation is the relationship between two or more variables, which vary with the other in the same or the opposite direction	Regression means going back and it is a mathematical measure showing the average relationship between two variables
2	Both the variables X and Y are random variables	Both the variables may be random variables
3	It finds out the degree of relationship between two variables and not the cause and effect relationship.	It indicates the cause and effect relationship between the variables and establishes functional relationship.
4	It is used for testing and verifying the relation between two variables and gives limited information	Besides verification it is used for the prediction of one value, in relation to the other given value.
5	The coefficient of correlation is a relative measure. The range of relationship lies between –1 and +1	Regression coefficient is also relative measure. If we know the value of the independent variable, we can find the value of the dependent variable
6	There may be spurious correlation between two variables.	In regression there is no such spurious regression
7	It has limited application, because it is confined only to linear relationship between the variables	It has wider application, as it studies linear and nonlinear relationship between the variables
8	It is not very useful for further mathematical treatment.	It is widely used for further mathematical treatment

Two Regression lines

$$X \text{ on } Y \Rightarrow X = a + by$$

$$Y \text{ on } X \Rightarrow Y = a + bx$$

Regression line is the line which gives the best estimate of one variable from the value of any other given variable. The line gives the average relationship between the two variables in mathematical form. The line of regression is the line which gives the best estimate to the value of one variable for any specific value of the other variable.

To fit Regression equations X on Y and Y on X the following examples are given

Ex 1: Fit two regression equation

X on Y and Y on X for the following data.

$\bar{X}$=12, $\bar{Y}$=10, σy= 0.2, σx =0.1 and r = 0.85

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Solution

The equation of the regression line of X on Y is

$$(X-\bar{X}) = r \times \frac{\sigma x}{\sigma y} \times (Y-\bar{Y})$$

Given $\bar{X} = 12$, $\bar{Y} = 10$

$r = 0.85$, $\sigma x = 0.1$ and $\sigma y = 0.2$

Then substituting the values in formula

$$(X-12) = 0.85 \times (0.1/0.2) \times (Y-10)$$
$$(X-12) = 0.85 \times (0.5) \times (Y-10)$$
$$X = 0.425 \times (Y-10) + 12$$
$$X = 0.425Y - 4.25 + 12$$
$$X = 0.425Y + 7.75$$

X on Y

Answer X = 0.425Y + 7.75

The equation of the regression line of Y on X is

$$(Y-\bar{Y}) = r \times \frac{\sigma y}{\sigma x} \times (X-\bar{X})$$

Given $\bar{X} = 12$, $\bar{Y} = 10$

$r = 0.85$, $\sigma x = 0.1$ and $\sigma y = 0.2$

Then substituting the values in formula

$$(Y-10) = 0.85 \times (0.2/0.1) \times (X-12)$$
$$(Y-10) = 0.85 \times (2) \times (X-12)$$
$$Y = 1.7 \times (X-12) + 10$$
$$Y = 1.7X - 20.4 + 10$$
$$Y = 1.7X - 10.4$$

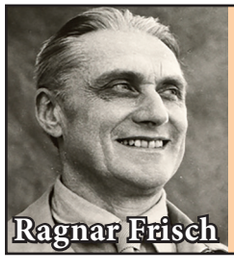
Y on X

Answer Y = 1.7X–10.4

12.14 Introduction To Econometrics

Origin Of Econometrics

Economists tried to support their ideas with facts and figures in ancient times. Irving Fisher is the first person, developed mathematical equation in the quantity theory of money with help of data. Ragnar Frisch, a Norwegian economist and statistician named the integration of three subjects such that mathematics, statistical methods and economics as Econometrics" in 1926.



Ragnar Anton Kittil Frisch Noble Memorial Prize in 1969

The term econometrics is formed from two words of Greek origin, 'oukovouia' meaning economy and 'uetpov' meaning measure. Econometrics emerged as an independent discipline studying economic phenomena.

Econometrics may be considered as the integration of economics, Statistics and Mathematics.

Econometrics is an amalgamation of three subjects which can be easily understood by following Venn diagram and picture representation.

Economics + Mathematics= Mathematical Economics

Mathematical Economics+ Statistical Data & Its Technique = Econometrics

{Economics + Statistics + Mathematics}+Empirical Data = Econometrics

Definitions

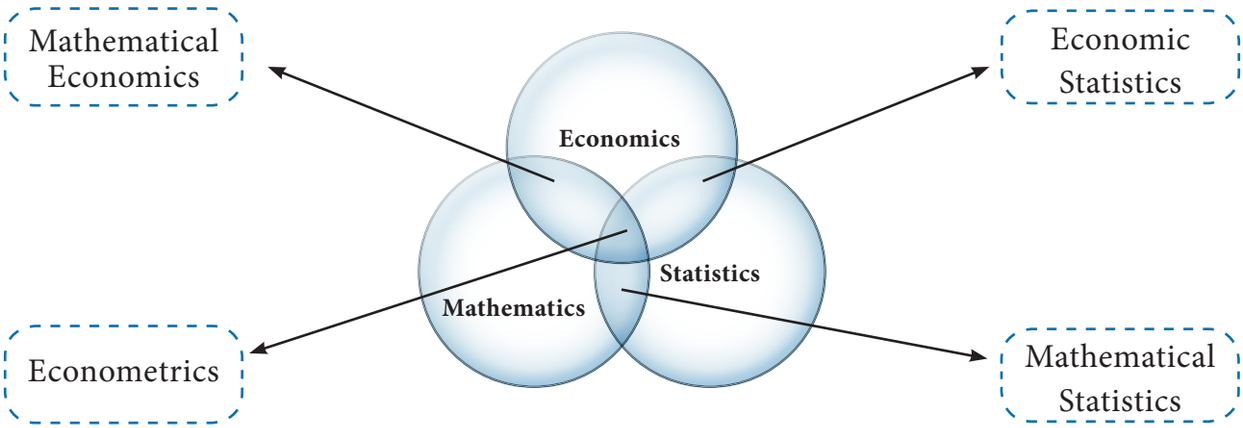
In the words of **Arthur S. Goldberger,** "Econometrics may be defined as the social science in which the tools of economic theory, mathematics and statistical inference are applied to the analysis of economic phenomena".

Gerhard Tinbergen points out that "Econometrics, as a result of certain outlook on the role of economics, consists of application of mathematical statistics to economic data to lend empirical support to the models constructed by mathematical economics and to obtain numerical results".

H Theil"Econometrics is concerned with the empirical determination of economic laws"

In the words of **Ragnar Frisch** "The mutual penetration of quantitative econometric theory and statistical observation is the essence of econometrics".

Econometrics means economic measurement. Econometrics deals with the measurement of economic relationships.



Objectives Of Econometrics

The general objective of Econometrics is to give empirical content to economic theory. The specific objectives are as follows:

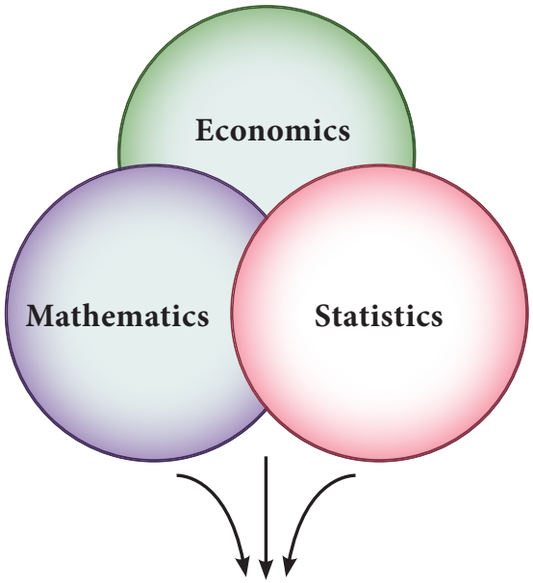
1. It helps to explain the behaviour of a forthcoming period that is forecasting economic phenomena.

2. It helps to prove the old and established relationships among the variables or between the variables

3. It helps to establish new theories and new relationships.

4. It helps to test the hypotheses and estimation of the parameter.

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Amalgamation of above Three Subjects is Econometrics

Methodology Of Econometrics

Broadly speaking, traditional or classical econometric methodology consists of the following steps.

1) Statement of the theory or hypothesis
2) Specification of the mathematical model of the theory
3) Specification of the econometric model of the theory
4) Obtaining the data
5) Estimation of the parameters of the econometric model
6) Hypothesis testing
7) Forecasting or prediction
8) Using the model for control or policy purposes.

Flow Chart of Anatomy / Methodology of Econometrics

Anatomy of Econometric Modeling

Economic theory

Mathematical model of the theory

Economic model of the theory

Data

Estimation of econometric model

Hypothesis Testing

Forecasting or prediction

Using the model for control or policy purpose

Difference between the Econometric model with Mathematical models and statistical models

1. Models in Mathematical Economics are developed based on Economic Theories, while, Econometric Models are developed based on Economic Theories to test the validity of Economic Theories in reality through the actual data.
2. Regression Analysis in Statistics does not concentrate more on error term while Econometric Models concentrate more on error terms

Statistics Regression:

$$Yi = \beta_0 + \beta_1 X_i$$

Econometrics Regression:

$$Yi = \beta_0 + \beta_1 X_i + U_i$$

(with more than 2 variables) or

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + U_i$$

Systematic Part: $\beta_0 + \beta_1 Xi$ or explained part and Random Part: U_i unexplained part in a regression. U_i represents the role of omitted variables in specifying a regression relationship of Y on X. Hence, the U_i cannot and should not be ignored.

Assumptions of the Linear Regression Model

The Linear regression model is based on certain assumptions

1. Some of them refer to the distribution of the random variable .
2. Some of them refer to the relationship between U_i and the explanatory variables (x_1, x_2, x_3 given in the above example).
3. Some of them refer to the relationship between U_i the explanatory variables themselves.

Assumptions about the distribution of the values of are called stochastic assumptions of ordinary least squares (OLS). Assumptions relating to the relationship between U_i and explanatory variables and relating to the relationship among the explanatory variables are called other assumptions.

Assumptions

1. "U" is a random real variable. That is "U" may assume positive, negative or zero values. Hence the mean of the "U" will be zero.
2. The variance of "U" is constant for all values of "U"
3. The "U" has a normal distribution.
4. The Covariances of any U_i with any other U_j are equal to zero
5. "U" is independent of explanatory variable (s)
6. Explanatory variables are measured without error.
7. The explanatory variables are not perfectly linearly correlated.
8. The variables are correctly aggregated.
9. The relationship is correctly identified and specified.
10. Parameters are linear.

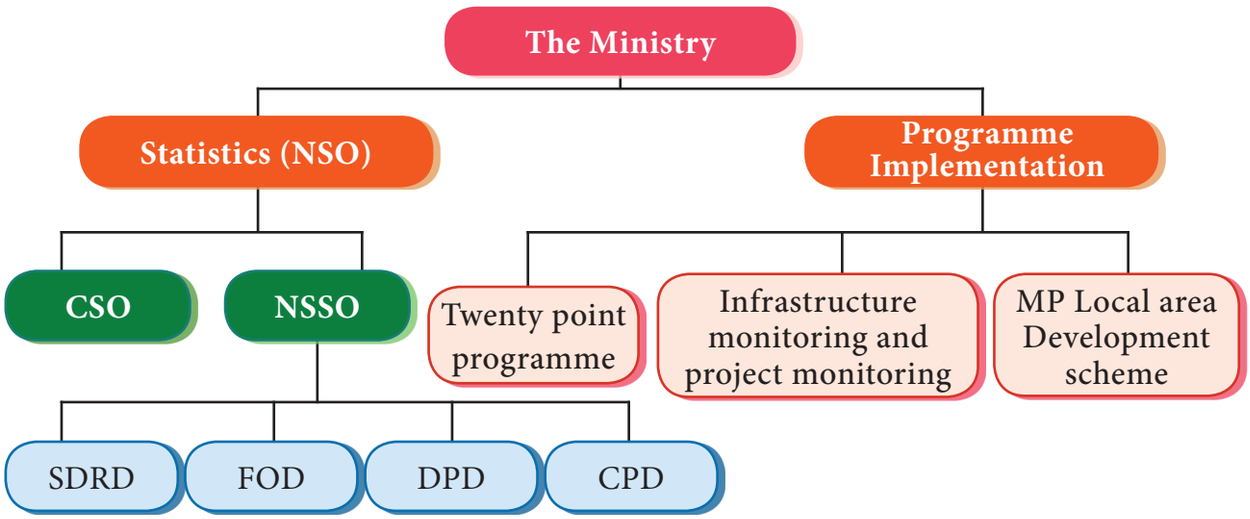
12.15 Official Statistics

Official Statistics are statistics published by government agencies or other public bodies such as international organizations. They provide quantitative or qualitative information on all major areas of citizens' lives. Official Statistics make information on economic and social development accessible to the public, allowing the impact of government policies to be assessed, thus improving accountability.

The Ministry of Statistics and Programme Implementation (MOSPI) came into existence as an Independent Ministry in 1999 after the merging of the Department of Statistics and the Department of Programme Implementation.

The Ministry has two wings, Statistics and Programme Implementation.

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The Statistics Wing called the National Statistical Office (NSO) consists of the Central Statistical Office (CSO), the Computer Centre and the National Sample Survey Office (NSSO).

Central Statistical Office (CSO)

The Central Statistical Office is one of the two wings of the National Statistical Organisation (NSO). It is responsible for co-ordination of statistical activities in the country and for evolving and maintaining statistical standards. Its activities include compilation of National Accounts; conduct of Annual Survey of Industries and Economic Censuses, compilation of Index of Industrial Production as well as Consumer Price Indices. It also deals with various social statistics, training, international cooperation, Industrial Classification, etc.

The CSO is headed by a Director-General who is assisted by 5 Additional Director-Generals looking after the National Accounts Division, Social Statistics Division, Economic Statistics Division, Training Division and the Coordination and Publication Division.

CSO is located in the Sardar Patel Bhawan, Parliament Street, New Delhi. The Industrial Statistics Wing of CSO is located in Kolkata. The Computer Centre also under the CSO is located in R K Puram, New Delhi.

National Sample Survey Organisation (NSSO)

The National Sample Survey Organisation, now known as National Sample Survey Office, is an organization under the Ministry of Statistics of the Government of India.It is the largest organisation in India, conducting regular socio-economic surveys. It was established in 1950. NSSO has four divisions:

1. Survey Design and Research Division (SDRD)
2. Field Operations Division (FOD)
3. Data Processing Division (DPD)
4. Co-ordination and Publication Division (CPD)

The Programme Implementation Wing has three Divisions, namely,

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(i) Twenty Point Programme

(ii) Infrastructure Monitoring and Project Monitoring

(iii) Member of Parliament Local Area Development Scheme.

Besides these three wings, there is National Statistical Commission created through a Resolution of Government of India (MOSPI) and one autonomous Institute, viz., Indian Statistical Institute declared as an institute of National importance by an Act of Parliament.

Summary

First Part deals with meaning of statistics, nature, type and scope. Brief information about the data, data source and its kinds are given in the second part. The third part of this chapter explains correlation 'r' which measures the strength and direction of the linear association between two quantitative variables x and y. The fourth section depicts regression. The last part of this chapter introduces Econometrics. Next the organizational structure of Indian statistical system is given in a gist.

MODEL QUESTIONS

O6TZD

Part – A

Multiple choice questions

1. The word 'statistics' is used as _____.

   (a) Singular.
   (b) Plural
   (c) Singular and Plural.
   (d) None of above.

2. Who stated that statistics is a science of estimates and probabilities.

   (a) Horace Secrist.
   (b) R.A Fisher.
   (c) Ya-Lun-Chou
   (d) Boddington

3. Sources of secondary data are _____.

   (a) Published sources.
   (b) Unpublished sources.
   (c) neither published nor unpublished sources.
   (d) Both (A) and (B)

4. The data collected by questionnaires are_____.

   (a) Primary data.
   (b) Secondary data.
   (c) Published data.
   (d) Grouped data.

5. A measure of the strength of the linear relationship that exists between two variables is called:

   (a) Slope
   (b) Intercept
   (c) Correlation coefficient
   (d) Regression equation

6. If both variables X and Y increase or decrease simultaneously, then the coefficient of correlation will be:

   (a) Positive
   (b) Negative
   (c) Zero
   (d) One

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7. If the points on the scatter diagram indicate that as one variable increases the other variable tends to decrease the value of r will be:

(a) Perfect positive
(b) Perfect negative
(c) Negative
(d) Zero

8. The value of the coefficient of correlation r lies between:

(a) 0 and 1
(b) -1 and 0
(c) -1 and +1
(d) -0.5 and +0.5

9. The term regression was used by:

(a) Newton
(b) Pearson
(c) Spearman
(d) Galton

10. The purpose of simple linear regression analysis is to:

(a) Predict one variable from another variable
(b) Replace points on a scatter diagram by a straight-line
(c) Measure the degree to which two variables are linearly associated
(d) Obtain the expected value of the independent random variable for a given value of the dependent variable

11. A process by which we estimate the value of dependent variable on the basis of one or more independent variables is called:

(a) Correlation
(b) Regression
(c) Residual
(d) Slope

12. If Y = 2 - 0.2X, then the value of Y intercept is equal to

(a) -0.2
(b) 2
(c) 0.2X
(d) All of the above

13. In the regression equation $Y = \beta_0+\beta_1X$, the Y is called:

(a) Independent variable
(b) Dependent variable
(c) Continuous variable
(d) none of the above

14. In the regression equation $Y = \beta_0+\beta_1X$, the X is called:

(a) Independent variable
(b) Dependent variable
(c) Continuous variable
(d) none of the above

15. Econometrics is the integration of

(a)Economics and Statistics
(b) Economics and Mathematics
(c)Economics, Mathematics and Statistics
(d) None of the above

16 .Econometric is the word coined by

(a) Francis Galton
(b) RagnarFrish
(c) Karl Person
(d) Spearsman

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17. The raw materials of Econometrics are:

(a) Data
(b) Goods
(c) Statistics
(d) Mathematics

18. The term U_i in regression equation is

(a) Residuals
(b) Standard error
(c) Stochastic error term
(d) none

19. The term U_i is introduced for the representation of

(a) Omitted Variable
(b) Standard error
(c) Bias
(d) Discrete Variable

20. Econometrics is the amalgamation of

(a) 3 subjects
(b) 4 subjects
(c) 2 subjects
(d) 5 subjects

Answers

1	2	3	4	5	6	7	8	9	10
c	d	d	a	c	a	c	c	d	a
11	12	13	14	15	16	17	18	19	20
b	b	b	a	c	b	a	c	a	a

Part-B

Answer the following in one or two sentences

21. What is Statistics?
22. What are the kinds of Statistics?
23. What do you mean by Inferential Statistics?
24. What are the kinds of data?
25. Define Correlation.
26. Define Regression.
27. What is Econometrics?

Part-C

Answer the following questions in one paragraph:

28. What are the functions of Statistics?
29. Find the Standard Deviation of the following data:
14, 22, 9, 15, 20, 17, 12, 11 (Answer: = 4.18)
30. State and explain the different kinds of Correlation.
31. Mention the uses of Regression Analysis.
32. Specify the objectives of econometrics.

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33. Differentiate the economic model with econometric model.

34. Discuss the important statistical organizations (offices) in India.

Part-D

Answer the following questions

35. Elucidate the nature and scope of Statistics.

36. Calculate the Karl Pearson's Correlation Co-efficient for the following data

Demand of Product X :	23	27	28	29	30	31	33	35	36	39
Sale of Product Y:	18	22	23	24	25	26	28	29	30	32

Answer: r=0.9955)

37.Find the regression equation Y on X and X on Y for the following data:

Y:	45	48	50	55	65	70	75	72	80	85
X:	25	30	35	30	40	50	45	55	60	65

(Answer: Y = 0.787X + 7.26, and X =0.87Y + 26.65)

38. Describe the application of Econometrics in Economics.

ACTIVITY

1. Check, Count and make a data set of the number of pages of your subject books of Economics, Commerce, History, Tamil and English

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TERMINOLOGY

Accelerator	முடுக்கி
Balance of trade	அயல்நாட்டு வாணிக நிலை
Balance of payments	அயல்நாட்டு செலுத்துச் சமநிலை
Budget	வரவு செலவுத் திட்டம்
Budgetary deficit	நிதிநிலைப் பற்றாக்குறை
Commercial Banks	வணிக வங்கிகள்
Central Bank	மைய வங்கி
Credit creation	கடன் உருவாக்கம்
Cash Reserve Ratio	ரொக்க இருப்பு வீதம்
Capitalism	முதலாளித்துவம்
Capital formation	மூலதன உருவாக்கம்
Capital	மூலதனம்
Consumption function	நுகர்வுச் சார்பு
Comparative cost advantage	ஒப்பீட்டுச் செலவு நன்மை
Customs union	சுங்க வரி ஒன்றியம்
Common market	பொது அங்காடி
Capital accumulation	மூலதனத் திரட்சி
Casino capitalism	சூதாட்ட முதலாளித்துவம்
Crony capitalism	சலுகைசார் முதலாளித்துவம்
Credit control	கடன் கட்டுப்பாடு
Credit Rationing	கடன் பங்கீடு
Correlation co-efficient	உடன் தொடர்புக் கெழு
Development	முன்னேற்றம்
Disposable income	செலவிடக் கூடிய வருமானம்
Deflation	பணவாட்டம்
Disinflation	மித பணவீக்கம்
Demonetization	பண மதிப்பிழப்பு
Devaluation	நாணய மதிப்புக் குறைப்பு
Developing countries	வளரும் நாடுகள்
Developed countries	வளர்ந்த நாடுகள்
Demand deposit	கேட்பு வைப்பு
Economics	பொருளியல்
Exchange rate	மாற்று வீதம்
Exchange control	மாற்று வீதக் கட்டுப்பாடு

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Economic union	பொருளாதாரக் கூட்டு
Eco system	சுற்றுச் சூழல்
Econometrics	பொருளாதார அளவியல்
Face value	முக மதிப்பு
Foreign country	அயல் நாடு
Fiscal policy	அரசின் பொது நிதிக் கொள்கை
Finance commission	நிதிக் குழு
Fiscal deficit	நிதிப்பற்றாக்குறை
Free Trade Area	தடையிலா வாணிகப் பகுதி
Firm	நிறுவனம்
Growth	வளர்ச்சி
General agreement on tariffs and trade	சுங்க வரி, வாணிகம் தொடர்பான பொது ஒப்பந்தம்
Goods and services Tax	பண்டங்கள், பணிகள் வரி
Industry	தொழில்
Investment	முதலீடு
Intrinsic value	அகமதிப்பு
Inflation	பணவீக்கம்
Induced investment	தூண்டப்பட்ட முதலீடு
International economics	பன்னாட்டுப் பொருளியல்
International monetary fund	பன்னாட்டுப் பணநிதியம்
Indicative planning	சுட்டிக்காட்டும் திட்டம்
Imperative planning	கட்டாயத் திட்டமிடல்
Incidence of Taxation	வரி பளு அல்லது வரிச்சுமை
IDBI	இந்திய தொழில் வளர்ச்சி வங்கி
Laissez – Faire capitalist economy	தலையிடாக் கொள்கையைக் கொண்டுள்ள முதலாளித்துவப் பொருளாதாரம்
Liquidity	ரொக்கத்தன்மை அல்லது நீர்மைத்தன்மை
Macro economics	பேரினப் பொருளாதாரம்
Mixed economy	கலப்புப் பொருளாதாரம்
Marginal propensity to consume	இறுதிநிலை நுகர்வு விருப்பம்
Marginal propensity to save	இறுதிநிலை சேமிப்பு நாட்டம்
Multiplier	பெருக்கி
Multilateral Trade Agreement	பன்முக வாணிக ஒப்பந்தம்
Monetary policy	பணக் கொள்கை
Moral suasion	அறிவுறுத்தல்
Measure of central Tendency	மையபோக்கு அளவைகள்
Measure of dispersion	பரவல் (அல்லது) சிதறல்
National Income	நாட்டு வருமானம்
Negative externalities	எதிர்மறைப் புறவிளைவுகள்

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NABARD	தேசிய வேளாண் மற்றும் கிராமப்புற வளர்ச்சி வங்கி
Omitted variable	விடுபட்ட மாறிகள்
Personal income	சொந்த (தனிநபர்) வருமானம்
Per capita income	தலைவீத வருமானம்
Proportional Tax	விகிதாச்சார வரி
Progressive Tax	வளர்வீத வரி
Public Debt	பொதுக்கடன்
Positive externalities	உடன்பாடான புற விளைவுகள்
Patrimonial capitalism	தந்தைவழி முதலாளித்துவம்
Planning commission	திட்டக் குழு
Primary data	முதனிலைப் புள்ளி விவரம்
RRB	வட்டார கிராம வங்கி
Regression Coefficients	உடன் தொகை கெழு
Subjective factors	மனஇயல் காரணிகள்
Stagflation	தேக்க வீக்கம்
Speculation	ஊகம்
Special Drawing Rights	சிறப்பு எடுப்பு உரிமைகள்
Sustainable development	நிலைத்த முன்னேற்றம்
Social justice	சமூக நீதி
Statutory liquidity Ratio	சட்ட பூர்வ இருப்பு வீதம்
Statistics	புள்ளியியல்
Secondary data	இரண்டாம் நிலைப் புள்ளி விவரம்
Terms of Trade	நிபந்தனை
Trade Blocs	வர்த்தக குழுமங்கள்
Tax evasion	வரி ஏய்ப்பு
Tax avoidance	வரி தவிர்ப்பு
Time deposit	கால வைப்பு
Underdeveloped Countries	பின்தங்கிய நாடுகள்
Undeveloped Countries	வளர்ச்சி குறைந்த நாடுகள்
Vicious circle of poverty	வறுமையின் நச்சுச் சுழல்
World Bank	உலக வங்கி
World Trade Centre	உலக வாணிக நடுவம்
World Trade Organisation	உலக வாணிக நிறுவனம்

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